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### 2.1.3 Period 3 - Site Restoration

Following completion of decommissioning operations, site restoration activities will begin. Efficient removal of the contaminated materials and verification that residual radionuclide concentrations are below the NRC limits will result in substantial damage to many of the structures. Although performed in a controlled and safe manner, blasting, coring, drilling, scarification (surface removal), and the other decontamination activities will substantially degrade power block structures including the reactor and auxiliary buildings. Under certain circumstances, verifying that subsurface radionuclide concentrations meet NRC site release requirements will require removal of grade slabs and lower floors, potentially weakening footings and structural supports. This removal activity will be necessary for those facilities and plant areas where historical records, when available, indicate the potential for radionuclides having been present in the soil, where system failures have been recorded, or where it is required to confirm that subsurface process and drain lines were not breached over the operating life of the station.

Dismantling of site structures following decommissioning is clearly the most appropriate and cost-effective option. It is unreasonable to anticipate that these structures would be repaired and preserved after the radiological contamination is removed. The effort to dismantle site structures with a work force already mobilized on site is more efficient than if the process were deferred. Site facilities quickly degrade without maintenance, adding additional expense and creating potential hazards to the public as well as to future workers. Abandonment creates a breeding ground for vermin infestation as well as other biological hazards.

This cost study presumes that non-essential structures and site facilities are dismantled as a continuation of the decommissioning activity. Foundations and exterior walls are completely removed, including foundations and basemats as required by Minnesota regulations. [27] Site areas affected by the dismantling activities are restored and the plant area graded as required to prevent ponding, establish erosion control by the planting of native vegetation, and inhibit the refloating of subsurface materials.

Non-contaminated concrete rubble produced by demolition activities is processed to remove reinforcing steel and miscellaneous embedments. All non-contaminated materials are trucked to an off-site area for

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disposal as construction debris. Subgrade voids are backfilled with clean construction fill, suitable under Minnesota regulations.

# 2.1.4 <u>ISFSI Operations and Decommissioning</u>

The ISFSI will continue to operate under a site-specific license as authorized by 10 CFR Part 72 following the amendment of the operating license to release the adjacent (power block) property. Assuming that Prairie Island spent fuel shipments begin in 2037, the process is not expected to be completed until 2074 (Scenario 1). Any delay in the transfer process, for example, due to a delay in the scheduled opening of the geologic repository, a slower acceptance rate, or a combination of both, can result in a longer on-site residence time for the fuel discharge from the reactor, as well as additional caretaking expenses. Scenarios 3 and 4 address extended delay periods, which includes the assumption that the spent fuel DSCs will need to be replaced every fifty years.

The assumed design for the ISFSI is based upon the use of the existing TN-40 casks from Transnuclear, plus the use of a multi-purpose dry shielded storage canister and a NUHOMS horizontal storage module for pad storage for those fuel assemblies packaged after plant shutdown.

At the conclusion of the spent fuel transfer process, the ISFSI will be decommissioned. The Commission will terminate the license if it determines that the remediation of the ISFSI has been performed in accordance with an ISFSI license termination plan and that the final radiation survey and associated documentation demonstrate that the facility is suitable for release. Once the requirements are satisfied, the NRC can terminate the license for the ISFSI.

For purposes of this cost analysis, it is assumed that once the TN-40s and DSCs containing the spent fuel assemblies have been removed, any required decontamination is performed on the storage overpacks (some minor neutron-induced activation is assumed), and the license for the facility terminated, the concrete overpacks can be dismantled using conventional techniques for the demolition of reinforced concrete. The concrete storage pad is then removed and the area regraded. This topic is discussed in greater detail in section 3.4.1.

# 2.2 SAFSTOR

The NRC defines SAFSTOR as "the alternative in which the nuclear facility is placed and maintained in a condition that allows the nuclear facility to be

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safely stored and subsequently decontaminated (deferred decontamination) to levels that permit release for unrestricted use." The facility is left intact (during the dormancy period), with structures maintained in a sound condition. Systems not required to operate in support of the spent fuel pool or site surveillance and security are drained, de-energized, and secured. Minimal cleaning/removal of loose contamination and/or fixation and sealing of remaining contamination are performed. Access to contaminated areas is secured to provide controlled access for inspection and maintenance.

The engineering and planning requirements are similar to those for the DECON alternative. Site preparations are also similar to those for the DECON alternative. However, with the exception of the required radiation surveys and site characterizations, the mobilization and preparation of site facilities is less extensive.

# 2.2.1 Period 1 - Preparations

Preparations for long-term storage include the planning for permanent defueling of the reactors, revision of technical specifications appropriate to the operating conditions and requirements, a characterization of the facility and major components, and the development of the PSDAR.

The process of placing the plant in safe-storage includes, but is not limited to, the following activities:

- Isolation of the spent fuel storage services and fuel handling systems located in the auxiliary building so that safe-storage operations may commence on the balance of the plant. This activity may be carried out by plant personnel in accordance with existing operating technical specifications. Activities are scheduled around the fuel handling systems to the greatest extent possible.
- Draining and de-energizing of the non-contaminated systems not required to support continued site operations or maintenance.
- Disposing of contaminated filter elements and resin beds not required for processing wastes from layup activities for future operations.
- Draining of the reactor vessels, with the internals left in place and the vessel heads secured.
- Draining and de-energizing non-essential, contaminated systems with decontamination as required for future maintenance and inspection.

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- Preparing lighting and alarm systems whose continued use is required; de-energizing portions of fire protection, electric power, and HVAC systems whose continued use is not required.
- Cleaning of the loose surface contamination from building access pathways.
- Performing an interim radiation survey of plant, posting warning signs where appropriate.
- Erecting physical barriers and/or securing all access to radioactive or contaminated areas, except as required for inspection and maintenance.
- Installing security and surveillance monitoring equipment and relocating security fence around secured structures, as required.

### 2.2.2 Period 2 - Dormancy

The second phase identified by the NRC in its rule addresses licensed activities during a storage period and is applicable to the dormancy phases of the deferred decommissioning alternatives. Dormancy activities include a 24-hour security force, preventive and corrective maintenance on security systems, area lighting, general building maintenance, heating and ventilation of buildings, routine radiological inspections of contaminated structures, maintenance of structural integrity, and a site environmental and radiation monitoring program. Resident maintenance personnel perform equipment maintenance, inspection activities, routine services to maintain safe conditions, adequate lighting, heating, and ventilation, and periodic preventive maintenance on essential site services.

An environmental surveillance program is carried out during the dormancy period to ensure that releases of radioactive material to the environment are prevented and/or detected and controlled. Appropriate emergency procedures are established and initiated for potential releases that exceed prescribed limits. The environmental surveillance program constitutes an abbreviated version of the program in effect during normal plant operations.

Security during the dormancy period is conducted primarily to protect the spent nuclear fuel while it is on site, prevent unauthorized entry, and to protect the public from the consequences of their own actions. The security fence, sensors, alarms, and other surveillance equipment provide security. Fire and radiation alarms are also monitored and

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maintained. While remote surveillance is an option, it does not offer the immediate response time of a physical presence.

The length of the dormancy period is such that decommissioning (license termination) of the station (excluding the ISFSI) is accomplished within 60 years of final shutdown. During Scenario 5, the transfer of the spent fuel to a DOE facility continues during this period until complete. The Scenario 6 SAFSTOR has the site remain in dormancy following spent fuel removal to the maximum extent possible, such that the licenses are terminated within the required 60-year time period. Scenarios 7 and 8 address extended delay periods, which include the assumption that the spent fuel DSCs will need to be replaced every fifty years.

It is required that the licensee submit an application to terminate each license, along with a LTP (described in Section 2.1.2), thereby initiating delayed decommissioning.

### 2.2.3 Periods 3 and 4 - Delayed Decommissioning

With the beginning of the third phase, prior to the commencement of decommissioning operations, preparations are undertaken to reactivate site services and prepare for decommissioning. Preparations include engineering and planning, a detailed site characterization, and the assembly of a decommissioning management organization. Final planning for activities and the writing of activity specifications and detailed procedures are also initiated at this time.

Much of the work in developing a termination plan is relevant to the development of the detailed engineering plans and procedures. The activities associated with this phase and the follow-on decontamination and dismantling processes are detailed in Sections 2.1.1 and 2.1.2. The primary difference between the sequences anticipated for the DECON and SAFSTOR scenarios is the absence, in the latter, of any constraint on the availability of the fuel storage pool located within the auxiliary building for decommissioning.

Variations in the length of the dormancy period are expected to have some effect upon the quantities of radioactive wastes generated from system and structure removal operations. However, given the levels of radioactivity and spectrum of radionuclides expected from approximately sixty years of plant operation, no plant process system identified as being contaminated upon final shutdown will become releasable due to the decay period alone. (i.e., there is no significant

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reduction in the waste generated from the decommissioning activities). Due to the lower activity levels, a greater percentage of the waste volume can be designated for off-site processing and recovery.

The delay in decommissioning also yields lower working area radiation levels. As such, the estimate for the delayed scenarios incorporate reduced ALARA controls for the SAFSTOR's lower occupational exposure potential.

Although the initial radiation levels due to <sup>60</sup>Co will substantially decrease during the dormancy period, the internal components of the reactor vessels will still exhibit sufficiently high radiation dose rates to require remote sectioning under water due to the presence of long-lived radionuclides such as <sup>94</sup>Nb, <sup>59</sup>Ni, and <sup>63</sup>Ni. Therefore, the dismantling procedures described for the DECON alternative would still be employed during this scenario. Portions of the biological shield wall will still be radioactive due to the presence of activated trace elements with long half-lives (<sup>152</sup>Eu and <sup>154</sup>Eu). Decontamination will require controlled removal and disposal. It is assumed that radioactive corrosion products on inner surfaces of piping and components will not have decayed to levels that will permit unrestricted use or allow conventional removal. These systems and components will be surveyed as they are removed and disposed of in accordance with the existing radioactive release criteria.

### 2.2.4 Period 5 - Site Restoration

Following completion of decommissioning operations, site-restoration activities can begin. Dismantling, as a continuation of the decommissioning process, is a cost-effective option, as described in Section 2.1.3. The basis for the dismantling cost in this scenario is consistent with that described for DECON, presuming the removal of structures and site facilities to include the existing foundations and basemats, and the limited restoration of the site.

#### 2.2.5 ISFSI Operations and Decommissioning

For Scenarios 7 and 8, the ISFSI will continue to operate under a site-specific license as authorized by 10 CFR Part 72 following the amendment of the operating license to release the adjacent (power block) property. Assuming that Prairie Island spent fuel shipments begin in 2093, the process is not expected to be completed until 2117 (Scenario 7). Assuming that Prairie Island spent fuel shipments begin in 2193, the process is not expected to be completed until 2217 (Scenario 8). Any

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delay in the transfer process, for example, due to a delay in the scheduled opening of the geologic repository, a slower acceptance rate, or a combination of both, can result in a longer on-site residence time for the fuel, as well as additional caretaking expenses. ISFSI operations will include the assumption that the spent fuel DSCs will need to be replaced every fifty years.

Operations and decommissioning activities for Scenarios 7 and 8 during a SAFSTOR scenario proceed in a similar fashion to the Scenario 3 and 4 following DECON, as discussed in Section 2.1.4.

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#### 3. COST ESTIMATES

The cost estimates prepared for decommissioning Prairie Island consider the unique features of the site, including the NSSS, power generation systems, support services, site buildings, and ancillary facilities. The basis of the estimates, including the sources of information relied upon, the estimating methodology employed, site-specific considerations, and other pertinent assumptions, is described in this section.

#### 3.1 BASIS OF ESTIMATES

The estimates were developed using the site-specific, technical information from the 2017 analysis. The plant inventory, the basis for the decontamination and dismantling requirements and cost, and the decommissioning waste streams, was reviewed for this analysis; no substantive changes were identified over the three-year period (between estimates) to the configuration of the plant or site facilities that would impact decommissioning. The site-specific considerations and assumptions used in the previous evaluation were also revisited; no necessary modifications were identified.

#### 3.2 METHODOLOGY

The methodology used to develop the estimates follows the basic approach originally presented in the AIF/NESP-036 study report, "Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates," [28] and the DOE "Decommissioning Handbook." [29] These documents present a unit factor method for estimating decommissioning activity costs, which simplifies the estimating calculations. Unit factors for concrete removal (\$/cubic yard), steel removal (\$/ton), and cutting costs (\$/inch) were developed using local labor rates. The activity-dependent costs were estimated with the item quantities (cubic yards and tons), developed from plant drawings and inventory documents. Removal rates and material costs for the conventional disposition of components and structures relied upon information available in the industry publication, "Building Construction Cost Data," published by RSMeans. [30]

The unit factor method provides a demonstrable basis for establishing reliable cost estimates. The detail provided in the unit factors, including activity duration, labor costs (by craft), and equipment and consumable costs, ensures that essential elements have not been omitted. Appendix A presents the detailed development of a typical unit factor. Appendix B provides the values contained within one set of factors developed for this analysis.

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Regulatory Guide 1.184 [31] describes the methods and procedures that are acceptable to the NRC staff for implementing the requirements that relate to the initial activities and the major phases of the decommissioning process. The costs and schedules presented in this analysis follow the general guidance and sequence in the regulations. The format and content of the estimates is also consistent with the recommendations of Regulatory Guide 1.202. [32]

The estimates also reflect lessons learned from TLG's involvement in the Shippingport Station Decommissioning Project, completed in 1989, as well as the decommissioning of the Cintichem reactor, hot cells and associated facilities, completed in 1997. In addition, the planning and engineering for the Rancho Seco, Trojan, Yankee Rowe, Big Rock Point, Maine Yankee, Humboldt Bay-3, Oyster Creek, Connecticut Yankee, Crystal River, Vermont Yankee, Fort Calhoun, Pilgrim, and Indian Point nuclear units have provided additional insight into the process, the regulatory aspects, and the technical challenges of decommissioning commercial nuclear units.

#### **Work Difficulty Factors**

The estimates follow the principles of ALARA through the use of work duration adjustment factors. These factors address the impact of activities such as radiological protection instruction, mock-up training, and the use of respiratory protection and protective clothing. The factors lengthen a task's duration, increasing costs and lengthening the overall schedule. ALARA planning is considered in the costs for engineering and planning, and in the development of activity specifications and detailed procedures. Changes to worker exposure limits may impact the decommissioning cost and project schedule.

Work difficulty adjustment factors (WDFs) account for the inefficiencies in working in a power plant environment. The factors are assigned to each unique set of unit cost factors, commensurate with the inefficiencies associated with working in confined, hazardous environments. The ranges used for the WDFs are as follows:

•	Access Factor	10% to 20%
•	Respiratory Protection Factor	10% to 50%
•	Radiation/ALARA Factor	10% to 40%
•	Protective Clothing Factor	10% to 30%
•	Work Break Factor	8.33%

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The factors and their associated range of values were developed in conjunction with the AIF/NESP-036 study. The application of the factors is discussed in more detail in that publication.

#### Scheduling Program Durations

The unit factors, adjusted by the WDFs as described above, are applied against the inventory of materials to be removed in the radiologically controlled areas. The resulting man-hours, or crew-hours, are used in the development of the decommissioning program schedule, using resource loading and event sequencing considerations. The scheduling of conventional removal and dismantling activities are based upon productivity information available from the RSMeans "Building Construction Cost Data" publication. Dismantling of the fuel handing systems and decontamination of the spent fuel pool is also dependent upon the timetable for the transfer of the spent fuel assemblies from the pool to the ISFSI.

The program schedule is used to determine the period-dependent costs for program management, administration, field engineering, equipment rental, contracted services, etc. The study relies upon regional or site-specific salary and wage rates for the personnel associated with the intended program.

#### 3.3 IMPACT OF DECOMMISSIONING MULTIPLE REACTOR UNITS

In estimating the near simultaneous decommissioning of two co-located reactor units there can be opportunities to achieve economies of scale, by sharing costs between units, and coordinating the sequence of work activities. There will also be schedule constraints, particularly where there are requirements for specialty equipment and staff, or practical limitations on when final status surveys can take place. For purposes of the estimates, Units 1 and 2 are assumed to be essentially identical. Common facilities have been assigned to Unit 2. A summary of the principal impacts is listed below.

• The sequence of work generally follows the principal that the work is done at Unit 1 first, followed by similar work at Unit 2. This permits the experience gained at Unit 1 to be applied by the workforce at the second unit. It should be noted however, that the estimates do not consider productivity improvements at the second unit, since there is little documented experience with decommissioning two units simultaneously. The work associated with developing activity specifications and procedures can be considered essentially identical between the two units, therefore the second unit costs are assumed to be a fraction of the first unit (~ 43%).

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- Segmenting the reactor vessel and internals will require the use of special equipment. The cost of procuring that equipment is assumed to be shared on an equal basis between the two units. In addition, the decommissioning project will be scheduled such that Unit 2's reactor internals and vessel are segmented immediately after the activities at Unit 1 have been completed.
- Duplication of some program management and support costs, particularly costs associated with the more senior positions, can be avoided with two reactors undergoing decommissioning simultaneously. As a result, the estimates are based on a "lead" unit that includes these senior positions, and a "second" unit that excludes these positions. The designation as lead is based on the unit undertaking the most complex tasks (for instance vessel segmentation) or performing tasks for the first time.
- The final radiological survey schedule is also affected by a two-unit decommissioning schedule. Trying to complete the final status survey of Unit 1, while Unit 2 still has ongoing radiological remediation work and waste handling in process is considered impractical. As a result, Unit 1 and Unit 2 delay durations awaiting spent fuel pool availability for decommissioning are synchronized, such that the spent fuel pool area decommissioning and subsequent final status survey can be completed for the station. During the spent fuel storage period, program management costs are reduced accordingly.
- The final demolition of buildings at Units 1 and 2 are considered to take place concurrently.
- Unit 1, as the first unit to enter decommissioning, incurs the majority of site characterization costs.
- Shared systems and structures are generally assigned to Unit 2.
- Station costs such as ISFSI operations, emergency response fees, regulatory agency fees, and insurance are generally allocated on an equal basis between the two units.

#### 3.4 FINANCIAL COMPONENTS OF THE COST MODEL

TLG's proprietary decommissioning cost model, DECCER, produces a number of distinct cost elements. These direct expenditures, however, do not comprise the total cost to accomplish the project goal, i.e., license termination and site restoration.

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#### 3.4.1 Contingency

Inherent in any cost estimate that does not rely on historical data is the inability to specify the precise source of costs imposed by factors such as tool breakage, accidents, illnesses, weather delays, and labor stoppages. In the DECCER cost model, contingency fulfills this role. Contingency is added to each line item to account for costs that are difficult or impossible to develop analytically. Such costs are historically inevitable over the duration of a job of this magnitude; therefore, this cost analysis includes funds to cover these types of expenses.

The activity- and period-dependent costs are combined to develop the total decommissioning cost. A contingency is then applied on a line-item basis, using one or more of the contingency types listed in the AIF/NESP-036 study. "Contingencies" are defined in the American "Project and Cost Engineers' Association of Cost Engineers Handbook"[33] as "specific provision for unforeseeable elements of cost within the defined project scope; particularly important where previous experience relating estimates and actual costs has shown that unforeseeable events which will increase costs are likely to occur." The cost elements in this analysis are based upon ideal conditions and maximum efficiency; therefore, consistent with industry practice, a contingency factor has been applied. In the AIF/NESP-036 study, the types of unforeseeable events that are likely to occur in decommissioning are discussed and guidelines are provided for percentage contingency in each category. It should be noted that contingency, as used in this analysis, does not account for price escalation and inflation in the cost of decommissioning over the remaining operating life of the station.

The use and role of contingency within decommissioning estimates is not a "safety factor issue." Safety factors provide additional security and address situations that may never occur. Contingency funds are expected to be fully expended throughout the program. They also provide assurance that sufficient funding is available to accomplish the intended tasks. An estimate without contingency, or from which contingency has been removed, can disrupt the orderly progression of events and jeopardize a successful conclusion to the decommissioning process.

For example, the most technologically challenging task in decommissioning a commercial nuclear plant is the disposition of the reactor vessels and internal components, now highly radioactive after a lifetime of exposure to core activity. The disposition of these components

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forms the basis of the critical path (schedule) for decommissioning operations. Cost and schedule are interdependent, and any deviation in schedule has a significant impact on cost for performing a specific activity.

Disposition of the reactor vessel internals involves the underwater cutting of complex components that are highly radioactive. Costs are based upon optimum segmentation, handling, and packaging scenarios. The schedule is primarily dependent upon the turnaround time for the heavily shielded shipping casks, including preparation, loading, and decontamination of the containers for transport. The number of casks required is a function of the pieces generated in the segmentation activity, a value calculated on optimum performance of the tooling employed in cutting the various subassemblies. The expected optimization, however, may not be achieved, resulting in delays and additional program costs. For this reason, contingency must be included to mitigate the consequences of the expected inefficiencies inherent in this complex activity, along with related concerns associated with the operation of highly specialized tooling, field conditions, and water clarity.

Contingency funds are an integral part of the total cost to complete the decommissioning process. Exclusion of this component puts at risk a successful completion of the intended tasks and, potentially, subsequent related activities. For this study, TLG examined the major activity-related problems (decontamination, segmentation, equipment handling, packaging, transport, and waste disposal) that necessitate a contingency. Individual activity contingencies ranged from 10% to 75%, depending on the degree of difficulty judged to be appropriate from TLG's actual decommissioning experience. The contingency values used in this study are as follows:

Decontamination	50%
Contaminated Component Removal	25%
Contaminated Component Packaging	10%
Contaminated Component Transport	15%
Low-Level Radioactive Waste Disposal	25%
Low-Level Radioactive Waste Processing	15%
Reactor Segmentation	75%
NSSS Component Removal	25%
Reactor Waste Packaging	25%
Reactor Waste Transport	25%

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Reactor Vessel Component Disposal	50%
GTCC Disposal	15%
Staffing	15%
Spent Fuel Management	15%
Non-Radioactive Component Removal	15%
Heavy Equipment and Tooling	15%
Supplies	25%
Engineering	15%
Energy	15%
Insurance and Fees	10%
Characterization and Termination Surveys	30%
Operations and Maintenance Expense	15%
Construction	15%
Property Taxes	10%
ISFSI Decommissioning	25%

The contingency values are applied to the appropriate components of the estimates on a line item basis. A composite value is then reported at the end of each detailed estimate (as provided in Appendices C through J). Appendix K, the ISFSI decommissioning calculation, uses a flat 25% contingency added at the end of the calculation.

# 3.4.2 Financial Risk

In addition to the routine uncertainties addressed by contingency, another cost element that is sometimes necessary to consider when bounding decommissioning costs relates to uncertainty, or risk. Examples can include changes in work scope, pricing, job performance, and other variations that could conceivably, but not necessarily, occur. Consideration is sometimes necessary to generate a level of confidence in the estimate, within a range of probabilities. TLG considers these types of costs under the broad term "financial risk." Included within the category of financial risk are:

 Transition activities and costs: ancillary expenses associated with eliminating 50% to 80% of the site labor force shortly after the cessation of plant operations, added cost for worker separation packages throughout the decommissioning program, national or company-mandated retraining, and retention incentives for key personnel.

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- Delays in approval of the decommissioning plan due to intervention, public participation in local community meetings, legal challenges, and national and local hearings.
- Changes in the project work scope from the baseline estimate, involving the discovery of unexpected levels of contaminants, contamination in places not previously expected, contaminated soil previously undiscovered (either radioactive or hazardous material contamination), variations in plant inventory or configuration not indicated by the as-built drawings.
- Regulatory changes (e.g., affecting worker health and safety, site release criteria, waste transportation, and disposal).
- Policy decisions altering national commitments (e.g., in the ability to accommodate certain waste forms for disposition) or in the timetable for such, for example, the start and rate of acceptance of spent fuel by the DOE.
- Pricing changes for basic inputs such as labor, energy, materials, and disposal. Items subject to widespread price competition (such as materials) may not show significant variation; however, others such as waste disposal could exhibit large pricing uncertainties, particularly in markets where limited access to services is available.

This cost study does not add any additional costs to the estimate for financial risk, since there is insufficient historical data from which to project future liabilities. Consequently, the areas of uncertainty or risk are revisited periodically and addressed through repeated revisions or updates of the base estimates.

# 3.5 SITE-SPECIFIC CONSIDERATIONS

There are a number of site-specific considerations that affect the method for dismantling and removal of equipment from the site and the degree of restoration required. The cost impacts of the considerations identified below are included in this cost study.

### 3.5.1 Spent Fuel Management

The cost to dispose of spent fuel generated from plant operations is not reflected within the estimates to decommission Prairie Island. Ultimate disposition of the spent fuel is within the province of the DOE's Waste Management System, as defined by the Nuclear Waste Policy Act. As such, the disposal cost was financed by a 1 mill/kWhr surcharge paid

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into the DOE's waste fund during operations. On November 19, 2013, the U.S. Court of Appeals for the D.C. Circuit ordered the Secretary of the Department of Energy to suspend collecting annual fees for nuclear waste disposal from nuclear power plant operators until the DOE has conducted a legally adequate fee assessment.

The NRC does, however, require licensees to establish a program to manage and provide funding for the management of all irradiated fuel at the reactor site until title of the fuel is transferred to the Secretary of Energy. This requirement is prepared for through inclusion of certain high-level waste cost elements within the estimates, as described below.

Xcel Energy's current spent fuel management plan for the Prairie Island spent fuel is based in general upon:

- 1) Fuel transferred from the pool to the ISFSI within 4 years of shutdown:
- 2) Exchange of Prairie Island and Monticello spent fuel acceptance rights to best manage the overall cost of spent fuel storage for both plants;
- 3) Fuel will be shipped in the existing Transnuclear TN-40 casks, plus NUHOMS DSCs for fuel removed after final plant shutdown (Scenarios 1, 2, 5, and 6); the canisters and NUHOMS are periodically replaced in Scenarios 3, 4, 7 and 8. Spent fuel assemblies from TN-40 casks that are replaced will be put into NUHOMS DSCs. Canisters that are unloaded in the spent fuel transfer operation will be surveyed for neutron activation.
- 4) As an allowance, some of these canisters and NUHOMS modules from the first off-load operation are assumed to be mildly neutron activated and therefore must be disposed of as radioactive waste.
- 5) For the 100 and 200 year dry fuel storage scenarios (Scenarios 3, 4, 7 and 8) the canisters and casks will be replaced on a 50 year schedule using a dry transfer facility.

This analysis assumes that the existing ISFSI is modified at the cessation of plant operations to accommodate the fuel present in the storage pool at shutdown.

The DOE's repository program assumes that spent fuel will be accepted for disposal from the nation's commercial nuclear plants in the order (the "queue") in which it was removed from service ("oldest fuel first"). [34] Repository operations were based upon annual industry-wide receipt of

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400 Metric Tons Heavy Metal (MTHM) in the first year of operation, a total of 3,800 MTHM in years 2 through 4 and 3,000 MTHM for year 5 and beyond. This logic supports the spent fuel schedules for Scenarios 1 and 5. All other spent fuel scenarios are consistent with those identified by the Minnesota PSC.

Operation and maintenance costs for the spent fuel pool and ISFSI are included within the estimates and address the costs for staffing the facility, as well as security, insurance, and licensing fees. The estimates also include the costs to purchase, load, and transfer the NUHOMs DSCs from the pool to the ISFSI. Costs are also provided for the final disposition of the ISFSI once the transfer of the TN-40s and DSCs from the ISFSI to the DOE is complete.

# Storage Canister Design

The design and capacity of the ISFSI is based upon the Monticello Transnuclear NUHOMS system (with a 61-fuel assembly capacity). The system consists of a multi-purpose (storage and transport) dry shielded storage canister (DSC) and a horizontal storage module (HSM). The PWR equivalent for a NUHOMS system of 32 assemblies is assumed for this estimate. The existing TN-40 casks will remain in the ISFSI until they are either shipped to the DOE, or emptied and disposed of during recasking.

# Canister Loading and Transfer

The estimates include an average cost of \$626,000 for the labor to load/transport the spent fuel from the pool to the ISFSI pad. For estimating purposes an allowance of \$361,000 is used for the cost to transfer each fuel canister from the ISFSI pad to the DOE transport vehicle.

#### Operations and Maintenance

An annual cost (excluding labor) of approximately \$845,000 and \$112,000 are used for operation and maintenance of the spent fuel pool and the ISFSI, respectively.

At shutdown, the spent fuel pool is expected to contain freshly discharged assemblies (from the most recent refueling cycles). Over the next four years the assemblies are packaged into DSCs for transfer to the ISFSI for transfer to the DOE. It is assumed that the four years

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provides the necessary cooling period for the final cores to meet the decay heat requirements for dry storage. Once the pool is emptied, the spent fuel storage and handling facilities are available for decommissioning.

# Replacement of DSCs during ISFSI fuel storage period

Scenarios 1, 2, 5, and 6 do not assume any replacement of the spent fuel storage DSCs (recasking).

The other four cost estimates, Scenarios 3, 4, 7 and 8, include costs to recask the spent fuel, based upon an assumption that the DSC has a limited lifetime of approximately 50 years.

Scenarios 3 and 7, which are 100 years (nominally) in length, considers two repackaging efforts for each DSC in the ISFSI.

Scenario 4 and 8, which are a (nominal) 200-year scenario, assumes that when any DSC in the ISFSI reaches the 50 years of storage milestone, the DSC is replaced. The fuel will be recasked four times following final shutdown of Prairie Island.

Since the auxiliary building, spent fuel storage pool, and fuel handling facilities are removed by the year 2037, a dry fuel transfer facility is assumed to be constructed on site to perform the transfers from the old to the new DSCs. Scenarios 3, 4, 7 and 8 include the cost to construct such a transfer facility, as well as additional staffing positions for support of the dry transfer activities, and additional NRC oversight associated with the transfer operations. The decommissioning of this transfer facility is also included in these scenarios.

#### ISFSI Decommissioning

In accordance with 10 CFR §72.30, licensees must have a proposed decommissioning plan for the ISFSI site and facilities that includes a cost estimate for the plan. The plan should contain sufficient information on the proposed practices and procedures for the decontamination of the ISFSI and for the disposal of residual radioactive materials after all spent fuel, high-level radioactive waste, and reactor-related GTCC waste have been removed.

The NUHOMS multi-purpose dry shielded storage canister with a horizontal, reinforced concrete storage module is used as a basis for the

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ISFSI decommissioning cost analyses. The modules are assumed to have some level of neutron-induced activation, as a result of the long-term storage of the fuel, i.e., to levels exceeding free-release limits. As an allowance, 8 modules are assumed to require remediation, equivalent to the number of modules required to accommodate the final core offloads at Prairie Island (121 assemblies per unit). The cost of the disposition of this material, as well as the demolition of the ISFSI facility, is included in the estimates.

The existing ISFSI pad, supporting the TN-40 casks, is not expected to be contaminated and will be demolished accordingly after a confirmation survey.

In accordance with the specific requirements of 10 CFR §72.30 for the ISFSI work scope, the cost estimate for decommissioning the ISFSI reflects: 1) the cost of an independent contractor performing the decommissioning activities; 2) an adequate contingency factor; and 3) the cost of meeting the criteria for unrestricted use. The cost summary for decommissioning the ISFSI is presented in Appendix K. It contains four different scenarios reflecting the different number of casks present at the end of the ISFSI operations. The demolition of the ISFSI for all eight scenarios is reflected within the estimates.

### GTCC

The dismantling of the reactor internals is expected to generate radioactive waste considered unsuitable for shallow land disposal (i.e., low-level radioactive waste with concentrations of radionuclides that exceed the limits established by the NRC for Class C radioactive waste (GTCC)). The Low-Level Radioactive Waste Policy Amendments Act of 1985 assigned the federal government the responsibility for the disposal of this material. The Act also stated that the beneficiaries of the activities resulting in the generation of such radioactive waste bear all reasonable costs of disposing of such waste. [36]

Although the material is not classified as high-level waste, federal regulations under the Act designate that disposal of this material is a federal responsibility under Section 3(b)(1)(D). However, the DOE has not been forthcoming with an acceptance criteria or disposition schedule for this material, and numerous questions remain as to the ultimate disposal cost and waste form requirements.

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As such, for purposes of this study, the GTCC has been packaged and disposed of in the same manner as high-level waste, at a cost equivalent to that envisioned for the spent fuel. The number of DSCs required and the packaged volume for GTCC was based upon experience at Maine Yankee (e.g., the constraints on loading as identified in the canister's certificate of compliance), but adjusted for the increased spent fuel capacity of the current DSCs.

It is assumed that the DOE would not accept this waste prior to completing the transfer of spent fuel. Therefore, until such time the DOE is ready to accept GTCC waste, it is reasonable to assume that this material would remain in storage at Prairie Island (for the four DECON scenarios (1 through 4) and the SAFSTOR scenarios 7 and 8. alternatives). In SAFSTOR scenarios 5 and 6, the GTCC material is shipped directly to a DOE facility as it is generated since the fuel will have been removed from the site prior to the completion of delayed dismantling. GTCC costs have been segregated and included within the "License Termination" expenditures.

### 3.5.2 Reactor Vessel and Internal Components

The reactor pressure vessel and internal components are segmented for disposal in shielded, reusable transportation casks. Segmentation is performed underwater in the refueling canal, where a turntable and remote cutter are installed. The vessels are segmented in place, using a mast-mounted cutter supported off the lower head and directed from a shielded work platform installed overhead in the reactor cavity. Transportation cask specifications and transportation regulations dictate the segmentation and packaging methodology. The control elements are disposed of along with the spent fuel; there is no additional cost provided for their disposal.

Intact disposal of reactor vessel shells has been successfully demonstrated at several of the sites that have been decommissioned. Access to navigable waterways has allowed these large packages to be transported to the Barnwell disposal site with minimal overland travel. Intact disposal of the reactor vessel and internal components can provide savings in cost and worker exposure by eliminating the complex segmentation requirements, isolation of the GTCC material, and transport/storage of the resulting waste packages. Portland General Electric (PGE) was able to dispose of the Trojan reactor as an intact package (including the internals). However, its location on the Columbia River simplified the transportation analysis since:

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- the reactor package could be secured to the transport vehicle for the entire journey, i.e., the package was not lifted during transport,
- there were no man-made or natural terrain features between the plant site and the disposal location that could produce a large drop, and
- transport speeds were very low, limited by the overland transport vehicle and the river barge.

As a member of the Northwest Compact, PGE had a site available for disposal of the package - the US Ecology facility in Washington State. The characteristics of this arid site proved favorable in demonstrating compliance with land disposal regulations.

It is not known whether this option will be available when Prairie Island ceases operation. Future viability of this option will depend upon the ultimate location of the disposal site, as well as the disposal site licensee's ability to accept highly radioactive packages and effectively isolate them from the environment. As such, the estimates assume segmentation of the reactor vessel, as a bounding condition. With lower levels of activation, the vessel shell can be packaged more efficiently than the curie-limited internal components. This will allow the use of more conventional waste packages rather than shielded casks for transport.

#### 3.5.3 Primary System Components

In the DECON scenarios, the reactor coolant system components are assumed to be decontaminated using chemical agents prior to the start of cutting operations. This type of decontamination can be expected to have a significant ALARA impact in the DECON scenarios, since the removal work is done within the first few years of shutdown. A decontamination factor (average reduction) of 10 is assumed for the process. Disposal of the decontamination solution effluent is included within the estimate as a "process liquid waste" charge. The SAFSTOR scenarios do not include any decontamination of the reactor system; radioactive decay from the delay period in the dormancy results in similar results.

The following discussion deals with the removal and disposition of the steam generators, but the techniques involved are also applicable to other large radioactively-contaminated components, such as heat

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exchangers, component coolers, and the pressurizer. The steam generators' size and weight, their location within the reactor building, as well as the disposal facility waste acceptance criteria, and access to transportation will ultimately determine the removal, transportation, and disposal strategy.

A trolley crane is set up for the removal of the generators. It can also be used to move portions of the steam generator cubicle walls and floor slabs from the reactor building to a location where they can be decontaminated and transported to the material handling area. Interferences within the work area, such as grating, piping, and other components are removed to create sufficient lay-down space for processing these large components.

The generators are rigged for removal, disconnected from the surrounding piping and supports, and maneuvered into the open area where they are lowered onto a down-ending cradle. Each generator is rotated into the horizontal position for extraction from the containment and placed onto a multi-wheeled vehicle for transport to an on-site preparation area.

Disposal costs are based upon the displaced volume and weight of the primary side portions of the steam generators. Each component is then loaded onto a rail car for transport to the disposal facility. The secondary side is assumed to be sent to an off-site waste processor.

Reactor coolant piping is cut from the reactor vessel once the water level in the vessel (used for personnel shielding during dismantling and cutting operations in and around the vessel) is dropped below the nozzle zone. The piping is boxed and transported by shielded van. The reactor coolant pumps and motors are lifted out intact, packaged, and transported for processing and/or disposal.

# 3.5.4 Main Turbine and Condenser

The main turbine and condenser are assumed to have only minor levels of contamination. As such, the components are dismantled using conventional maintenance procedures. The turbine rotors and shafts will be removed to a laydown area. The lower turbine casings will be removed from their anchors by controlled demolition. The main condensers will also be disassembled and moved to a laydown area. Material is then prepared for transportation to an off-site recycling facility where it will be surveyed and designated for either

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decontamination or volume reduction, or controlled disposal. Components will be packaged and readied for transport in accordance with the intended disposition.

#### 3.5.5 Transportation Methods

Contaminated piping, components, and structural material other than the highly activated reactor vessels and internal components will qualify as LSA-I, II or III or Surface Contaminated Object, SCO-I or II, as described in Title 49. [37] The contaminated material will be packaged in Industrial Packages (IP-1, IP-2, or IP-3, as defined in subpart 10 CFR 173.411) for transport unless demonstrated to qualify as their own shipping containers. The reactor vessel and internal components are expected to be transported in accordance with 10 CFR Part 71, as Type B. It is conceivable that the reactor, due to its limited specific activity, could qualify as LSA II or III. However, the high radiation levels on the outer surface would require that additional shielding be incorporated within the packaging so as to attenuate the dose to levels acceptable for transport.

Any fuel cladding failure that occurred during the lifetime of the plant is assumed to have released fission products at sufficiently low levels that the buildup of quantities of long-lived isotopes (e.g., <sup>137</sup>Cs, <sup>90</sup>Sr, or transuranics) has been prevented from reaching levels exceeding those that permit the major reactor components to be shipped under current transportation regulations and disposal requirements.

Transport of the highly activated metal, produced in the segmentation of the reactor vessel and internal components, will be by shielded truck cask. Cask shipments may exceed 95,000 pounds, including vessel segment(s), supplementary shielding, cask tie-downs, and tractor-trailer. The maximum level of activity per shipment assumed permissible was based upon the license limits of the available shielded transport casks. The segmentation scheme for the vessel and internal segments is designed to meet these limits.

The transport of large intact components (e.g., large heat exchangers and other oversized components) will be by a combination of truck, rail, and/or multi-wheeled transporter. Transportation costs for Class A radioactive material requiring controlled disposal are based upon the mileage to the EnergySolutions facility in Clive, Utah. Transportation costs for the higher activity Class B and C radioactive material are based upon the mileage to the WCS facility in Andrews County, Texas.

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The transportation cost for the GTCC material is assumed to be contained within the disposal cost. Transportation costs for off-site waste processing are based upon the mileage to Oak Ridge, Tennessee. Truck transport costs were estimated using published tariffs from Tri-State Motor Transit. [38]

#### 3.5.6 Low-Level Radioactive Waste Disposal

To the greatest extent practical, metallic material generated in the decontamination and dismantling processes is processed to reduce the total cost of controlled disposal. Material meeting the regulatory and/or site release criterion, is released as scrap, requiring no further cost consideration. Conditioning (preparing the material to meet the waste acceptance criteria of the disposal site) and recovery of the waste stream is performed off site at a licensed processing center. Any material leaving the site is subject to a survey and release charge, at a minimum.

The mass of radioactive waste generated during the various decommissioning activities at the site is shown on a line-item basis in the detailed Appendices C through J, and summarized in Section 5. The quantified waste summaries shown in these tables are consistent with 10 CFR Part 61 classifications. Commercially available steel containers are presumed to be used for the disposal of piping, small components, and concrete. Larger components can serve as their own containers, with proper closure of all openings, access ways, and penetrations. The volumes are calculated based on the exterior package dimensions for containerized material or a specific calculation for components serving as their own waste containers.

The more highly activated reactor components will be shipped in reusable, shielded truck casks with disposable liners. In calculating disposal costs, the burial fees are applied against the liner volume and weight, with surcharges added for the special handling requirements and the radiological characteristics of the payload. Packaging efficiencies are lower for the highly activated materials (greater than Type A quantity waste), where high concentrations of gamma-emitting radionuclides limit the capacity of the shipping canisters.

The cost to dispose of the lowest level and majority of the material generated from the decontamination and dismantling activities is based upon representative costs for disposal at EnergySolutions facility in Clive, Utah. Disposal costs for the higher activity waste (Class B and C)

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were based upon preliminary and indicative information from WCS for the Andrews County facility.

Material exceeding Class C limits (limited to material closest to the reactor core and comprising less than 1% of the total waste volume) is generally not suitable for shallow-land disposal. This material is packaged in the same multipurpose canisters used for spent fuel storage/transport, for eventual transfer to the DOE for disposal.

# 3.5.7 Site Conditions Following Decommissioning

The NRC will amend or terminate each unit's license if it determines that site remediation has been performed in accordance with the license termination plan, and that the terminal radiation survey and associated documentation demonstrate that the facility is suitable for release. The NRC's involvement in the decommissioning process will end at this point. Building codes and environmental regulations will dictate the next step in the decommissioning process, as well as Xcel Energy's own future plans for the site, e.g., the electrical switchyard will remain in support of the regional transmission and distribution system.

Asphalt surfaces in the immediate vicinity of site buildings are broken up and the material disposed of as construction debris. The site access road will remain.

Only existing site structures are considered in the dismantling cost. All subgrade structures are removed. The voids are backfilled with clean debris and capped with soil. The site is then re-graded to conform to the adjacent landscape. Vegetation is established to inhibit erosion. These "non-radiological costs" are included in the total cost of decommissioning.

Bulk excavation of soil and material in the immediate vicinity of the power block is included to remove various duct banks, catch basins, and underground utilities that may exist.

The estimates do not assume the remediation of any significant volume of contaminated soil. This assumption may be affected by continued plant operations and/or future regulatory actions, such as the development of site-specific release criteria.

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#### 3.6 ASSUMPTIONS

The following are the major assumptions made in the development of the estimates for decommissioning the site.

# 3.6.1 Estimating Basis

Decommissioning costs are reported in the year of projected expenditure; however, the values are provided in 2020 dollars. Costs are not inflated, escalated, or discounted over the periods of performance.

The estimates rely upon the physical plant inventory that was the basis for the 2017 analysis (updated to reflect any material changes to the plant over the past three years).

The study follows the principles of ALARA through the use of work duration adjustment factors. These factors address the impact of activities such as radiological protection instruction, mock-up training, and the use of respiratory protection and protective clothing. The factors lengthen a task's duration, increasing costs and lengthening the overall schedule. ALARA planning is considered in the costs for engineering and planning, and in the development of activity specifications and detailed procedures. Changes to worker exposure limits may impact the decommissioning cost and project schedule.

### 3.6.2 Labor Costs

For purposes of this analysis, it is assumed that Xcel Energy will hire a Decommissioning Operations Contractor (DOC) to manage the decommissioning. Xcel Energy will provide site security, radiological health and safety, quality assurance and overall site administration during the decommissioning and demolition phases. Contract personnel will provide engineering services (e.g., for preparing the activity specifications, work procedures, neutron activation, and structural analyses) under the direction of Xcel Energy.

Utility labor costs were provided by Xcel Energy. Average costs were provided by department or work group and included payroll overheads. Decommissioning Operations Contractor (DOC) labor costs were based on utility labor costs with modified markups to account for employee benefits, DOC overhead and profit.

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The craft labor required to decontaminate and dismantle the nuclear station will be acquired through standard site contracting practices. Craft labor costs were based upon information from Xcel Energy. Craft labor costs include applicable overheads and profit.

Security levels are assumed to be maintained at "operating levels" for approximately 18 months after operations ceases. Additional reductions in force size are assumed when the pool is empty and with the completion of the decommissioning and site restoration activities.

Staffing levels are assigned by sub-period and functional area. Economies of a multi-unit decommissioning are recognized by establishing a primary and a secondary staff level. The unit assigned the primary staff will include common supervisory positions and positions that may be shared across both units. The types of positions and staffing levels are adjusted based upon the type of activity occurring in each sub-period.

Representative profiles of the staffing level for decommissioning, including contractors and craft, is provided in Figures 3.1 and 3.2 for the DECON (Scenario 2) and SAFSTOR (Scenario 6) estimates. Utility staffing levels will gradually decrease after completing the removal of physical systems. Staffing levels and management support will vary based upon the amount and type of decommissioning work. Craft manpower levels decrease after systems removal and structures decontamination and drop substantially during the delay period and the license termination survey period. However, craft levels increase again during the site restoration period due to the work associated with structures demolition. During SAFSTOR dormancy, following transfer of the spent fuel to the ISFSI, staffing levels for the power block are reduced to a minimum, then rise as the delayed dismantling operations begin.

Security, while reduced from operating levels, is maintained throughout the decommissioning for access control, material control, and to safeguard the spent fuel (in accordance with the requirements of 10 CFR Part 37, Part 72, and Part 73). Once the fuel has been transferred to the DOE in scenarios 5 and 6, the security organization will be reduced to Part 37 requirements.

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# 3.6.3 Design Conditions

Any fuel cladding failure that occurred during the lifetime of the plant is assumed to have released fission products at sufficiently low levels that the buildup of quantities of long-lived isotopes (e.g., <sup>137</sup>Cs, <sup>90</sup>Sr, or transuranics) has been prevented from reaching levels exceeding those that permit the major NSSS components to be shipped under current transportation regulations and disposal requirements.

The curie contents of the vessels and internals at final shutdown are derived from those listed in NUREG/CR-3474.<sup>[39]</sup> Actual estimates are derived from the curie/gram values contained therein and adjusted for the different mass of the Prairie Island components, projected operating life, and different periods of decay. Additional short-lived isotopes were derived from NUREG/CR-0130<sup>[40]</sup> and NUREG/CR-0672, <sup>[41]</sup> and benchmarked to the long-lived values from NUREG/CR-3474.

It is anticipated that there will be control element assemblies (CEAs) in the spent fuel pool at the cessation of operations, including those CEAs from the final core. This analysis assumes that the CEAs can be disposed of along with the spent fuel at no additional cost (in accordance with Appendix E of the Standard Contract [42]).

Neutron activation of the reactor building structure is confined to the reactor biological shield.

### 3.6.4 General

#### Transition Activities

Existing warehouses will be cleared of non-essential material and remain for use by Xcel Energy and subcontractors. The plant's operating staff will perform the following activities at no additional cost or credit to the project during the transition period:

- Drain and collect fuel oils, lubricating oils, and transformer oils for recycle and/or sale.
- Drain and collect acids, caustics, and other chemical stores for recycle and/or sale.
- Processes operating waste inventories, i.e., the estimates do not address the disposition of any legacy wastes; the disposal of

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operating wastes during this initial period is not considered a decommissioning expense.

## Scrap and Salvage

The existing plant equipment is considered obsolete and suitable for scrap as deadweight quantities only. Xcel Energy will make economically reasonable efforts to salvage equipment following final plant shutdown. However, dismantling techniques assumed by TLG for equipment in this analysis are not consistent with removal techniques required for salvage (resale) of equipment. Experience has indicated that some buyers wanted equipment stripped down to very specific requirements before they would consider purchase. This required expensive rework after the equipment had been removed from its installed location. Since placing a salvage value on this machinery and equipment would be speculative, and the value would be small in comparison to the overall decommissioning expenses, this analysis does not attempt to quantify the possible salvage value that Xcel Energy may realize based upon those efforts.

It is assumed, for purposes of this analysis, that any value received from the sale of scrap generated in the dismantling process would be offset by the on-site processing costs. The dismantling techniques assumed in the decommissioning estimates do not include the additional cost for size reduction and preparation to meet "furnace ready" conditions. For example, the recovery of copper from electrical cabling may require the removal and disposition of any contaminated insulation, an added expense. With a volatile market, the potential profit margin in scrap recovery is highly speculative, regardless of the ability to free release this material. This assumption is an implicit recognition of scrap value in the disposal of clean metallic waste at no additional cost to the project.

Furniture, tools, mobile equipment such as forklifts, trucks, bulldozers, and other property will be removed at no cost or credit to the decommissioning project. Disposition may include relocation to other facilities. Spare parts will also be made available for alternative use.

The concrete debris resulting from building demolition activities is crushed on site to reduce the size of the debris. The resulting crushed concrete is disposed offsite as construction debris. The rebar removed from the concrete crushing process is disposed of as scrap steel in a similar fashion as other scrap metal as discussed previously.

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#### Asbestos

At the time of Prairie Island's construction, asbestos was still being used for system component and piping insulation, and as fireproofing material for structures. No inventory of asbestos at Prairie Island was available, so TLG developed an estimated quantity. The allowance for the remediation of this asbestos is captured in the detailed cost analyses (Appendices C through J).

#### Energy

For estimating purposes, the plant is assumed to be de-energized, except for those facilities associated with spent fuel storage. Replacement power costs are used for the cost of energy consumption during decommissioning for tooling, lighting, ventilation, and essential services.

### **Emergency Planning**

FEMA and state fees associated with emergency planning are assumed to continue for approximately 18 months following the cessation of operations. At this time, the FEMA fees are discontinued. The timing is based upon the anticipated condition of the spent fuel (i.e., the hottest spent fuel assemblies are assumed to be cool enough that no substantial Zircaloy oxidation and off-site event would occur with the loss of spent fuel pool water). State and local fees are continued until all spent fuel is transferred out of the spent fuel pool.

#### Insurance

Costs for continuing coverage (nuclear liability and property insurance) following cessation of plant operations and during decommissioning are included and based upon current operating premiums. Reductions in premiums, throughout the decommissioning process, are based upon the guidance provided in SECY-00-0145, "Integrated Rulemaking Plan for Nuclear Power Plant Decommissioning." The NRC's financial protection requirements are based on various reactor (and spent fuel) configurations.

# Site Non-Labor Overhead

These estimates include costs for site non-labor overhead charges. These costs include telephones, copy machines, computers, IT infrastructure, office supplies, janitorial supplies, training expenses, etc. Xcel Energy

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provided a two-part cost to address these costs. A variable charge of \$5,648 per person per year of the Xcel Energy staff is included throughout the estimate. A fixed annual overhead charge is also included, starting at \$1.5 million per reactor at the time of unit shut down and decreasing at various intervals to approximately \$163 thousand per reactor.

#### Severance Program

Severance for personnel retained for the decommissioning organization is included in this estimate.

#### **Taxes**

Property taxes are included for all decommissioning periods. Xcel Energy provided a schedule of decreasing tax payments against the current tax assessment. These payments are maintained for the balance of the decommissioning program.

### **NRC Fees**

These estimates include charges from the NRC to support the Prairie Island decommissioning program. Charges are included for the yearly license held by Xcel Energy for the Part 50 licenses, as well as engineering support charges by the NRC to review activities at the site. The Part 50 license fee for a reactor in a decommissioning or possession-only status and which has spent fuel onsite is \$188 thousand per year. Once the reactors have been decommissioned, the site Part 50 license continues at the same fee until final removal of the spent fuel. The hourly rate for NRC review is \$279.00. The level of effort of NRC participation is commensurate with the decommissioning alternative and schedule.

# Disposal of Processed Water

This estimate assumes that processed water which meets state and federal release limits can be disposed of without additional cost.

### Site Modifications

The perimeter fence and in-plant security barriers will be moved, as appropriate, to conform to the Site Security Plan in force during the various stages of the project.

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# Prairie Island Indian Community Payments

This estimate includes a \$2.5 million annual payment to the Prairie Island Indian Community while spent fuel is still on the Prairie Island site.

#### Minnesota state regulations regarding concrete

This estimate complies with the Minnesota state regulations regarding the removal of all subterranean concrete during demolition, plus the survey and confirmation of the suitability of the clean fill used for backfill of the subgrade structures following concrete removal.

#### 3.7 COST ESTIMATE SUMMARY

The estimates presented in this document reflects the total cost to decontaminate the nuclear units, manage the spent fuel until the DOE is able to complete the transfer to a federal facility, dismantle the plant and restore the site for alternative use.

Schedules of expenditures are provided in Tables 3.1 through 3.16. The tables delineate the cost contributors by year of expenditures as well as cost contributor (e.g., labor, materials, and waste disposal).

Additional tables in Appendices C through J provide detailed costs elements. The cost elements are also assigned to one of three subcategories: "License Termination," "Spent Fuel Management," and "Site Restoration." The subcategory "License Termination" is used to accumulate costs that are consistent with "decommissioning" as defined by the NRC in its financial assurance regulations (i.e., 10 CFR §50.75). In situations where the long-term management of spent fuel is not an issue, the cost reported for this subcategory is generally sufficient to terminate each unit's operating license, recognizing that there may be some additional cost impact from spent fuel management.

The "Spent Fuel Management" subcategory contains costs associated with the containerization and transfer of spent fuel from the pool to the ISFSI for interim storage, and the transfer of the multipurpose canisters from the ISFSI to the DOE. Costs are also included for the operations of the pool and management of the ISFSI until such time that the transfer of all fuel from this facility to an off-site location (e.g., interim storage facility) is complete.

"Site Restoration" is used to capture costs associated with the dismantling and demolition of buildings and facilities demonstrated to be free from

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contamination. This includes structures never exposed to radioactive materials, as well as those facilities that have been decontaminated to appropriate levels. Structures are completely removed, including foundations and basemats and backfilled to conform to local grade.

As discussed in Section 3.5.1, it is assumed that the DOE will not accept the GTCC waste prior to completing the transfer of spent fuel. Therefore, the cost of GTCC disposal is shown in the final year of ISFSI operation (for the DECON alternative). While designated for disposal at a federal facility along with the spent fuel, GTCC waste is still classified as low-level radioactive waste and, as such, included as a "License Termination" expense.

Decommissioning costs are reported in 2020 dollars. Costs are not inflated, escalated, or discounted over the period of expenditure (or projected lifetime of the plant).

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# TABLE 3.1 SCENARIO 1: DECON WITH 42 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

Year	E Labor	quipment & Materials	Energy	Burial	Other	Total
2033	23,782	923	741	25	10,292	35,762
2034	67,414	9,626	2,605	5,533	21,280	106,458
2035	68,591	29,172	1,970	24,644	23,300	147,677
2036	64,154	24,188	1,598	31,001	24,350	145,292
2037	45,558	25,073	1,398	22,010	19,293	113,333
2038	25,712	31,391	1,284	1,217	11,074	70,678
2039	34,084	5,035	599	4,110	6,754	50,583
2040	20,889	6,593	253	16	4,536	32,287
2041	15,747	9,087	186	0	4,139	29,160
2042	9,317	4,776	88	0	3,765	17,945
2043	3,430	467	0	0	3,431	7,328
2044	3,387	311	0	0	3,440	7,139
2045	3,482	623	0	0	3,431	7,536
2046	3,482	623	0	0	3,431	7,536
2047	3,430	467	0	0	3,431	7,328
2048	3,491	623	0	0	3,440	7,554
2049	3,482	623	0	0	3,431	7,536
2050	3,430	467	0	0	3,431	7,328
2051	3,482	623	0	0	3,431	7,536
2052	3,439	467	0	0	3,440	7,346
2053	3,378	311	0	0	3,431	7,120
2054	3,378	311	0	0	3,431	7,120
2055	3,378	311	0	0	3,431	7,120
2056	3,284	0	0	0	3,440	6,724
2057	3,275	0	0	0	3,431	6,705
2058	3,275	0	0	0	3,431	6,705
2059	3,275	0	0	0	3,431	6,705
2060	3,387	311	0	0	3,440	7,139
2061	3,378	311	0	0	3,431	7,120
2062	3,378	311	0	0	3,431	7,120

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# TABLE 3.1 (continued) SCENARIO 1: DECON WITH 42 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

	$\mathbf{E}$	quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2063	3,378	311	0	0	3,431	7,120
2064	3,387	311	0	0	3,440	7,139
2065	3,378	311	0	0	3,431	7,120
2066	3,378	311	0	0	3,431	7,120
2067	3,378	311	0	0	3,431	7,120
2068	3,387	311	0	0	3,440	7,139
2069	3,378	311	0	0	3,431	7,120
2070	3,378	311	0	0	3,431	7,120
2071	3,378	311	0	0	3,431	7,120
2072	3,387	311	0	0	3,440	7,139
2073	3,378	311	0	0	3,431	7,120
2074	3,378	2,116	0	0	13,408	18,902
2075	886	554	20	3,165	1,924	6,549
Total	484,624	159,120	10,742	91,722	250,544	996,753

Note: Columns may not add due to rounding

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# TABLE 3.2 SCENARIO 1: DECON WITH 42 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

Equipment &						
Year	Labor	Materials	Energy	Burial	Other	Total
0004	0.040	200	997	10	¥ 90F	14550
2034	8,346	600	327	10	5,287	14,570
2035	49,894	6,051	2,191	2,472	28,487	89,096
2036	67,057	30,095	2,409	22,189	20,301	142,050
2037	75,292	40,738	1,676	30,330	20,209	168,245
2038	82,522	47,557	1,284	36,708	18,369	186,439
2039	39,423	5,799	599	5,008	6,511	57,340
2040	25,047	10,813	253	16	5,209	41,339
2041	18,516	15,396	186	0	5,303	39,401
2042	10,621	7,749	88	0	4,313	22,771
2043	3,430	467	0	0	3,431	7,328
2044	3,387	311	0	0	3,440	7,139
2045	3,482	623	0	0	3,431	7,536
2046	3,482	623	0	0	3,431	7,536
2047	3,430	467	0	0	3,431	7,328
2048	3,491	623	0	0	3,440	7,554
2049	3,482	623	0	0	3,431	7,536
2050	3,430	467	0	0	3,431	7,328
2051	3,482	623	0	0	3,431	7,536
2052	3,439	467	0	0	3,440	7,346
2053	3,378	311	0	0	3,431	7,120
2054	3,378	311	0	0	3,431	7,120
2055	3,378	311	0	0	3,431	7,120
2056	3,284	0	0	0	3,440	6,724
2057	3,275	0	0	0	3,431	6,705
2058	3,275	0	0	0	3,431	6,705
2059	3,275	0	0	0	3,431	6,705
2060	3,387	311	0	0	3,440	7,139
2061	3,378	311	0	0	3,431	7,120
2062	3,378	311	0	0	3,431	7,120
2063	3,378	311	0	0	3,431	7,120

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# TABLE 3.2 (continued) SCENARIO 1: DECON WITH 42 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2064	3,387	311	0	0	3,440	7,139
2065	3,378	311	0	0	3,431	7,120
2066	3,378	311	0	0	3,431	7,120
2067	3,378	311	0	0	3,431	7,120
2068	3,387	311	0	0	3,440	7,139
2069	3,378	311	0	0	3,431	7,120
2070	3,378	311	0	0	3,431	7,120
2071	3,378	311	0	0	3,431	7,120
2072	3,387	311	0	0	3,440	7,139
2073	3,378	311	0	0	3,431	7,120
2074	3,378	2,116	0	0	13,408	18,902
2075	886	554	20	3,165	1,924	6,549
Total	486,095	178,053	9,033	99,899	235,749	1,008,829

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### TABLE 3.3 SCENARIO 2: DECON WITH 60 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2033	23,782	923	741	25	10,292	35,762
2034	67,414	9,626	2,605	5,533	21,280	106,458
$\frac{2034}{2035}$	68,591	29,172	1,970	24,644	23,300	147,677
$\frac{2035}{2036}$	64,127	24,105	1,598	31,001	24,350	145,182
$\frac{2030}{2037}$	45,510	24,105	1,398	22,010	19,293	113,140
	,				,	
2038	25,609	31,083	1,284	1,217	11,074	70,267
2039	33,735	3,985	599	4,110	6,754	49,183
2040	20,663	5,915	253	16	4,536	31,383
2041	15,525	8,421	186	0	4,139	28,272
2042	9,047	3,968	88	0	3,758	16,861
2043	3,275	0	0	0	3,418	6,692
2044	3,284	0	0	0	3,427	6,711
2045	3,275	0	0	0	3,418	6,692
2046	3,275	0	0	0	3,418	6,692
2047	3,275	0	0	0	3,418	6,692
2048	3,284	0	0	0	3,427	6,711
2049	3,275	0	0	0	3,418	6,692
2050	3,275	0	0	0	3,418	6,692
2051	3,275	0	0	0	3,418	6,692
2052	3,284	0	0	0	3,427	6,711
2053	3,378	311	0	0	3,418	7,107
2054	3,482	623	0	0	3,418	7,523
2055	3,482	623	0	0	3,418	7,523
2056	3,543	778	0	0	3,427	7,749
2057	3,430	467	0	0	3,418	7,315
2058	3,586	934	0	0	3,418	7,938
2059	3,430	467	0	0	3,418	7,315
2060	3,387	311	0	0	3,427	7,126
2061	3,482	623	0	0	3,418	7,523
2062	3,482	623	0	0	3,418	7,523

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# TABLE 3.3 (continued) SCENARIO 2: DECON WITH 60 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

37		quipment &	D	D : 1	0.1	m . 1			
Year	Labor	Materials	Energy	Burial	Other	Total			
2063	3,430	467	0	0	3,418	7,315			
2064	3,491	623	0	0	3,427	7,541			
2065	3,482	623	0	0	3,418	7,523			
2066	3,430	467	0	0	3,418	7,315			
2067	3,482	623	0	0	3,418	7,523			
2068	3,491	623	0	0	3,427	7,541			
2069	3,430	467	0	0	3,418	7,315			
2070	3,482	623	0	0	3,418	7,523			
2071	3,482	623	0	0	3,418	7,523			
2072	3,491	623	0	0	3,427	7,541			
2073	3,482	623	0	0	3,418	7,523			
2074	3,482	623	0	0	3,418	7,523			
2075	3,842	1,702	0	0	3,418	8,962			
2076	3,491	623	0	0	3,427	7,541			
2077	3,482	2,428	0	0	13,395	19,305			
2078	886	554	20	3,165	1,924	6,549			
Total	494,817	160,199	10,742	91,722	260,384	1,017,865			

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### TABLE 3.4 SCENARIO 2: DECON WITH 60 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2034	8,346	600	327	10	5,287	14,570
2035	49,894	6,051	2,191	2,472	28,487	89,096
2036	67,020	29,984	2,409	22,189	20,301	141,903
2037	75,245	40,598	1,676	30,330	20,209	168,058
2038	82,427	47,271	1,284	36,708	18,369	186,059
2039	39,073	4,749	599	5,008	6,511	55,940
2040	24,821	10,135	253	16	5,209	40,435
2040	18,294	14,730	186	0	5,303	38,514
2041	10,352	6,941	88	0	4,306	21,688
2043	3,275	0,341	0	0	3,418	6,692
2044	3,284	0	0	0	3,427	6,711
2045	3,275	0	0	0	3,418	6,692
2046	3,275	0	0	0	3,418	6,692
2047	3,275	0	0	0	3,418	6,692
2048	3,284	0	0	0	3,427	6,711
2049	3,275	0	0	0	3,418	6,692
$\frac{2010}{2050}$	3,275	0	0	0	3,418	6,692
2051	3,275	0	0	0	3,418	6,692
2052	3,284	0	0	0	3,427	6,711
2053	3,378	311	0	0	3,418	7,107
2054	3,482	623	0	0	3,418	7,523
2055	3,482	623	0	0	3,418	7,523
2056	3,543	778	0	0	3,427	7,749
2057	3,430	467	0	0	3,418	7,315
2058	3,586	934	0	0	3,418	7,938
2059	3,430	467	0	0	3,418	7,315
2060	3,387	311	0	0	3,427	7,126
2061	3,482	623	0	0	3,418	7,523
2062	3,482	623	0	0	3,418	7,523
2063	3,430	467	0	0	3,418	7,315

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# TABLE 3.4 (continued) SCENARIO 2: DECON WITH 60 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

Year	E Labor	quipment & Materials	Energy	Burial	Other	Total
			- 67			
2064	3,491	623	0	0	3,427	7,541
2065	3,482	623	0	0	3,418	7,523
2066	3,430	467	0	0	3,418	7,315
2067	3,482	623	0	0	3,418	7,523
2068	3,491	623	0	0	3,427	7,541
2069	3,430	467	0	0	3,418	7,315
2070	3,482	623	0	0	3,418	7,523
2071	3,482	623	0	0	3,418	7,523
2072	3,491	623	0	0	3,427	7,541
2073	3,482	623	0	0	3,418	7,523
2074	3,482	623	0	0	3,418	7,523
2075	3,842	1,702	0	0	3,418	8,962
2076	3,491	623	0	0	3,427	7,541
2077	3,482	2,428	0	0	13,395	19,305
2078	886	554	20	3,165	1,924	6,549
Total	496,288	179,133	9,033	99,899	245,588	1,029,941

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### TABLE 3.5 SCENARIO 3: DECON WITH 100 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

Year	E Labor	quipment & Materials	Energy	Burial	Other	Total
2033	23,782	923	741	25	10,292	35,762
2034	67,414	9,626	2,605	5,533	21,280	106,458
2035	68,591	29,172	1,970	24,644	23,300	147,677
2036	64,616	25,575	1,598	31,001	24,350	147,141
2037	46,367	27,499	1,398	22,010	19,293	116,568
2038	26,103	32,563	1,284	1,217	11,074	72,241
2039	33,735	3,985	599	4,110	6,754	49,183
2040	20,722	5,915	253	16	4,536	31,442
2041	15,615	8,421	186	0	4,139	28,362
2042	9,448	3,968	88	0	3,744	17,249
2043	3,952	0	0	0	3,392	7,344
2044	3,963	0	0	0	3,401	7,364
2045	5,466	4,542	0	0	3,392	13,400
2046	4,962	3,028	0	0	3,392	11,382
2047	4,962	3,028	0	0	3,392	11,382
2048	3,963	0	0	0	3,401	7,364
2049	4,962	3,028	0	0	3,392	11,382
2050	5,466	4,542	0	0	3,392	13,400
2051	5,412	4,378	0	0	3,392	13,181
2052	5,477	4,542	0	0	3,401	13,421
2053	3,952	0	0	0	3,392	7,344
2054	3,952	0	0	0	3,392	7,344
2055	5,466	4,542	0	0	3,392	13,400
2056	4,972	3,028	0	0	3,401	11,402
2057	4,962	3,028	0	0	3,392	11,382
2058	3,952	0	0	0	3,392	7,344
2059	4,907	2,864	0	0	3,392	11,162
2060	4,972	3,028	0	0	3,401	11,402
2061	4,962	3,028	0	0	3,392	11,382
2062	3,952	0	0	0	3,392	7,344

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### TABLE 3.5 (continued) SCENARIO 3: DECON WITH 100 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2063	6,980	9,085	0	0	3,392	19,457
2064	5,927	5,892	0	0	3,401	15,220
2065	4,962	3,028	0	0	3,392	11,382
2066	3,952	0	0	0	3,392	7,344
2067	3,952	0	0	0	3,392	7,344
2068	5,982	6,057	0	0	3,401	15,439
2069	5,466	4,542	0	0	3,392	13,400
2070	3,952	0	0	0	3,392	7,344
2071	3,952	0	0	0	3,392	7,344
2072	6,432	7,406	0	0	3,401	17,239
2073	3,952	0	0	0	3,392	7,344
2074	3,952	0	0	0	3,392	7,344
2075	6,836	8,650	0	0	3,392	18,877
2076	3,963	0	0	0	3,401	7,364
2077	3,952	0	0	0	3,392	7,344
2078	6,476	7,571	0	0	3,392	17,438
2079	3,952	0	0	0	3,392	7,344
2080	3,963	0	0	0	3,401	7,364
2081	3,952	0	0	0	3,392	7,344
2082	6,366	7,242	0	0	3,392	17,000
2083	3,952	0	0	0	3,392	7,344
2084	3,963	0	0	0	3,401	7,364
2085	3,952	0	0	0	3,392	7,344
2086	3,952	0	0	0	3,392	7,344
2087	3,952	0	0	0	3,392	7,344
2088	19,160	45,618	0	2,988	3,924	71,690
2089	3,952	0	0	0	3,392	7,344
2090	3,952	0	0	0	3,392	7,344
2091	3,952	0	0	0	3,392	7,344
2092	3,963	0	0	0	3,401	7,364

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### TABLE 3.5 (continued) SCENARIO 3: DECON WITH 100 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2093	4,056	311	0	0	3,392	7,759
2094	4,212	778	0	0	3,392	8,382
2094	5,730	5,335	0	0	3,392	14,457
2095	5,730	,	0	0	, ,	
		3,972		-	3,401	12,659
2097	5,120	3,504	0	0	3,392	12,017
2098	4,315	1,090	0	0	3,392	8,797
2099	5,120	3,504	0	0	3,392	12,017
2100	5,575	4,868	0	0	3,392	13,834
2101	5,730	5,335	0	0	3,392	14,457
2102	5,730	5,335	0	0	3,392	14,457
2103	4,108	467	0	0	3,392	7,967
2104	4,171	623	0	0	3,401	8,194
2105	5,679	5,179	0	0	3,392	14,249
2106	5,120	3,504	0	0	3,392	12,017
2107	5,172	3,660	0	0	3,392	12,224
2108	4,171	623	0	0	3,401	8,194
2109	5,120	3,504	0	0	3,392	12,017
2110	5,172	3,660	0	0	3,392	12,224
2111	5,172	3,660	0	0	3,392	12,224
2112	4,171	623	0	0	3,401	8,194
2113	7,197	9,735	0	0	3,392	20,324
2114	6,185	6,698	0	0	3,392	16,274
2115	5,532	4,739	0	0	3,392	13,663
2116	4,171	623	0	0	3,401	8,194
2117	4,134	2,428	0	0	13,370	19,932
2118	1,124	887	20	177	1,957	4,164
Total	751,975	383,995	10,742	91,722	395,765	1,634,199

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### TABLE 3.6 SCENARIO 3: DECON WITH 100 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2024	0.040	200	205	10	F 005	1 / ٢ = 0
2034	8,346	600	327	10	5,287	14,570
2035	49,894	6,051	2,191	2,472	28,487	89,096
2036	67,674	31,946	2,409	22,189	20,301	144,519
2037	76,073	43,082	1,676	30,330	20,209	171,370
2038	82,785	48,346	1,284	36,708	18,369	187,492
2039	39,073	4,749	599	5,008	6,511	55,940
2040	24,880	10,135	253	16	5,209	40,493
2041	18,384	14,730	186	0	5,303	38,604
2042	10,753	6,941	88	0	4,292	22,075
2043	3,952	0	0	0	3,392	7,344
2044	3,963	0	0	0	3,401	7,364
2045	5,466	4,542	0	0	3,392	13,400
2046	4,962	3,028	0	0	3,392	11,382
2047	4,962	3,028	0	0	3,392	11,382
2048	3,963	0	0	0	3,401	7,364
2049	4,962	3,028	0	0	3,392	11,382
2050	5,466	4,542	0	0	3,392	13,400
2051	5,412	4,378	0	0	3,392	13,181
2052	5,477	4,542	0	0	3,401	13,421
2053	3,952	0	0	0	3,392	7,344
2054	3,952	0	0	0	3,392	7,344
2055	5,466	4,542	0	0	3,392	13,400
2056	4,972	3,028	0	0	3,401	11,402
2057	4,962	3,028	0	0	3,392	11,382
2058	3,952	0	0	0	3,392	7,344
2059	4,907	2,864	0	0	3,392	11,162
2060	4,972	3,028	0	0	3,401	11,402
2061	4,962	3,028	0	0	3,392	11,382
2062	3,952	0	0	0	3,392	7,344
2063	6,980	9,085	0	0	3,392	19,457

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# TABLE 3.6 (continued) SCENARIO 3: DECON WITH 100 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

V		quipment &	E	Danial	Other	Takal
Year	Labor	Materials	Energy	Burial	Other	Total
2064	5,927	5,892	0	0	3,401	15,220
2065	4,962	3,028	0	0	3,392	11,382
2066	3,952	0	0	0	3,392	7,344
2067	3,952	0	0	0	3,392	7,344
2068	5,982	6,057	0	0	3,401	15,439
2069	5,466	4,542	0	0	3,392	13,400
2070	3,952	0	0	0	3,392	7,344
2071	3,952	0	0	0	3,392	7,344
2072	6,432	7,406	0	0	3,401	17,239
2073	3,952	0	0	0	3,392	7,344
2074	3,952	0	0	0	3,392	7,344
2075	6,836	8,650	0	0	3,392	18,877
2076	3,963	0	0	0	3,401	7,364
2077	3,952	0	0	0	3,392	7,344
2078	6,476	7,571	0	0	3,392	17,438
2079	3,952	0	0	0	3,392	7,344
2080	3,963	0	0	0	3,401	7,364
2081	3,952	0	0	0	3,392	7,344
2082	6,366	7,242	0	0	3,392	17,000
2083	3,952	0	0	0	3,392	7,344
2084	3,963	0	0	0	3,401	7,364
2085	3,952	0	0	0	3,392	7,344
2086	3,952	0	0	0	3,392	7,344
2087	3,952	0	0	0	3,392	7,344
2088	19,160	45,618	0	2,988	3,924	71,690
2089	3,952	0	0	0	3,392	7,344
2090	3,952	0	0	0	3,392	7,344
2091	3,952	0	0	0	3,392	7,344
2092	3,963	0	0	0	3,401	7,364
2093	4,056	311	0	0	3,392	7,759

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## TABLE 3.6 (continued) SCENARIO 3: DECON WITH 100 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

Year	E Labor	quipment & Materials	Energy	Burial	Other	Total
	120001	- Triateriais	Hillings	Dariar	- Culici	10001
2094	4,212	778	0	0	3,392	8,382
2095	5,730	5,335	0	0	3,392	14,457
2096	5,287	3,972	0	0	3,401	12,659
2097	5,120	3,504	0	0	3,392	12,017
2098	4,315	1,090	0	0	3,392	8,797
2099	5,120	3,504	0	0	3,392	12,017
2100	5,575	4,868	0	0	3,392	13,834
2101	5,730	5,335	0	0	3,392	14,457
2102	5,730	5,335	0	0	3,392	14,457
2103	4,108	467	0	0	3,392	7,967
2104	4,171	623	0	0	3,401	8,194
2105	5,679	5,179	0	0	3,392	14,249
2106	5,120	3,504	0	0	3,392	12,017
2107	5,172	3,660	0	0	3,392	12,224
2108	4,171	623	0	0	3,401	8,194
2109	5,120	3,504	0	0	3,392	12,017
2110	5,172	3,660	0	0	3,392	12,224
2111	5,172	3,660	0	0	3,392	12,224
2112	4,171	623	0	0	3,401	8,194
2113	7,197	9,735	0	0	3,392	20,324
2114	6,185	6,698	0	0	3,392	16,274
2115	5,532	4,739	0	0	3,392	13,663
2116	4,171	623	0	0	3,401	8,194
2117	4,134	2,428	0	0	13,370	19,932
2118	1,124	887	20	177	1,957	4,164
Total	753,446	402,928	9,033	99,898	380,970	1,646,275

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### TABLE 3.7 SCENARIO 4: DECON WITH 200 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

Year	E Labor	quipment & Materials	Energy	Burial	Other	Total
2033	23,782	923	741	25	10,292	35,762
2034	67,414	9,626	2,605	5,533	21,280	106,458
2035	68,591	29,172	1,970	24,644	23,300	147,677
2036	64,616	25,575	1,598	31,001	24,350	147,141
2037	46,367	27,499	1,398	22,010	19,293	116,568
2038	26,103	32,563	1,284	1,217	11,074	72,241
2039	33,735	3,985	599	4,110	6,754	49,183
2040	20,722	5,915	253	16	4,536	31,442
2041	15,615	8,421	186	0	4,139	28,362
2042	9,448	3,968	88	0	3,737	17,241
2043	3,952	0	0	0	3,378	7,330
2044	3,963	0	0	0	3,387	7,350
2045	5,466	4,542	0	0	3,378	13,386
2046	4,962	3,028	0	0	3,378	11,367
2047	4,962	3,028	0	0	3,378	11,367
2048	3,963	0	0	0	3,387	7,350
2049	4,962	3,028	0	0	3,378	11,367
2050	5,466	4,542	0	0	3,378	13,386
2051	5,412	4,378	0	0	3,378	13,167
2052	5,477	4,542	0	0	3,387	13,406
2053	3,952	0	0	0	3,378	7,330
2054	3,952	0	0	0	3,378	7,330
2055	5,466	4,542	0	0	3,378	13,386
2056	4,972	3,028	0	0	3,387	11,388
2057	4,962	3,028	0	0	3,378	11,367
2058	3,952	0	0	0	3,378	7,330
2059	4,907	2,864	0	0	3,378	11,148
2060	4,972	3,028	0	0	3,387	11,388
2061	4,962	3,028	0	0	3,378	11,367
2062	3,952	0	0	0	3,378	7,330

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# TABLE 3.7 (continued) SCENARIO 4: DECON WITH 200 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2063	6,980	9,085	0	0	3,378	19,443
2064	5,927	5,892	0	0	3,387	15,206
2065	4,962	3,028	0	0	3,378	11,367
2066	3,952	0	0	0	3,378	7,330
2067	3,952	0	0	0	3,378	7,330
2068	5,982	6,057	0	0	3,387	15,425
2069	5,466	4,542	0	0	3,378	13,386
2070	3,952	0	0	0	3,378	7,330
2071	3,952	0	0	0	3,378	7,330
2072	6,432	7,406	0	0	3,387	17,225
2073	3,952	0	0	0	3,378	7,330
2074	3,952	0	0	0	3,378	7,330
2075	6,836	8,650	0	0	3,378	18,863
2076	3,963	0	0	0	3,387	7,350
2077	3,952	0	0	0	3,378	7,330
2078	6,476	7,571	0	0	3,378	17,424
2079	3,952	0	0	0	3,378	7,330
2080	3,963	0	0	0	3,387	7,350
2081	3,952	0	0	0	3,378	7,330
2082	6,366	7,242	0	0	3,378	16,986
2083	3,952	0	0	0	3,378	7,330
2084	3,963	0	0	0	3,387	7,350
2085	3,952	0	0	0	3,378	7,330
2086	3,952	0	0	0	3,378	7,330
2087	3,952	0	0	0	3,378	7,330
2088	19,160	45,618	0	2,988	3,910	71,675
2089	3,952	0	0	0	3,378	7,330
2090	3,952	0	0	0	3,378	7,330
2091	3,952	0	0	0	3,378	7,330
2092	3,963	0	0	0	3,387	7,350

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# TABLE 3.7 (continued) SCENARIO 4: DECON WITH 200 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2093	3,952	0	0	0	3,378	7,330
2094	3,952	0	0	0	3,378	7,330
2095	5,471	4,556	0	0	3,378	13,405
2096	4,976	3,037	0	0	3,387	11,400
2097	4,965	3,037	0	0	3,378	11,380
2098	3,952	0	0	0	3,378	7,330
2099	4,965	3,037	0	0	3,378	11,380
2100	5,471	4,556	0	0	3,378	13,405
2101	5,471	4,556	0	0	3,378	13,405
2102	5,471	4,556	0	0	3,378	13,405
2103	3,952	0	0	0	3,378	7,330
2104	3,963	0	0	0	3,387	7,350
2105	5,471	4,556	0	0	3,378	13,405
2106	4,965	3,037	0	0	3,378	11,380
2107	4,965	3,037	0	0	3,378	11,380
2108	3,963	0	0	0	3,387	7,350
2109	4,965	3,037	0	0	3,378	11,380
2110	4,965	3,037	0	0	3,378	11,380
2111	4,965	3,037	0	0	3,378	11,380
2112	3,963	0	0	0	3,387	7,350
2113	6,990	9,112	0	0	3,378	19,480
2114	5,977	6,075	0	0	3,378	15,430
2115	5,324	4,117	0	0	3,378	12,819
2116	3,963	0	0	0	3,387	7,350
2117	3,952	0	0	0	3,378	7,330
2118	5,977	6,075	0	0	3,378	15,430
2119	5,471	4,556	0	0	3,378	13,405
2120	3,963	0	0	0	3,387	7,350
2121	3,952	0	0	0	3,378	7,330
2122	6,483	7,594	0	0	3,378	17,455

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### TABLE 3.7 (continued) SCENARIO 4: DECON WITH 200 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2123	3,952	0	0	0	3,378	7,330
2124	3,963	0	0	0	3,387	7,350
2125	6,483	7,594	0	0	3,378	17,455
2126	3,952	0	0	0	3,378	7,330
2127	3,952	0	0	0	3,378	7,330
2128	6,494	7,594	0	0	3,387	17,475
2129	3,952	0	0	0	3,378	7,330
2130	3,952	0	0	0	3,378	7,330
2131	3,952	0	0	0	3,378	7,330
2132	6,494	7,594	0	0	3,387	17,475
2133	3,952	0	0	0	3,378	7,330
2134	3,952	0	0	0	3,378	7,330
2135	3,952	0	0	0	3,378	7,330
2136	3,963	0	0	0	3,387	7,350
2137	3,952	0	0	0	3,378	7,330
2138	19,139	45,562	0	0	3,378	68,079
2139	3,952	0	0	0	3,378	7,330
2140	3,963	0	0	0	3,387	7,350
2141	3,952	0	0	0	3,378	7,330
2142	3,952	0	0	0	3,378	7,330
2143	3,952	0	0	0	3,378	7,330
2144	3,963	0	0	0	3,387	7,350
2145	5,471	4,556	0	0	3,378	13,405
2146	4,965	3,037	0	0	3,378	11,380
2147	4,965	3,037	0	0	3,378	11,380
2148	3,963	0	0	0	3,387	7,350
2149	4,965	3,037	0	0	3,378	11,380
2150	5,471	4,556	0	0	3,378	13,405
2151	5,471	4,556	0	0	3,378	13,405
2152	5,482	4,556	0	0	3,387	13,425

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# TABLE 3.7 (continued) SCENARIO 4: DECON WITH 200 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2153	3,952	0	0	0	3,378	7,330
2154	3,952	0	0	0	3,378	7,330
2155	5,831	5,635	0	0	3,378	14,844
2156	4,976	3,037	0	0	3,387	11,400
2157	4,965	3,037	0	0	3,378	11,380
2157	3,952	0	0	0	3,378	7,330
2159		3,037	0	0	3,378	11,380
$\frac{2139}{2160}$	4,965		0	0		
2161	4,976	3,037	0	0	3,387	11,400
	4,965	3,037	-		3,378	11,380
2162	3,952	0 110	0	0	3,378	7,330
2163	6,990	9,112	0	0	3,378	19,480
2164	5,988	6,075	0	0	3,387	15,450
2165	4,965	3,037	0	0	3,378	11,380
2166	3,952	0	0	0	3,378	7,330
2167	3,952	0	0	0	3,378	7,330
2168	5,988	6,075	0	0	3,387	15,450
2169	5,471	4,556	0	0	3,378	13,405
2170	3,952	0	0	0	3,378	7,330
2171	3,952	0	0	0	3,378	7,330
2172	6,494	7,594	0	0	3,387	17,475
2173	3,952	0	0	0	3,378	7,330
2174	3,952	0	0	0	3,378	7,330
2175	6,483	7,594	0	0	3,378	17,455
2176	3,963	0	0	0	3,387	7,350
2177	3,952	0	0	0	3,378	7,330
2178	6,483	7,594	0	0	3,378	17,455
2179	3,952	0	0	0	3,378	7,330
2180	3,963	0	0	0	3,387	7,350
2181	3,952	0	0	0	3,378	7,330
2182	6,483	7,594	0	0	3,378	17,455

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# TABLE 3.7 (continued) SCENARIO 4: DECON WITH 200 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

Year	E Labor	quipment & Materials	Energy	Burial	Other	Total
2183	3,952	0	0	0	3,378	7,330
2184	3,963	0	0	0	3,387	7,350
2185	3,952	0	0	0	3,378	7,330
2186	3,952	0	0	0	3,378	7,330
2187	3,952	0	0	0	3,378	7,330
2188	19,150	45,562	0	0	3,387	68,099
2189	3,952	0	0	0	3,378	7,330
2190	3,952	0	0	0	3,378	7,330
2191	3,952	0	0	0	3,378	7,330
2192	3,963	0	0	0	3,387	7,350
2193	4,056	311	0	0	3,378	7,745
2194	4,212	778	0	0	3,378	8,368
2195	6,090	6,414	0	0	3,378	15,881
2196	5,287	3,972	0	0	3,387	12,645
2197	5,120	3,504	0	0	3,378	12,002
2198	4,315	1,090	0	0	3,378	8,783
2199	5,120	3,504	0	0	3,378	12,002
2200	5,575	4,868	0	0	3,378	13,820
2201	5,730	5,335	0	0	3,378	14,443
2202	5,730	5,335	0	0	3,378	14,443
2203	4,108	467	0	0	3,378	7,952
2204	4,171	623	0	0	3,387	8,180
2205	5,679	5,179	0	0	3,378	14,235
2206	5,120	3,504	0	0	3,378	12,002
2207	5,172	3,660	0	0	3,378	12,210
2208	4,171	623	0	0	3,387	8,180
2209	5,120	3,504	0	0	3,378	12,002
2210	5,172	3,660	0	0	3,378	12,210
2211	5,172	3,660	0	0	3,378	12,210
2212	4,171	623	0	0	3,387	8,180
2213	7,197	9,735	0	0	3,378	20,310

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### TABLE 3.7 (continued) SCENARIO 4: DECON WITH 200 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

	$\mathbf{E}$	quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2214	6,185	6,698	0	0	3,378	16,260
2215	5,172	3,660	0	0	3,378	12,210
2216	4,171	623	0	0	3,387	8,180
2217	4,134	2,428	0	0	13,357	19,918
2218	1,124	887	20	177	1,957	4,164
Total	1,249,423	689,898	10,742	91,722	732,670	2,774,456

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### TABLE 3.8 SCENARIO 4: DECON WITH 200 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2034	8,346	600	327	10	5,287	14,570
2035	49,894	6,051	2,191	2,472	28,487	89,096
2036	67,674	31,946	2,409	22,189	20,301	144,519
2037	76,073	43,082	1,676	30,330	20,209	171,370
2038	82,785	48,346	1,284	36,708	18,369	187,492
2039	39,073	4,749	599	5,008	6,511	55,940
2040	24,880	10,135	253	16	5,209	40,493
2040	18,384	14,730	186	0	5,303	38,604
2041	10,753	6,941	88	0	4,285	22,067
2042	3,952	0,941	0	0	3,378	7,330
2043	3,963	0	0	0	3,387	7,350
$\frac{2044}{2045}$	5,466	4,542	0	0	3,378	13,386
2046	4,962	3,028	0	0	3,378	11,367
2047	4,962		0	0		
2047	3,963	3,028	0	0	3,378 3,387	$\frac{11,367}{7,350}$
2048	4,962	3,028	0	0	3,378	11,367
$\frac{2049}{2050}$	5,466		0	0	3,378	13,386
$\frac{2050}{2051}$	5,412	4,542	0	0	3,378	13,167
$\frac{2051}{2052}$		4,378	0	0	3,387	
$\frac{2032}{2053}$	5,477	4,542	0	0		13,406 7,330
$\frac{2055}{2054}$	3,952		0	0	3,378 3,378	
$\frac{2054}{2055}$	3,952		0	0		7,330
$\frac{2055}{2056}$	5,466 4,972	4,542	0	0	3,378	13,386
	i	3,028	0	0	3,387	11,388
$\frac{2057}{2058}$	4,962	3,028	0	0	3,378	11,367
	3,952		0	0	3,378	7,330
2059	4,907	2,864	0	0	3,378	11,148
2060	4,972	3,028			3,387	11,388
2061	4,962	3,028	0	0	3,378	11,367
2062	3,952	0 005	0	0	3,378	7,330
2063	6,980	9,085	0	0	3,378	19,443

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### TABLE 3.8 (continued) SCENARIO 4: DECON WITH 200 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2064	5,927	5,892	0	0	3,387	15,206
2065	4,962	3,028	0	0	3,378	11,367
2066	3,952	0	0	0	3,378	7,330
2067	3,952	0	0	0	3,378	7,330
2068	5,982	6,057	0	0	3,387	15,425
2069	5,466	4,542	0	0	3,378	13,386
2070	3,952	0	0	0	3,378	7,330
2071	3,952	0	0	0	3,378	7,330
2072	6,432	7,406	0	0	3,387	17,225
2073	3,952	0	0	0	3,378	7,330
2074	3,952	0	0	0	3,378	7,330
2075	6,836	8,650	0	0	3,378	18,863
2076	3,963	0	0	0	3,387	7,350
2077	3,952	0	0	0	3,378	7,330
2078	6,476	7,571	0	0	3,378	17,424
2079	3,952	0	0	0	3,378	7,330
2080	3,963	0	0	0	3,387	7,350
2081	3,952	0	0	0	3,378	7,330
2082	6,366	7,242	0	0	3,378	16,986
2083	3,952	0	0	0	3,378	7,330
2084	3,963	0	0	0	3,387	7,350
2085	3,952	0	0	0	3,378	7,330
2086	3,952	0	0	0	3,378	7,330
2087	3,952	0	0	0	3,378	7,330
2088	19,160	45,618	0	2,988	3,910	71,675
2089	3,952	0	0	0	3,378	7,330
2090	3,952	0	0	0	3,378	7,330
2091	3,952	0	0	0	3,378	7,330
2092	3,963	0	0	0	3,387	7,350
2093	3,952	0	0	0	3,378	7,330

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### TABLE 3.8 (continued) SCENARIO 4: DECON WITH 200 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

Year	E Labor	quipment & Materials	Energy	Burial	Other	Total
2094	3,952	0	0	0	3,378	7,330
2095	5,471	4,556	0	0	3,378	13,405
2096	4,976	3,037	0	0	3,387	11,400
2097	4,965	3,037	0	0	3,378	11,380
2098	3,952	0	0	0	3,378	7,330
2099	4,965	3,037	0	0	3,378	11,380
2100	5,471	4,556	0	0	3,378	13,405
2101	5,471	4,556	0	0	3,378	13,405
2102	5,471	4,556	0	0	3,378	13,405
2103	3,952	0	0	0	3,378	7,330
2104	3,963	0	0	0	3,387	7,350
2105	5,471	4,556	0	0	3,378	13,405
2106	4,965	3,037	0	0	3,378	11,380
2107	4,965	3,037	0	0	3,378	11,380
2108	3,963	0	0	0	3,387	7,350
2109	4,965	3,037	0	0	3,378	11,380
2110	4,965	3,037	0	0	3,378	11,380
2111	4,965	3,037	0	0	3,378	11,380
2112	3,963	0	0	0	3,387	7,350
2113	6,990	9,112	0	0	3,378	19,480
2114	5,977	6,075	0	0	3,378	15,430
2115	5,324	4,117	0	0	3,378	12,819
2116	3,963	0	0	0	3,387	7,350
2117	3,952	0	0	0	3,378	7,330
2118	5,977	6,075	0	0	3,378	15,430
2119	5,471	4,556	0	0	3,378	13,405
2120	3,963	0	0	0	3,387	7,350
2121	3,952	0	0	0	3,378	7,330
2122	6,483	7,594	0	0	3,378	17,455
2123	3,952	0	0	0	3,378	7,330

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## TABLE 3.8 (continued) SCENARIO 4: DECON WITH 200 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2124	3,963	0	0	0	3,387	7,350
2125	6,483	7,594	0	0	3,378	17,455
2126	3,952	0	0	0	3,378	7,330
2127	3,952	0	0	0	3,378	7,330
2128	6,494	7,594	0	0	3,387	17,475
2129	3,952	0	0	0	3,378	7,330
2130	3,952	0	0	0	3,378	7,330
2131	3,952	0	0	0	3,378	7,330
2132	6,494	7,594	0	0	3,387	17,475
2133	3,952	0	0	0	3,378	7,330
2134	3,952	0	0	0	3,378	7,330
2135	3,952	0	0	0	3,378	7,330
2136	3,963	0	0	0	3,387	7,350
2137	3,952	0	0	0	3,378	7,330
2138	19,139	45,562	0	0	3,378	68,079
2139	3,952	0	0	0	3,378	7,330
2140	3,963	0	0	0	3,387	7,350
2141	3,952	0	0	0	3,378	7,330
2142	3,952	0	0	0	3,378	7,330
2143	3,952	0	0	0	3,378	7,330
2144	3,963	0	0	0	3,387	7,350
2145	5,471	4,556	0	0	3,378	13,405
2146	4,965	3,037	0	0	3,378	11,380
2147	4,965	3,037	0	0	3,378	11,380
2148	3,963	0	0	0	3,387	7,350
2149	4,965	3,037	0	0	3,378	11,380
2150	5,471	4,556	0	0	3,378	13,405
2151	5,471	4,556	0	0	3,378	13,405
2152	5,482	4,556	0	0	3,387	13,425
2153	3,952	0	0	0	3,378	7,330

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## TABLE 3.8 (continued) SCENARIO 4: DECON WITH 200 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2154	3,952	0	0	0	9 970	7 990
	,	-			3,378	7,330
2155	5,831	5,635	0	0	3,378	14,844
2156	4,976	3,037	0	0	3,387	11,400
2157	4,965	3,037	0	0	3,378	11,380
2158	3,952	0	0	0	3,378	7,330
2159	4,965	3,037	0	0	3,378	11,380
2160	4,976	3,037	0	0	3,387	11,400
2161	4,965	3,037	0	0	3,378	11,380
2162	3,952	0	0	0	3,378	7,330
2163	6,990	9,112	0	0	3,378	19,480
2164	5,988	6,075	0	0	3,387	15,450
2165	4,965	3,037	0	0	3,378	11,380
2166	3,952	0	0	0	3,378	7,330
2167	3,952	0	0	0	3,378	7,330
2168	5,988	6,075	0	0	3,387	15,450
2169	5,471	4,556	0	0	3,378	13,405
2170	3,952	0	0	0	3,378	7,330
2171	3,952	0	0	0	3,378	7,330
2172	6,494	7,594	0	0	3,387	17,475
2173	3,952	0	0	0	3,378	7,330
2174	3,952	0	0	0	3,378	7,330
2175	6,483	7,594	0	0	3,378	17,455
2176	3,963	0	0	0	3,387	7,350
2177	3,952	0	0	0	3,378	7,330
2178	6,483	7,594	0	0	3,378	17,455
2179	3,952	0	0	0	3,378	7,330
2180	3,963	0	0	0	3,387	7,350
2181	3,952	0	0	0	3,378	7,330
2182	6,483	7,594	0	0	3,378	17,455
2183	3,952	0	0	0	3,378	7,330

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#### TABLE 3.8 (continued) SCENARIO 4: DECON WITH 200 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

Year	E Labor	quipment & Materials	Energy	Burial	Other	Total
2184	3,963	0	0	0	3,387	7,350
2185	3,952	0	0	0	3,378	7,330
2186	3,952	0	0	0	3,378	7,330
2187	3,952	0	0	0	3,378	7,330
2188	19,150	45,562	0	0	3,387	68,099
2189	3,952	0	0	0	3,378	7,330
2190	3,952	0	0	0	3,378	7,330
2191	3,952	0	0	0	3,378	7,330
2192	3,963	0	0	0	3,387	7,350
2193	4,056	311	0	0	3,378	7,745
2194	4,212	778	0	0	3,378	8,368
2195	6,090	6,414	0	0	3,378	15,881
2196	5,287	3,972	0	0	3,387	12,645
2197	5,120	3,504	0	0	3,378	12,002
2198	4,315	1,090	0	0	3,378	8,783
2199	5,120	3,504	0	0	3,378	12,002
2200	5,575	4,868	0	0	3,378	13,820
2201	5,730	5,335	0	0	3,378	14,443
2202	5,730	5,335	0	0	3,378	14,443
2203	4,108	467	0	0	3,378	7,952
2204	4,171	623	0	0	3,387	8,180
2205	5,679	5,179	0	0	3,378	14,235
2206	5,120	3,504	0	0	3,378	12,002
2207	5,172	3,660	0	0	3,378	12,210
2208	4,171	623	0	0	3,387	8,180
2209	5,120	3,504	0	0	3,378	12,002
2210	5,172	3,660	0	0	3,378	12,210
2211	5,172	3,660	0	0	3,378	12,210
2212	4,171	623	0	0	3,387	8,180
2213	7,197	9,735	0	0	3,378	20,310

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## TABLE 3.8 (continued) SCENARIO 4: DECON WITH 200 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

		E	quipment &				
	Year	Labor	Materials	Energy	Burial	Other	Total
•							
	2214	6,185	6,698	0	0	3,378	16,260
	2215	5,172	3,660	0	0	3,378	12,210
	2216	4,171	623	0	0	3,387	8,180
	2217	4,134	2,428	0	0	13,357	19,918
	2218	1,124	887	20	177	1,957	4,164
	Total	1,250,894	708,831	9,033	99,898	717,875	2,786,532

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### TABLE 3.9 SCENARIO 5: SAFSTOR WITH 42 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

Year	E Labor	quipment & Materials	Energy	Burial	Other	Total
2033	19,045	696	741	25	4,394	24,901
2034	48,160	4,428	1,864	527	26,418	81,398
2035	19,428	13,608	524	148	16,938	50,647
2036	16,303	14,592	374	20	17,085	48,374
2037	16,258	14,552	373	20	17,038	48,242
2038	14,281	12,057	340	18	15,144	41,840
2039	5,186	945	186	11	6,235	12,563
2040	5,252	1,101	187	11	6,252	12,803
2041	5,134	789	186	11	6,235	12,356
2042	5,290	1,256	186	11	6,235	12,979
2043	5,134	789	186	11	6,235	12,356
2044	5,096	634	187	11	6,252	12,180
2045	5,186	945	186	11	6,235	12,563
2046	5,186	945	186	11	6,235	12,563
2047	5,134	789	186	11	6,235	12,356
2048	5,200	946	187	11	6,252	12,596
2049	5,186	945	186	11	6,235	12,563
2050	5,134	789	186	11	6,235	12,356
2051	5,186	945	186	11	6,235	12,563
2052	5,148	790	187	11	6,252	12,388
2053	5,082	633	186	11	6,235	12,148
2054	5,082	633	186	11	6,235	12,148
2055	5,082	633	186	11	6,235	12,148
2056	4,992	323	187	11	6,252	11,765
2057	4,979	322	186	11	6,235	11,733
2058	4,979	322	186	11	6,235	11,733
2059	4,979	322	186	11	6,235	11,733
2060	5,096	634	187	11	6,252	12,180
2061	5,082	633	186	11	6,235	12,148
2062	5,082	633	186	11	6,235	12,148

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### **TABLE 3.9** (continued) SCENARIO 5: SAFSTOR WITH 42 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2002	F 000	633	100	11	C 925	10 140
2063	5,082		186		6,235	12,148
2064	5,096	634	187	11	6,252	12,180
2065	5,082	633	186	11	6,235	12,148
2066	5,082	633	186	11	6,235	12,148
2067	5,082	633	186	11	6,235	12,148
2068	5,096	634	187	11	6,252	12,180
2069	5,082	633	186	11	6,235	12,148
2070	5,082	633	186	11	6,235	12,148
2071	5,082	633	186	11	6,235	12,148
2072	5,096	634	187	11	6,252	12,180
2073	5,082	633	186	11	6,235	12,148
2074	5,082	633	186	11	6,235	12,148
2075	4,282	320	186	10	3,162	7,961
2076	4,294	321	187	11	3,171	7,983
2077	4,282	320	186	10	3,162	7,961
2078	4,282	320	186	10	3,162	7,961
2079	4,282	320	186	10	3,162	7,961
2080	4,294	321	187	11	3,171	7,983
2081	4,282	320	186	10	3,162	7,961
2082	4,282	320	186	10	3,162	7,961
2083	4,282	320	186	10	3,162	7,961
2084	4,294	321	187	11	3,171	7,983
2085	4,282	320	186	10	3,162	7,961
2086	4,282	320	186	10	3,162	7,961
2087	27,710	3,200	1,088	1,062	3,389	36,449
2088	49,590	7,228	1,866	2,031	4,068	64,784
2089	56,167	28,002	1,771	26,522	15,816	128,280
2090	42,753	14,271	1,506	22,835	10,248	91,613
2091	37,335	8,726	1,398	21,346	8,000	76,805
2092	7,675	892	150	1,477	2,793	12,986

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## TABLE 3.9 (continued) SCENARIO 5: SAFSTOR WITH 42 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

	ent	

Year	Labor	Materials	Energy	Burial	Other	Total
2093	18,857	4,193	299	28	2,367	25,743
2094	13,636		186	0	1,922	24,384
2095	9,863		135	0	1,390	17,636
Total	632,401	170,481	21,571	76,568	409,608	1,310,629

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### TABLE 3.10 SCENARIO 5: SAFSTOR WITH 42 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

Year	E Labor	quipment & Materials	Energy	Burial	Other	Total
2034	7,648	506	327	11	3,559	12,051
2035	47,107	5,551	1,864	350	27,380	82,253
2036	32,232	16,816	856	464	19,987	70,355
2037	23,188	20,952	373	24	15,859	60,397
2038	20,005	17,338	340	21	14,170	51,875
2039	5,242	963	186	11	6,223	12,626
2040	5,308	1,120	187	11	6,240	12,865
2041	5,190	808	186	11	6,223	12,418
2042	5,346	1,275	186	11	6,223	13,041
2043	5,190	808	186	11	6,223	12,418
2044	5,152	653	187	11	6,240	12,243
2045	5,242	963	186	11	6,223	12,626
2046	5,242	963	186	11	6,223	12,626
2047	5,190	808	186	11	6,223	12,418
2048	5,256	964	187	11	6,240	12,658
2049	5,242	963	186	11	6,223	12,626
2050	5,190	808	186	11	6,223	12,418
2051	5,242	963	186	11	6,223	12,626
2052	5,204	809	187	11	6,240	12,450
2053	5,138	652	186	11	6,223	12,210
2054	5,138	652	186	11	6,223	12,210
2055	5,138	652	186	11	6,223	12,210
2056	5,048	342	187	11	6,240	11,828
2057	5,035	341	186	11	6,223	11,795
2058	5,035	341	186	11	6,223	11,795
2059	5,035	341	186	11	6,223	11,795
2060	5,152	653	187	11	6,240	12,243
2061	5,138	652	186	11	6,223	12,210
2062	5,138	652	186	11	6,223	12,210
2063	5,138	652	186	11	6,223	12,210

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### TABLE 3.10 (continued) SCENARIO 5: SAFSTOR WITH 42 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2004	F 150	CEO	107	11	C 940	10.049
2064	5,152	653	187	11	6,240	12,243
2065	5,138	652	186	11	6,223	12,210
2066	5,138	652	186	11	6,223	12,210
2067	5,138	652	186	11	6,223	12,210
2068	5,152	653	187	11	6,240	12,243
2069	5,138	652	186	11	6,223	12,210
2070	5,138	652	186	11	6,223	12,210
2071	5,138	652	186	11	6,223	12,210
2072	5,152	653	187	11	6,240	12,243
2073	5,138	652	186	11	6,223	12,210
2074	5,138	652	186	11	6,223	12,210
2075	825	333	186	10	3,164	4,519
2076	828	334	187	10	3,172	4,531
2077	825	333	186	10	3,164	4,519
2078	825	333	186	10	3,164	4,519
2079	825	333	186	10	3,164	4,519
2080	828	334	187	10	3,172	4,531
2081	825	333	186	10	3,164	4,519
2082	825	333	186	10	3,164	4,519
2083	825	333	186	10	3,164	4,519
2084	828	334	187	10	3,172	4,531
2085	825	333	186	10	3,164	4,519
2086	825	333	186	10	3,164	4,519
2087	825	333	186	10	3,164	4,519
2088	23,101	3,334	1,447	1,478	3,367	32,727
2089	37,591	11,836	1,841	7,041	6,362	64,671
2090	56,571	29,110	1,771	25,884	15,637	128,973
2091	57,872	12,950	1,427	25,648	8,617	106,515
2092	53,927	10,188	1,253	21,984	7,242	94,594
2093	23,983	6,921	299	28	2,688	33,918

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## TABLE 3.10 (continued) SCENARIO 5: SAFSTOR WITH 42 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

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	Year	Labor	Materials	Energy	Burial	Other	Total
[	2094	16,407	14,975	186	0	3,086	34,655
	2095	11,867	10,832	135	0	2,232	25,065
	Total	608,172	191,616	21,262	83,445	395,520	1,300,015

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### TABLE 3.11 SCENARIO 6: SAFSTOR WITH 60 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

	F	Equipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2000	10.045	202	F 41	٥٣	4.004	04.001
2033	19,045	696	741	25	4,394	24,901
2034	48,160	4,428	1,864	527	26,418	81,398
2035	19,353	13,383	524	148	16,938	50,346
2036	16,219	14,341	374	20	17,085	48,039
2037	16,175	14,301	373	20	17,038	47,907
2038	14,212	11,850	340	18	15,144	41,564
2039	4,979	322	186	11	6,235	11,733
2040	4,992	323	187	11	6,252	11,765
2041	4,979	322	186	11	6,235	11,733
2042	4,979	322	186	11	6,235	11,733
2043	4,979	322	186	11	6,235	11,733
2044	4,992	323	187	11	6,252	11,765
2045	4,979	322	186	11	6,235	11,733
2046	4,979	322	186	11	6,235	11,733
2047	4,979	322	186	11	6,235	11,733
2048	4,992	323	187	11	6,252	11,765
2049	4,979	322	186	11	6,235	11,733
2050	4,979	322	186	11	6,235	11,733
2051	4,979	322	186	11	6,235	11,733
2052	5,096	634	187	11	6,252	12,180
2053	5,186	945	186	11	6,235	12,563
2054	5,186	945	186	11	6,235	12,563
2055	5,238	1,100	186	11	6,235	12,771
2056	5,148	790	187	11	6,252	12,388
2057	5,290	1,256	186	11	6,235	12,978
2058	5,134	789	186	11	6,235	12,356
2059	5,082	633	186	11	6,235	12,148
2060	5,200	946	187	11	6,252	12,595
2061	5,186	945	186	11	6,235	12,563
2062	5,134	789	186	11	6,235	12,356

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### TABLE 3.11 (continued) SCENARIO 6: SAFSTOR WITH 60 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2000	F 100	0.45	100	11	0.00	10 700
2063	5,186	945	186	11	6,235	12,563
2064	5,200	946	187	11	6,252	12,595
2065	5,134	789	186	11	6,235	12,356
2066	5,186	945	186	11	6,235	12,563
2067	5,186	945	186	11	6,235	12,563
2068	5,148	790	187	11	6,252	12,388
2069	5,186	945	186	11	6,235	12,563
2070	5,186	945	186	11	6,235	12,563
2071	5,186	945	186	11	6,235	12,563
2072	5,200	946	187	11	6,252	12,595
2073	5,186	945	186	11	6,235	12,563
2074	5,546	2,024	186	11	6,235	14,002
2075	5,186	945	186	11	6,235	12,563
2076	5,200	946	187	11	6,252	12,595
2077	4,979	322	186	11	6,235	11,733
2078	4,282	320	186	10	3,162	7,962
2079	4,282	320	186	10	3,162	7,962
2080	4,294	321	187	11	3,171	7,983
2081	4,282	320	186	10	3,162	7,962
2082	4,282	320	186	10	3,162	7,962
2083	4,282	320	186	10	3,162	7,962
2084	4,294	321	187	11	3,171	7,983
2085	4,282	320	186	10	3,162	7,962
2086	4,282	320	186	10	3,162	7,962
2087	27,710	3,200	1,088	1,062	3,389	36,449
2088	49,590	7,228	1,866	2,031	4,068	64,784
2089	56,167	28,002	1,771	26,522	15,816	128,280
2090	42,753	14,271	1,506	22,835	10,248	91,613
2091	37,335	8,726	1,398	21,346	8,000	76,805
2092	7,675	892	150	1,477	2,793	12,986

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### TABLE 3.11 (continued) SCENARIO 6: SAFSTOR WITH 60 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

	$\mathbf{E}$	quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2093	18,857	4,193	299	28	2,367	25,743
2094	13,636	8,639	186	0	1,922	24,384
2095	9,863	6,248	135	0	1,390	17,636
Total	634,853	171,565	21,571	76,569	418,836	1,323,393

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### TABLE 3.12 SCENARIO 6: SAFSTOR WITH 60 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

		quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2034	7,648	506	327	11	3,559	12,051
2035	47,107	5,551	1,864	350	27,380	82,253
2036	32,148	16,562	856	464	19,987	70,018
2037	23,064	20,579	373	24	15,859	59,899
2038	19,903	17,031	340	21	14,170	51,465
2039	5,035	341	186	11	6,223	11,795
2040	5,048	342	187	11	6,240	11,828
2041	5,035	341	186	11	6,223	11,795
2042	5,035	341	186	11	6,223	11,795
2043	5,035	341	186	11	6,223	11,795
2044	5,048	342	187	11	6,240	11,828
2045	5,035	341	186	11	6,223	11,795
2046	5,035	341	186	11	6,223	11,795
2047	5,035	341	186	11	6,223	11,795
2048	5,048	342	187	11	6,240	11,828
2049	5,035	341	186	11	6,223	11,795
2050	5,035	341	186	11	6,223	11,795
2051	5,035	341	186	11	6,223	11,795
2052	5,048	342	187	11	6,240	11,828
2053	5,138	652	186	11	6,223	12,210
2054	5,242	963	186	11	6,223	12,626
2055	5,242	963	186	11	6,223	12,626
2056	5,308	1,120	187	11	6,240	12,865
2057	5,190	808	186	11	6,223	12,418
2058	5,346	1,275	186	11	6,223	13,041
2059	5,190	808	186	11	6,223	12,418
2060	5,152	653	187	11	6,240	12,243
2061	5,242	963	186	11	6,223	12,626
2062	5,242	963	186	11	6,223	12,626
2063	5,190	808	186	11	6,223	12,418

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### TABLE 3.12 (continued) SCENARIO 6: SAFSTOR WITH 60 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

Year	E Labor	quipment & Materials	Energy	Burial	Other	Total
	I					
2064	5,256	964	187	11	6,240	12,658
2065	5,242	963	186	11	6,223	12,626
2066	5,190	808	186	11	6,223	12,418
2067	5,242	963	186	11	6,223	12,626
2068	5,256	964	187	11	6,240	12,658
2069	5,190	808	186	11	6,223	12,418
2070	5,242	963	186	11	6,223	12,626
2071	5,242	963	186	11	6,223	12,626
2072	5,256	964	187	11	6,240	12,658
2073	5,242	963	186	11	6,223	12,626
2074	5,242	963	186	11	6,223	12,626
2075	5,602	2,043	186	11	6,223	14,064
2076	5,256	964	187	11	6,240	12,658
2077	5,242	963	186	11	6,223	12,626
2078	825	333	186	10	3,164	4,519
2079	825	333	186	10	3,164	4,519
2080	828	334	187	10	3,172	4,531
2081	825	333	186	10	3,164	4,519
2082	825	333	186	10	3,164	4,519
2083	825	333	186	10	3,164	4,519
2084	828	334	187	10	3,172	4,531
2085	825	333	186	10	3,164	4,519
2086	825	333	186	10	3,164	4,519
2087	825	333	186	10	3,164	4,519
2088	23,101	3,334	1,447	1,478	3,368	32,727
2089	37,591	11,836	1,841	7,041	6,362	64,671
2090	56,571	29,110	1,771	25,884	15,637	128,973
2091	57,872	12,950	1,427	25,648	8,617	106,515
2092	53,927	10,188	1,253	21,984	7,242	94,594
2093	23,983	6,921	299	28	2,688	33,918

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# TABLE 3.12 (continued) SCENARIO 6: SAFSTOR WITH 60 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

Year	Labor	quipment & Materials	Energy	Burial	Other	Total
2094	16,407	14,975	186	0	3,086	34,655
2095	11,867	10,832	135	0	2,232	25,065
Total	621,171	192,717	21,262	83,448	404,706	1,323,303

Note: Columns may not add due to rounding

2037

2038

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15,144

6,235

6,252

6,235

6,235

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16,619

23,866

4,979

4,992

4,979

4,979

4,979

4,992

6,493

5,988

5,988

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> 25,400 82,043 35,529 29,936

49,684

80,181

11,733

11,765

11,733

11,733

11,733

11,765

17,790

15,771

15,771

### TABLE 3.13 SCENARIO 7: SAFSTOR WITH 100 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

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Year	Labor	Materials	Energy	Burial	Other	Total
2033	19,545	696	741	25	4,394	25,4
2034	48,890	4,345	1,864	527	26,418	82,0
2035	15,648	2,269	524	148	16,938	35,5
2036	11.694	763	374	20	17.085	29.9

Equipment &

15,634

40,813

322

323

322

322

322

323

4,864

3,350

3,350

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# TABLE 3.13 (continued) SCENARIO 7: SAFSTOR WITH 100 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

		Equipment &
Zear –	Labor	Materials

Year	Labor	Materials	Energy	Burial	Other	Total
2063	8,007	9,407	186	11	6,235	23,846
2064	6,956	6,215	187	11	6,252	19,622
2065	5,988	3,350	186	11	6,235	15,771
2066	4,979	322	186	11	6,235	11,733
2067	4,979	322	186	11	6,235	11,733
2068	7,011	6,379	187	11	6,252	19,841
2069	6,493	4,864	186	11	6,235	17,790
2070	4,979	322	186	11	6,235	11,733
2071	4,979	322	186	11	6,235	11,733
2072	7,461	7,729	187	11	6,252	21,640
2073	4,979	322	186	11	6,235	11,733
2074	4,979	322	186	11	6,235	11,733
2075	7,862	8,972	186	11	6,235	23,266
2076	4,992	323	187	11	6,252	11,765
2077	4,979	322	186	11	6,235	11,733
2078	7,502	7,893	186	11	6,235	21,827
2079	4,979	322	186	11	6,235	11,733
2080	4,992	323	187	11	6,252	11,765
2081	4,979	322	186	11	6,235	11,733
2082	7,393	7,564	186	11	6,235	21,389
2083	4,979	322	186	11	6,235	11,733
2084	4,992	323	187	11	6,252	11,765
2085	4,979	322	186	11	6,235	11,733
2086	4,979	322	186	11	6,235	11,733
2087	27,646	3,201	1,088	1,062	6,520	39,517
2088	64,790	52,925	1,866	5,020	7,348	131,949
2089	57,854	29,888	1,771	26,522	11,260	127,296
2090	43,227	14,760	1,506	21,569	10,138	91,201
2091	37,320	8,651	1,398	19,568	9,685	76,624
2092	7,957	887	150	1,355	6,165	16,514

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# TABLE 3.13 (continued) SCENARIO 7: SAFSTOR WITH 100 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

<b>X</b> 7		quipment &	F	D : 1	O/I	m . 1
Year	Labor	Materials	Energy	Burial	Other	Total
2093	21,014	4,434	299	28	5,681	31,456
2094	16,104	9,238	186	0	4,973	30,502
2095	14,255	11,453	135	0	4,548	30,391
2096	5,005	3,972	0	0	3,448	12,424
2097	4,839	3,504	0	0	3,439	11,782
2098	4,034	1,090	0	0	3,439	8,563
2099	4,839	3,504	0	0	3,439	11,782
2100	5,294	4,868	0	0	3,439	13,600
2101	5,449	5,335	0	0	3,439	14,222
2102	5,449	5,335	0	0	3,439	14,222
2103	3,827	467	0	0	3,439	7,732
2104	3,889	623	0	0	3,448	7,959
2105	5,397	5,179	0	0	3,439	14,015
2106	4,839	3,504	0	0	3,439	11,782
2107	4,891	3,660	0	0	3,439	11,990
2108	3,889	623	0	0	3,448	7,959
2109	4,839	3,504	0	0	3,439	11,782
2110	4,891	3,660	0	0	3,439	11,990
2111	4,891	3,660	0	0	3,439	11,990
2112	3,889	623	0	0	3,448	7,959
2113	6,916	9,735	0	0	3,439	20,090
2114	5,904	6,698	0	0	3,439	16,040
2115	5,251	4,739	0	0	3,439	13,429
2116	3,889	623	0	0	3,448	7,959
2117	3,853	2,428	0	0	13,415	19,696
2118	1,124	887	20	177	1,957	4,164
Total	808,018	399,730	21,590	76,570	550,465	1,856,374

Note: Columns may not add due to rounding

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# TABLE 3.14 SCENARIO 7: SAFSTOR WITH 100 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

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Year	Labor	Materials	Energy	Burial	Other	Total
2034	7,675	305	327	11	3,559	11,877
2035	47,508	5,797	1,864	350	27,380	82,899
2036	27,600	3,076	856	464	19,987	51,983
2037	21,435	15,692	373	24	15,859	53,383
2038	27,847	40,864	340	21	14,170	83,243
2039	5,035	341	186	11	6,223	11,795
2040	5,048	342	187	11	6,240	11,828
2041	5,035	341	186	11	6,223	11,795
2042	5,035	341	186	11	6,223	11,795
2043	5,035	341	186	11	6,223	11,795
2044	5,048	342	187	11	6,240	11,828
2045	6,549	4,883	186	11	6,223	17,852
2046	6,044	3,369	186	11	6,223	15,833
2047	6,044	3,369	186	11	6,223	15,833
2048	5,048	342	187	11	6,240	11,828
2049	6,044	3,369	186	11	6,223	15,833
2050	6,549	4,883	186	11	6,223	17,852
2051	6,494	4,719	186	11	6,223	17,633
2052	6,562	4,884	187	11	6,240	17,884
2053	5,035	341	186	11	6,223	11,795
2054	5,035	341	186	11	6,223	11,795
2055	6,549	4,883	186	11	6,223	17,852
2056	6,058	3,370	187	11	6,240	15,865
2057	6,044	3,369	186	11	6,223	15,833
2058	5,035	341	186	11	6,223	11,795
2059	5,989	3,205	186	11	6,223	15,614
2060	6,058	3,370	187	11	6,240	15,865
2061	6,044	3,369	186	11	6,223	15,833
2062	5,035	341	186	11	6,223	11,795
2063	8,063	9,426	186	11	6,223	23,908

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# TABLE 3.14 (continued) SCENARIO 7: SAFSTOR WITH 100 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

aipment	

Year	Labor	Materials	Energy	Burial	Other	Total
2064	7,012	6,234	187	11	6,240	19,684
2065	6,044	3,369	186	11	6,223	15,833
2066	5,035	341	186	11	6,223	11,795
2067	5,035	341	186	11	6,223	11,795
2068	7,067	6,398	187	11	6,240	19,903
2069	6,549	4,883	186	11	6,223	17,852
2070	5,035	341	186	11	6,223	11,795
2071	5,035	341	186	11	6,223	11,795
2072	7,517	7,748	187	11	6,240	21,703
2073	5,035	341	186	11	6,223	11,795
2074	5,035	341	186	11	6,223	11,795
2075	7,918	8,991	186	11	6,223	23,329
2076	5,048	342	187	11	6,240	11,828
2077	5,035	341	186	11	6,223	11,795
2078	7,558	7,911	186	11	6,223	21,890
2079	5,035	341	186	11	6,223	11,795
2080	5,048	342	187	11	6,240	11,828
2081	5,035	341	186	11	6,223	11,795
2082	7,449	7,583	186	11	6,223	21,451
2083	5,035	341	186	11	6,223	11,795
2084	5,048	342	187	11	6,240	11,828
2085	5,035	341	186	11	6,223	11,795
2086	5,035	341	186	11	6,223	11,795
2087	5,035	341	186	11	6,223	11,795
2088	38,955	48,954	1,447	4,466	7,047	100,869
2089	37,814	12,311	1,841	7,041	7,480	66,488
2090	57,989	30,995	1,771	25,884	11,081	127,720
2091	59,766	13,027	1,427	24,007	9,822	108,049
2092	55,869	10,125	1,253	20,460	9,192	96,899
2093	26,140	7,163	299	28	6,002	39,632

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# TABLE 3.14 (continued) SCENARIO 7: SAFSTOR WITH 100 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

Year	E Labor	quipment & Materials	Energy	Burial	Other	Total
Tear	Labor	Materiais	Effergy	Duriai	Other	10141
2094	18,875	15,575	186	0	6,136	40,773
2095	16,259	16,037	135	0	5,390	37,820
2096	5,005	3,972	0	0	3,448	12,424
2097	4,839	3,504	0	0	3,439	11,782
2098	4,034	1,090	0	0	3,439	8,563
2099	4,839	3,504	0	0	3,439	11,782
2100	5,294	4,868	0	0	3,439	13,600
2101	5,449	5,335	0	0	3,439	14,222
2102	5,449	5,335	0	0	3,439	14,222
2103	3,827	467	0	0	3,439	7,732
2104	3,889	623	0	0	3,448	7,959
2105	5,397	5,179	0	0	3,439	14,015
2106	4,839	3,504	0	0	3,439	11,782
2107	4,891	3,660	0	0	3,439	11,990
2108	3,889	623	0	0	3,448	7,959
2109	4,839	3,504	0	0	3,439	11,782
2110	4,891	3,660	0	0	3,439	11,990
2111	4,891	3,660	0	0	3,439	11,990
2112	3,889	623	0	0	3,448	7,959
2113	6,916	9,735	0	0	3,439	20,090
2114	5,904	6,698	0	0	3,439	16,040
2115	5,251	4,739	0	0	3,439	13,429
2116	3,889	623	0	0	3,448	7,959
2117	3,853	2,428	0	0	13,415	19,696
2118	1,124	887	20	177	1,957	4,164
Total	833,039	420,929	21,282	83,454	535,865	1,894,569

Note: Columns may not add due to rounding

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# TABLE 3.15 SCENARIO 8: SAFSTOR WITH 200 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

	ment	

Year	Labor	Materials	Energy	Burial	Other	Total
2033	19,545	696	741	25	4,394	25,400
2034	48,890	4,345	1,864	527	26,418	82,043
2035	15,648	2,269	524	148	16,938	35,529
2036	11,694	763	374	20	17,085	29,936
2037	16,619	15,634	373	20	17,038	49,684
2038	23,866	40,813	340	18	15,144	80,181
2039	4,979	322	186	11	6,235	11,733
2040	4,992	323	187	11	6,252	11,765
2041	4,979	322	186	11	6,235	11,733
2042	4,979	322	186	11	6,235	11,733
2043	4,979	322	186	11	6,235	11,733
2044	4,992	323	187	11	6,252	11,765
2045	6,493	4,864	186	11	6,235	17,790
2046	5,988	3,350	186	11	6,235	15,771
2047	5,988	3,350	186	11	6,235	15,771
2048	4,992	323	187	11	6,252	11,765
2049	5,988	3,350	186	11	6,235	15,771
2050	6,493	4,864	186	11	6,235	17,790
2051	6,438	4,700	186	11	6,235	17,571
2052	6,506	4,865	187	11	6,252	17,822
2053	4,979	322	186	11	6,235	11,733
2054	4,979	322	186	11	6,235	11,733
2055	6,493	4,864	186	11	6,235	17,790
2056	6,002	3,351	187	11	6,252	15,803
2057	5,988	3,350	186	11	6,235	15,771
2058	4,979	322	186	11	6,235	11,733
2059	5,933	3,186	186	11	6,235	15,552
2060	6,002	3,351	187	11	6,252	15,803
2061	5,988	3,350	186	11	6,235	15,771
2062	4,979	322	186	11	6,235	11,733

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# TABLE 3.15 (continued) SCENARIO 8: SAFSTOR WITH 200 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

	E	quipment &				
Year	Labor	Materials	Energy	Burial	Other	Total
2063	8,007	9,407	186	11	6,235	23,846
2064	6,956	6,215	187	11	6,252	19,622
2065	5,988	3,350	186	11	6,235	15,771
2066	4,979	322	186	11	6,235	11,733
2067	4,979	322	186	11	6,235	11,733
2068	7,011	6,379	187	11	6,252	19,841
2069	6,493	4,864	186	11	6,235	17,790
2070	4,979	322	186	11	6,235	11,733
2071	4,979	322	186	11	6,235	11,733
2072	7,461	7,729	187	11	6,252	21,640
2073	4,979	322	186	11	6,235	11,733
2074	4,979	322	186	11	6,235	11,733
2075	7,862	8,972	186	11	6,235	23,266
2076	4,992	323	187	11	6,252	11,765
2077	4,979	322	186	11	6,235	11,733
2078	7,502	7,893	186	11	6,235	21,827
2079	4,979	322	186	11	6,235	11,733
2080	4,992	323	187	11	6,252	11,765
2081	4,979	322	186	11	6,235	11,733
2082	7,393	7,564	186	11	6,235	21,389
2083	4,979	322	186	11	6,235	11,733
2084	4,992	323	187	11	6,252	11,765
2085	4,979	322	186	11	6,235	11,733
2086	4,979	322	186	11	6,235	11,733
2087	27,646	3,201	1,088	1,062	6,473	39,471
2088	64,790	52,925	1,866	5,020	7,262	131,862
2089	57,854	29,888	1,771	26,522	11,174	127,210
2090	43,227	14,760	1,506	21,569	10,052	91,115
2091	37,320	8,651	1,398	19,568	9,599	76,538
2092	7,957	887	150	1,355	6,078	16,428

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# TABLE 3.15 (continued) SCENARIO 8: SAFSTOR WITH 200 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

Year	E Labor	quipment & Materials	Energy	Burial	Other	Total
	Labor	Materials				10141
2093	20,910	4,123	299	28	5,612	30,972
2094	15,845	8,460	186	0	4,930	29,421
2095	13,995	10,675	135	0	4,502	29,307
2096	4,694	3,037	0	0	3,392	11,123
2097	4,684	3,037	0	0	3,383	11,104
2098	3,671	0	0	0	3,383	7,054
2099	4,684	3,037	0	0	3,383	11,104
2100	5,190	4,556	0	0	3,383	13,129
2101	5,190	4,556	0	0	3,383	13,129
2102	5,190	4,556	0	0	3,383	13,129
2103	3,671	0	0	0	3,383	7,054
2104	3,681	0	0	0	3,392	7,073
2105	5,190	4,556	0	0	3,383	13,129
2106	4,684	3,037	0	0	3,383	11,104
2107	4,684	3,037	0	0	3,383	11,104
2108	3,681	0	0	0	3,392	7,073
2109	4,684	3,037	0	0	3,383	11,104
2110	4,684	3,037	0	0	3,383	11,104
2111	4,684	3,037	0	0	3,383	11,104
2112	3,681	0	0	0	3,392	7,073
2113	6,709	9,112	0	0	3,383	19,204
2114	5,696	6,075	0	0	3,383	15,154
2115	5,043	4,117	0	0	3,383	12,543
2116	3,681	0	0	0	3,392	7,073
2117	3,671	0	0	0	3,383	7,054
2118	5,696	6,075	0	0	3,383	15,154
2119	5,190	4,556	0	0	3,383	13,129
2120	3,681	0	0	0	3,392	7,073
2121	3,671	0	0	0	3,383	7,054
2122	6,202	7,594	0	0	3,383	17,179

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# TABLE 3.15 (continued) SCENARIO 8: SAFSTOR WITH 200 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

pment	

Year	Labor	Materials	Energy	Burial	Other	Total
2123	3,671	0	0	0	3,383	7,054
2124	3,681	0	0	0	3,392	7,073
2125	6,202	7,594	0	0	3,383	17,179
2126	3,671	0	0	0	3,383	7,054
2127	3,671	0	0	0	3,383	7,054
2128	6,212	7,594	0	0	3,392	17,198
2129	3,671	0	0	0	3,383	7,054
2130	3,671	0	0	0	3,383	7,054
2131	3,671	0	0	0	3,383	7,054
2132	6,212	7,594	0	0	3,392	17,198
2133	3,671	0	0	0	3,383	7,054
2134	3,671	0	0	0	3,383	7,054
2135	3,671	0	0	0	3,383	7,054
2136	3,681	0	0	0	3,392	7,073
2137	3,671	0	0	0	3,383	7,054
2138	18,858	45,562	0	0	3,383	67,803
2139	3,671	0	0	0	3,383	7,054
2140	3,681	0	0	0	3,392	7,073
2141	3,671	0	0	0	3,383	7,054
2142	3,671	0	0	0	3,383	7,054
2143	3,671	0	0	0	3,383	7,054
2144	3,681	0	0	0	3,392	7,073
2145	5,190	4,556	0	0	3,383	13,129
2146	4,684	3,037	0	0	3,383	11,104
2147	4,684	3,037	0	0	3,383	11,104
2148	3,681	0	0	0	3,392	7,073
2149	4,684	3,037	0	0	3,383	11,104
2150	5,190	4,556	0	0	3,383	13,129
2151	5,190	4,556	0	0	3,383	13,129
2152	5,200	4,556	0	0	3,392	13,148

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# TABLE 3.15 (continued) SCENARIO 8: SAFSTOR WITH 200 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

		Equipment &
<i>T</i> ear	Labor	Materials

Year	Labor	Materials	Energy	Burial	Other	Total
2153	3,671	0	0	0	3,383	7,054
2154	3,671	0	0	0	3,383	7,054
2155	5,550	5,635	0	0	3,383	14,568
2156	4,694	3,037	0	0	3,392	11,123
2157	4,684	3,037	0	0	3,383	11,104
2158	3,671	0	0	0	3,383	7,054
2159	4,684	3,037	0	0	3,383	11,104
2160	4,694	3,037	0	0	3,392	11,123
2161	4,684	3,037	0	0	3,383	11,104
2162	3,671	0	0	0	3,383	7,054
2163	6,709	9,112	0	0	3,383	19,204
2164	5,706	6,075	0	0	3,392	15,173
2165	4,684	3,037	0	0	3,383	11,104
2166	3,671	0	0	0	3,383	7,054
2167	3,671	0	0	0	3,383	7,054
2168	5,706	6,075	0	0	3,392	15,173
2169	5,190	4,556	0	0	3,383	13,129
2170	3,671	0	0	0	3,383	7,054
2171	3,671	0	0	0	3,383	7,054
2172	6,212	7,594	0	0	3,392	17,198
2173	3,671	0	0	0	3,383	7,054
2174	3,671	0	0	0	3,383	7,054
2175	6,202	7,594	0	0	3,383	17,179
2176	3,681	0	0	0	3,392	7,073
2177	3,671	0	0	0	3,383	7,054
2178	6,202	7,594	0	0	3,383	17,179
2179	3,671	0	0	0	3,383	7,054
2180	3,681	0	0	0	3,392	7,073
2181	3,671	0	0	0	3,383	7,054
2182	6,202	7,594	0	0	3,383	17,179

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# TABLE 3.15 (continued) SCENARIO 8: SAFSTOR WITH 200 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

		Equipment &
-	•	3.6

Year	Labor	Materials	Energy	Burial	Other	Total
2183	3,671	0	0	0	3,383	7,054
2184	3,681	0	0	0	3,392	7,073
2185	3,671	0	0	0	3,383	7,054
2186	3,671	0	0	0	3,383	7,054
2187	3,671	0	0	0	3,383	7,054
2188	18,868	45,562	0	0	3,392	67,822
2189	3,671	0	0	0	3,383	7,054
2190	3,671	0	0	0	3,383	7,054
2191	3,671	0	0	0	3,383	7,054
2192	3,681	0	0	0	3,392	7,073
2193	3,775	311	0	0	3,383	7,469
2194	3,931	778	0	0	3,383	8,092
2195	5,809	6,414	0	0	3,383	15,606
2196	5,005	3,972	0	0	3,392	12,369
2197	4,839	3,504	0	0	3,383	11,727
2198	4,034	1,090	0	0	3,383	8,507
2199	4,839	3,504	0	0	3,383	11,727
2200	5,294	4,868	0	0	3,383	13,544
2201	5,449	5,335	0	0	3,383	14,167
2202	5,449	5,335	0	0	3,383	14,167
2203	3,827	467	0	0	3,383	7,677
2204	3,889	623	0	0	3,392	7,904
2205	5,397	5,179	0	0	3,383	13,959
2206	4,839	3,504	0	0	3,383	11,727
2207	4,891	3,660	0	0	3,383	11,934
2208	3,889	623	0	0	3,392	7,904
2209	4,839	3,504	0	0	3,383	11,727
2210	4,891	3,660	0	0	3,383	11,934
2211	4,891	3,660	0	0	3,383	11,934
2212	3,889	623	0	0	3,392	7,904

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# TABLE 3.15 (continued) SCENARIO 8: SAFSTOR WITH 200 YEAR DFS, UNIT 1 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

	ent	

Year	Labor	Materials	Energy	Burial	Other	Total
2213	6,916	9,735	0	0	3,383	20,034
2214	5,904	6,698	0	0	3,383	15,984
2215	4,891	3,660	0	0	3,383	11,934
2216	3,889	623	0	0	3,392	7,904
2217	3,853	2,428	0	0	13,362	19,642
2218	1,124	887	20	177	1,957	4,164
Total	1,277,333	705,634	21,590	76,570	887,128	2,968,256

Note: Columns may not add due to rounding

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# TABLE 3.16 SCENARIO 8: SAFSTOR WITH 200 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

	ment	

Year	Labor	Materials	Energy	Burial	Other	Total
2034	7,675	305	327	11	3,559	11,877
2035	47,508	5,797	1,864	350	27,380	82,899
2036	27,600	3,076	856	464	19,987	51,983
2037	21,435	15,692	373	24	15,859	53,383
2038	27,847	40,864	340	21	14,170	83,243
2039	5,035	341	186	11	6,223	11,795
2040	5,048	342	187	11	6,240	11,828
2041	5,035	341	186	11	6,223	11,795
2042	5,035	341	186	11	6,223	11,795
2043	5,035	341	186	11	6,223	11,795
2044	5,048	342	187	11	6,240	11,828
2045	6,549	4,883	186	11	6,223	17,852
2046	6,044	3,369	186	11	6,223	15,833
2047	6,044	3,369	186	11	6,223	15,833
2048	5,048	342	187	11	6,240	11,828
2049	6,044	3,369	186	11	6,223	15,833
2050	6,549	4,883	186	11	6,223	17,852
2051	6,494	4,719	186	11	6,223	17,633
2052	6,562	4,884	187	11	6,240	17,884
2053	5,035	341	186	11	6,223	11,795
2054	5,035	341	186	11	6,223	11,795
2055	6,549	4,883	186	11	6,223	17,852
2056	6,058	3,370	187	11	6,240	15,865
2057	6,044	3,369	186	11	6,223	15,833
2058	5,035	341	186	11	6,223	11,795
2059	5,989	3,205	186	11	6,223	15,614
2060	6,058	3,370	187	11	6,240	15,865
2061	6,044	3,369	186	11	6,223	15,833
2062	5,035	341	186	11	6,223	11,795
2063	8,063	9,426	186	11	6,223	23,908

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# TABLE 3.16 (continued) SCENARIO 8: SAFSTOR WITH 200 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

pment	

Year	Labor	Materials	Energy	Burial	Other	Total
2064	7,012	6,234	187	11	6,240	19,684
2065	6,044	3,369	186	11	6,223	15,833
2066	5,035	341	186	11	6,223	11,795
2067	5,035	341	186	11	6,223	11,795
2068	7,067	6,398	187	11	6,240	19,903
2069	6,549	4,883	186	11	6,223	17,852
2070	5,035	341	186	11	6,223	11,795
2071	5,035	341	186	11	6,223	11,795
2072	7,517	7,748	187	11	6,240	21,703
2073	5,035	341	186	11	6,223	11,795
2074	5,035	341	186	11	6,223	11,795
2075	7,918	8,991	186	11	6,223	23,329
2076	5,048	342	187	11	6,240	11,828
2077	5,035	341	186	11	6,223	11,795
2078	7,558	7,911	186	11	6,223	21,890
2079	5,035	341	186	11	6,223	11,795
2080	5,048	342	187	11	6,240	11,828
2081	5,035	341	186	11	6,223	11,795
2082	7,449	7,583	186	11	6,223	21,451
2083	5,035	341	186	11	6,223	11,795
2084	5,048	342	187	11	6,240	11,828
2085	5,035	341	186	11	6,223	11,795
2086	5,035	341	186	11	6,223	11,795
2087	5,035	341	186	11	6,223	11,795
2088	38,955	48,954	1,447	4,466	6,983	100,805
2089	37,814	12,311	1,841	7,041	7,394	66,402
2090	57,989	30,995	1,771	25,884	10,995	127,634
2091	59,766	13,027	1,427	24,007	9,736	107,963
2092	55,869	10,125	1,253	20,460	9,106	96,813
2093	26,036	6,851	299	28	5,933	39,148

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# TABLE 3.16 (continued) SCENARIO 8: SAFSTOR WITH 200 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

Year	E Labor	quipment & Materials	Energy	Burial	Other	Total
2094	18,616	14,797	186	0	6,093	39,692
2095	15,999	15,258	135	0	5,343	36,736
2096	4,694	3,037	0	0	3,392	11,123
2097	4,684	3,037	0	0	3,383	11,104
2098	3,671	0	0	0	3,383	7,054
2099	4,684	3,037	0	0	3,383	11,104
2100	5,190	4,556	0	0	3,383	13,129
2101	5,190	4,556	0	0	3,383	13,129
2102	5,190	4,556	0	0	3,383	13,129
2103	3,671	0	0	0	3,383	7,054
2104	3,681	0	0	0	3,392	7,073
2105	5,190	4,556	0	0	3,383	13,129
2106	4,684	3,037	0	0	3,383	11,104
2107	4,684	3,037	0	0	3,383	11,104
2108	3,681	0	0	0	3,392	7,073
2109	4,684	3,037	0	0	3,383	11,104
2110	4,684	3,037	0	0	3,383	11,104
2111	4,684	3,037	0	0	3,383	11,104
2112	3,681	0	0	0	3,392	7,073
2113	6,709	9,112	0	0	3,383	19,204
2114	5,696	6,075	0	0	3,383	15,154
2115	5,043	4,117	0	0	3,383	12,543
2116	3,681	0	0	0	3,392	7,073
2117	3,671	0	0	0	3,383	7,054
2118	5,696	6,075	0	0	3,383	15,154
2119	5,190	4,556	0	0	3,383	13,129
2120	3,681	0	0	0	3,392	7,073
2121	3,671	0	0	0	3,383	7,054
2122	6,202	7,594	0	0	3,383	17,179
2123	3,671	0	0	0	3,383	7,054

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# TABLE 3.16 (continued) SCENARIO 8: SAFSTOR WITH 200 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

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Year	Labor	Materials	Energy	Burial	Other	Total
2124	3,681	0	0	0	3,392	7,073
2125	6,202	7,594	0	0	3,383	17,179
2126	3,671	0	0	0	3,383	7,054
2127	3,671	0	0	0	3,383	7,054
2128	6,212	7,594	0	0	3,392	17,198
2129	3,671	0	0	0	3,383	7,054
2130	3,671	0	0	0	3,383	7,054
2131	3,671	0	0	0	3,383	7,054
2132	6,212	7,594	0	0	3,392	17,198
2133	3,671	0	0	0	3,383	7,054
2134	3,671	0	0	0	3,383	7,054
2135	3,671	0	0	0	3,383	7,054
2136	3,681	0	0	0	3,392	7,073
2137	3,671	0	0	0	3,383	7,054
2138	18,858	45,562	0	0	3,383	67,803
2139	3,671	0	0	0	3,383	7,054
2140	3,681	0	0	0	3,392	7,073
2141	3,671	0	0	0	3,383	7,054
2142	3,671	0	0	0	3,383	7,054
2143	3,671	0	0	0	3,383	7,054
2144	3,681	0	0	0	3,392	7,073
2145	5,190	4,556	0	0	3,383	13,129
2146	4,684	3,037	0	0	3,383	11,104
2147	4,684	3,037	0	0	3,383	11,104
2148	3,681	0	0	0	3,392	7,073
2149	4,684	3,037	0	0	3,383	11,104
2150	5,190	4,556	0	0	3,383	13,129
2151	5,190	4,556	0	0	3,383	13,129
2152	5,200	4,556	0	0	3,392	13,148
2153	3,671	0	0	0	3,383	7,054

Year

Other

3,383

3,383

3,392

3,383

3,383

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7,054

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17,179

7,054

Burial

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Labor

Equipment & Materials

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Total

### TABLE 3.16 (continued) SCENARIO 8: SAFSTOR WITH 200 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

Energy

rear	Labor	Materiais	Energy	Dullai	Other	Tutai
2154	3,671	0	0	0	3,383	7,054
2155	5,550	5,635	0	0	3,383	14,568
2156	4,694	3,037	0	0	3,392	11,123
2157	4,684	3,037	0	0	3,383	11,104
2158	3,671	0	0	0	3,383	7,054
2159	4,684	3,037	0	0	3,383	11,104
2160	4,694	3,037	0	0	3,392	11,123
2161	4,684	3,037	0	0	3,383	11,104
2162	3,671	0	0	0	3,383	7,054
2163	6,709	9,112	0	0	3,383	19,204
2164	5,706	6,075	0	0	3,392	15,173
2165	4,684	3,037	0	0	3,383	11,104
2166	3,671	0	0	0	3,383	7,054
2167	3,671	0	0	0	3,383	7,054
2168	5,706	6,075	0	0	3,392	15,173
2169	5,190	4,556	0	0	3,383	13,129
2170	3,671	0	0	0	3,383	7,054
2171	3,671	0	0	0	3,383	7,054
2172	6,212	7,594	0	0	3,392	17,198
2173	3,671	0	0	0	3,383	7,054
2174	3,671	0	0	0	3,383	7,054
2175	6,202	7,594	0	0	3,383	17,179
2176	3,681	0	0	0	3,392	7,073
2177	3,671	0	0	0	3,383	7,054

0

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2178

2179

2180

2181

2182

2183

6,202

3,671

3,681

3,671

6,202

3,671

0

0

0

0

7,594

7,594

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# TABLE 3.16 (continued) SCENARIO 8: SAFSTOR WITH 200 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

pment	

Year	Labor	Materials	Energy	Burial	Other	Total
2184	3,681	0	0	0	3,392	7,073
2185	3,671	0	0	0	3,383	7,054
2186	3,671	0	0	0	3,383	7,054
2187	3,671	0	0	0	3,383	7,054
2188	18,868	45,562	0	0	3,392	67,822
2189	3,671	0	0	0	3,383	7,054
2190	3,671	0	0	0	3,383	7,054
2191	3,671	0	0	0	3,383	7,054
2192	3,681	0	0	0	3,392	7,073
2193	3,775	311	0	0	3,383	7,469
2194	3,931	778	0	0	3,383	8,092
2195	5,809	6,414	0	0	3,383	15,606
2196	5,005	3,972	0	0	3,392	12,369
2197	4,839	3,504	0	0	3,383	11,727
2198	4,034	1,090	0	0	3,383	8,507
2199	4,839	3,504	0	0	3,383	11,727
2200	5,294	4,868	0	0	3,383	13,544
2201	5,449	5,335	0	0	3,383	14,167
2202	5,449	5,335	0	0	3,383	14,167
2203	3,827	467	0	0	3,383	7,677
2204	3,889	623	0	0	3,392	7,904
2205	5,397	5,179	0	0	3,383	13,959
2206	4,839	3,504	0	0	3,383	11,727
2207	4,891	3,660	0	0	3,383	11,934
2208	3,889	623	0	0	3,392	7,904
2209	4,839	3,504	0	0	3,383	11,727
2210	4,891	3,660	0	0	3,383	11,934
2211	4,891	3,660	0	0	3,383	11,934
2212	3,889	623	0	0	3,392	7,904
2213	6,916	9,735	0	0	3,383	20,034

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# TABLE 3.16 (continued) SCENARIO 8: SAFSTOR WITH 200 YEAR DFS, UNIT 2 TOTAL ANNUAL EXPENDITURES

(thousands, 2020 dollars)

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1,10	ш		ent	(V

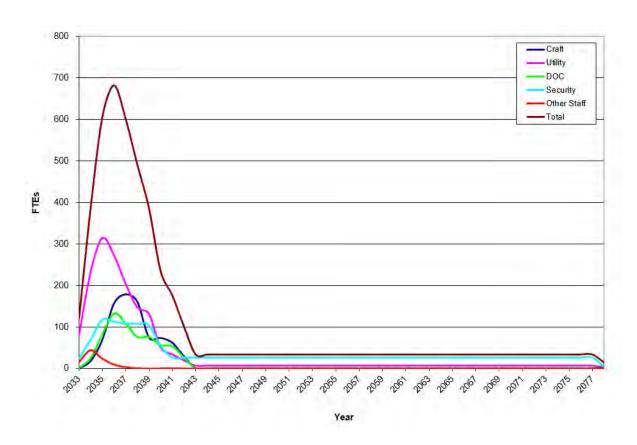
Year	Labor	Materials	Energy	Burial	Other	Total
2214	5,904	6,698	0	0	3,383	15,984
2215	4,891	3,660	0	0	3,383	11,934
2216	3,889	623	0	0	3,392	7,904
2217	3,853	2,428	0	0	13,362	19,642
2218	1,124	887	20	177	1,957	4,164
Total	1,302,354	726,832	21,282	83,454	872,596	3,006,518

Note: Columns may not add due to rounding

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### FIGURE 3.1 SCENARIO 2: DECON WITH 60 YEAR DFS PRAIRIE ISLAND NUCLEAR GENERATING PLANT MANPOWER LEVELS

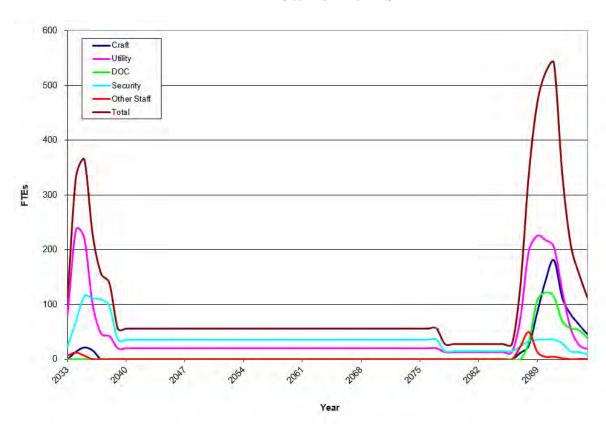


Note that the labor hour basis of this chart was taken from Appendix D; however not all line items in Appendix D have labor hour values available (e.g. spent fuel canister loading estimates from Xcel Energy)

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### FIGURE 3.2 SCENARIO 6: SAFSTOR WITH 60 YEAR DFS PRAIRIE ISLAND NUCLEAR GENERATING PLANT MANPOWER LEVELS



Note that the labor hour basis of this chart was taken from Appendix H; however not all line items in Appendix I have labor hour values available (e.g. spent fuel canister loading estimates from Xcel Energy)

Docket No. E002/RP-24-67 Appendix BB: 2022-2024 Triennial Nuclear Plant Decommissioning Study and Assumptions - Page 1736 of 1964

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#### 4. SCHEDULE ESTIMATE

The schedules for the decommissioning scenarios considered in this study follow the sequence presented in the AIF/NESP-036 study, with minor changes to reflect recent experience and site-specific constraints. In addition, the scheduling has been revised to reflect the spent fuel management plans described in Section 3.4.1.

A schedule or sequence of activities for the DECON alternative is presented in Figure 4.1. The schedule is also representative of the work activities identified in the delayed dismantling scenarios, absent any spent fuel constraints. The scheduling sequence is based on the fuel being removed from the spent fuel pool within the first four years after operations cease. The key activities listed in the schedule do not reflect a one-to-one correspondence with those activities in the cost tables, but reflect dividing some activities for clarity and combining others for convenience. The schedule was prepared using the "Microsoft Project Professional" computer software. [44]

#### 4.1 SCHEDULE ESTIMATE ASSUMPTIONS

The schedule reflects the results of a precedence network developed for the site decommissioning activities, i.e., a PERT (Program Evaluation and Review Technique) Software Package. The work activity durations used in the precedence network reflect the actual man-hour estimates from the cost table, adjusted by stretching certain activities over their slack range and shifting the start and end dates of others. The following assumptions were made in the development of the decommissioning schedule:

- The fuel handling area of the auxiliary building is isolated until such time that all spent fuel has been discharged from the storage pool to the ISFSI. Decontamination and dismantling of the spent fuel storage pool is initiated once the transfer of spent fuel is complete (DECON option).
- All work (except vessel and internals removal) is performed during an 8-hour workday, 5 days per week, with no overtime. There are eleven paid holidays per year.
- Reactor and internals removal activities are performed by using separate crews for different activities working on different shifts, with a corresponding backshift charge for the second shift.
- Multiple crews work parallel activities to the maximum extent possible, consistent with optimum efficiency, adequate access for cutting, removal and laydown space, and with the stringent safety measures necessary during demolition of heavy components and structures.

Docket No. E002/RP-24-67 Appendix BB: 2022-2024 Triennial Nuclear Plant Decommissioning Study and Assumptions - Page 1737 of 1964

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For plant systems removal, the systems with the longest removal durations in areas on the critical path are considered to determine the duration of the activity.

#### 4.2 PROJECT SCHEDULE

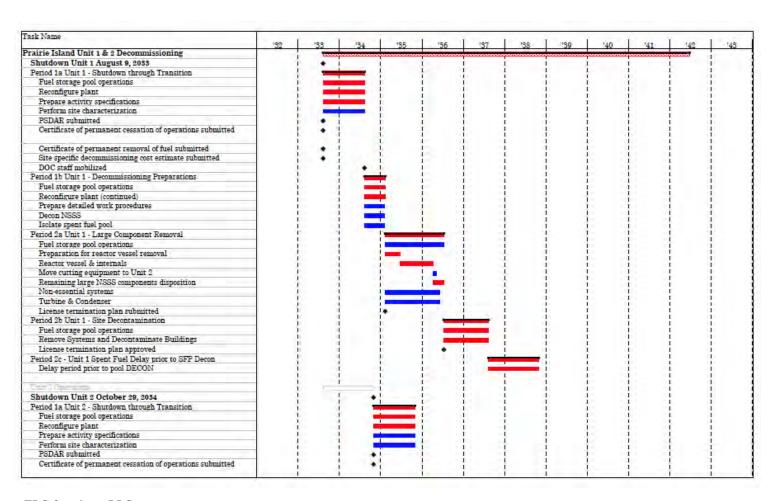
The period-dependent costs presented in the detailed cost tables are based upon the durations developed in the schedules for decommissioning Prairie Island. Durations are established between several milestones in each project period; these durations are used to establish a critical path for the entire project. In turn, the critical path duration for each period is used as the basis for determining the period-dependent costs. A second parallel path is also shown for the spent fuel cooling period, which determines the release of the auxiliary building for final decontamination.

Project timelines are provided in Figures 4.2 through 4.9 with milestone dates based on a 2033/2034 shutdown dates. The spent fuel pool is emptied approximately four years after shutdown, while ISFSI operations continue until the DOE completes the transfer of assemblies. Deferred decommissioning operations in all scenarios are assumed to commence so that the operating licenses are terminated within a 60-year period from the cessation of operations.

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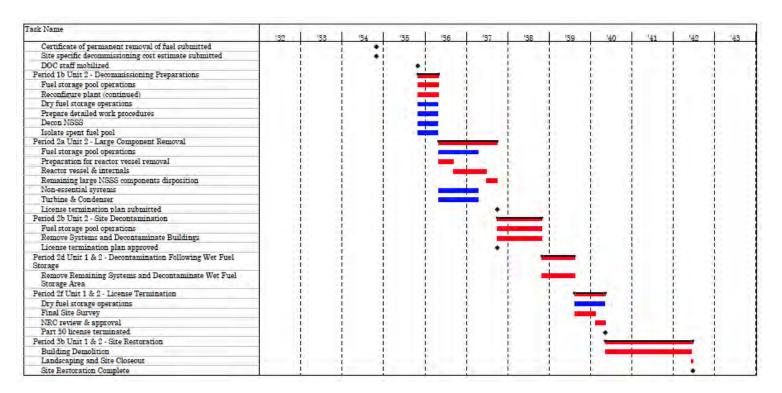
FIGURE 4.1 DECON ACTIVITY SCHEDULE



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# FIGURE 4.1 (continued) DECON ACTIVITY SCHEDULE



- 1. Red scheduling bars indicate critical path activities
- 2. Blue scheduling bars associated with non-critical path activities
- 3. Diamond symbols indicate major milestones

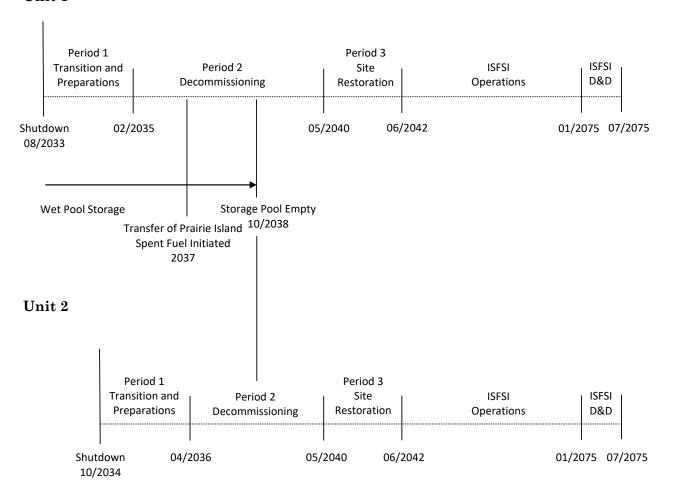
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### FIGURE 4.2 SCENARIO 1: DECON WITH 42 YEAR DFS DECOMMISSIONING TIMELINE

(not to scale)

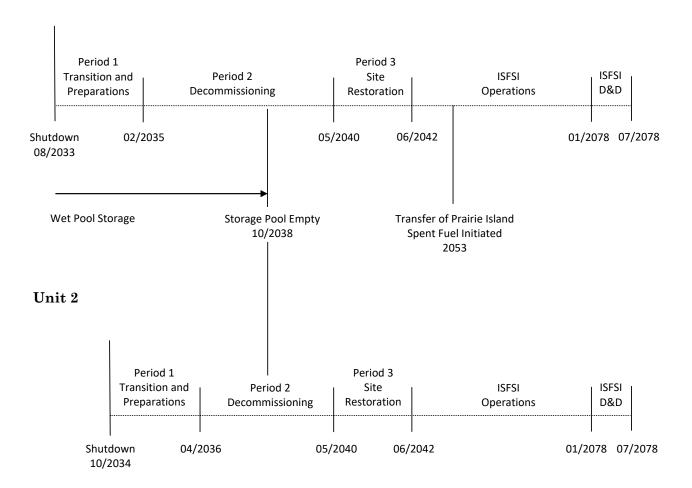


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### FIGURE 4.3 SCENARIO 2: DECON WITH 60 YEAR DFS DECOMMISSIONING TIMELINE

(not to scale)

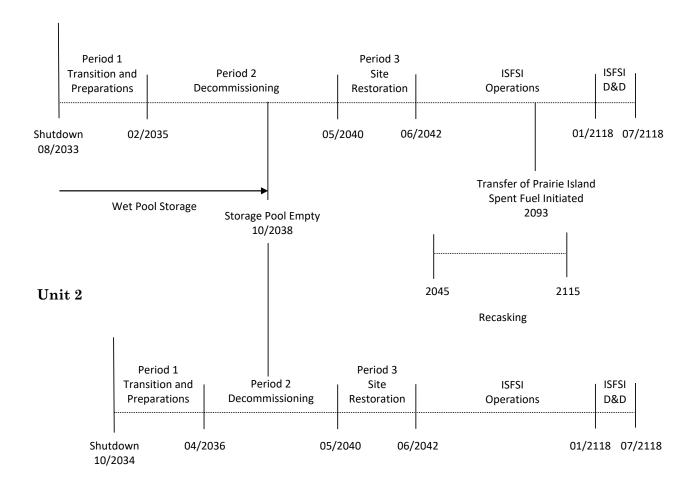


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### FIGURE 4.4 SCENARIO 3: DECON WITH 100 YEAR DFS DECOMMISSIONING TIMELINE

(not to scale)



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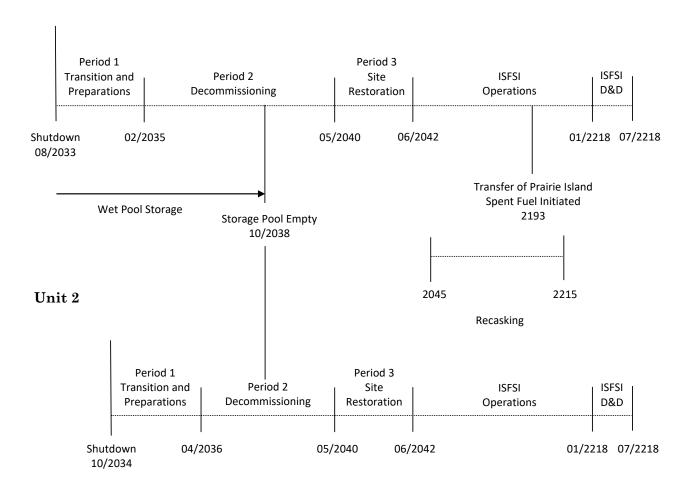
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### FIGURE 4.5 SCENARIO 4: DECON WITH 200 YEAR DFS **DECOMMISSIONING TIMELINE**

(not to scale)



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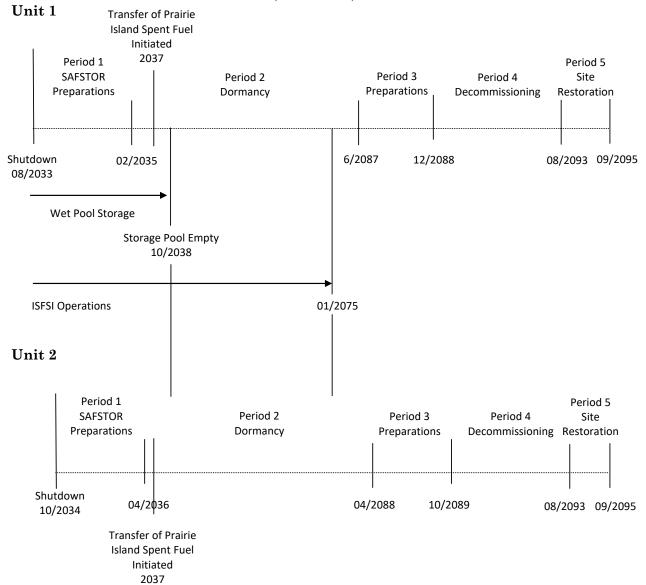
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# FIGURE 4.6 SCENARIO 5: SAFSTOR WITH 42 YEAR DFS **DECOMMISSIONING TIMELINE**

(not to scale)



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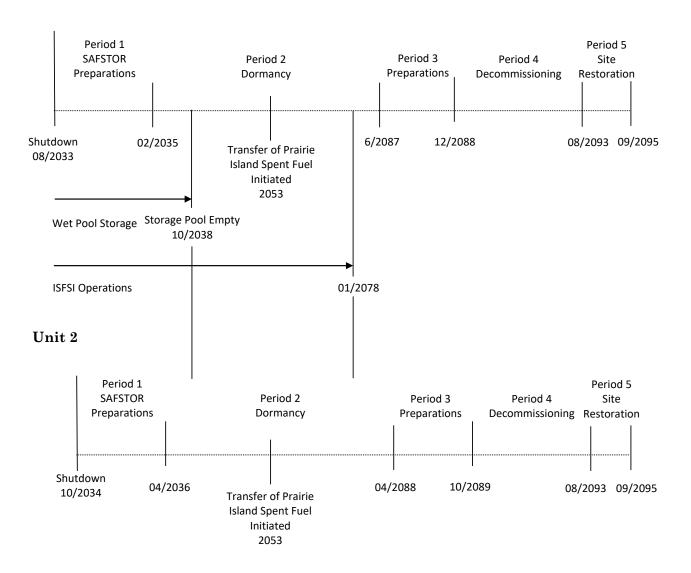
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### FIGURE 4.7 SCENARIO 6: SAFSTOR WITH 60 YEAR DFS DECOMMISSIONING TIMELINE

(not to scale)



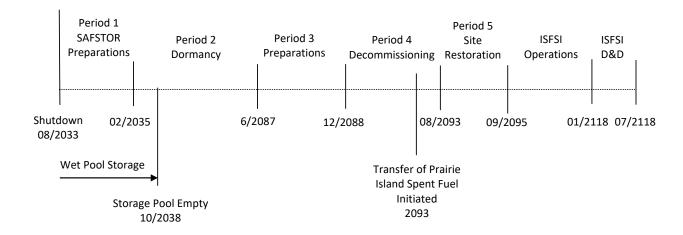
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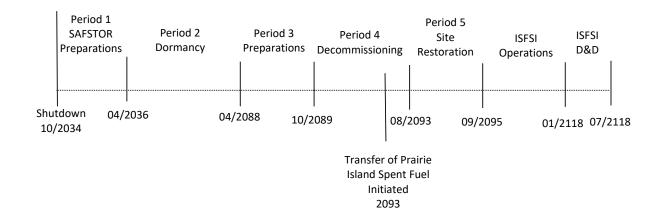
# FIGURE 4.8 SCENARIO 7: SAFSTOR WITH 100 YEAR DFS DECOMMISSIONING TIMELINE

(not to scale)

#### Unit 1



#### Unit 2



Recasking campaigns occur 2045 through 2088, and 2095 through 2115.

DOE pickup of fuel occurs from 2093 to 2118.

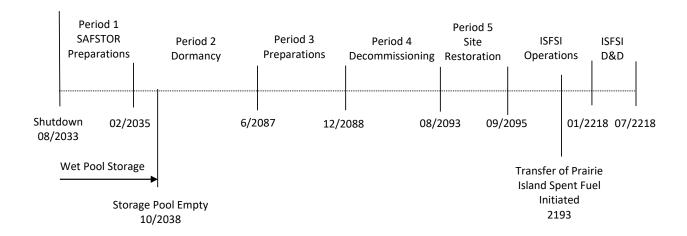
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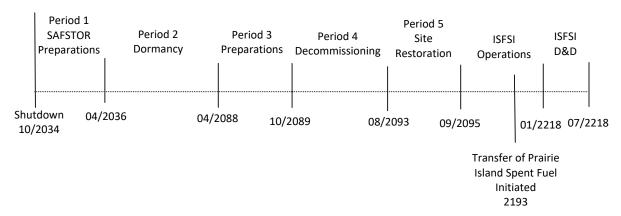
### FIGURE 4.9 SCENARIO 8: SAFSTOR WITH 200 YEAR DFS DECOMMISSIONING TIMELINE

(not to scale)

#### Unit 1



#### Unit 2



Recasking campaigns occur 2045 through 2088, 2095 through 2138, 2145 through 2188, and 2195 through 2215.

DOE pickup of fuel occurs from 2193 to 2118.

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#### 5. RADIOACTIVE WASTES

The objectives of the decommissioning process are the removal of all radioactive material from the site that would restrict its future use and the termination of the NRC licenses. This currently requires the remediation of all radioactive material at the site in excess of applicable legal limits. Under the Atomic Energy Act, [45] the NRC is responsible for protecting the public from sources of ionizing radiation. Title 10 of the Code of Federal Regulations delineates the production, utilization, and disposal of radioactive materials and processes. In particular, Part 71 defines radioactive material as it pertains to transportation and Part 61 specifies its disposition.

Most of the materials being transported for controlled burial are categorized as Low Specific Activity (LSA) or Surface Contaminated Object (SCO) materials containing Type A quantities, as defined in 49 CFR Parts 173-178. Shipping containers are required to be Industrial Packages (IP-1, IP-2 or IP-3, as defined in 10 CFR §173.411). For this study, commercially available steel containers are presumed to be used for the disposal of piping, small components, and concrete. Larger components can serve as their own containers, with proper closure of all openings, access ways, and penetrations.

The destinations for the various waste streams from decommissioning are identified in Figures 5.1 and 5.2. The volumes of radioactive waste generated during the various decommissioning activities at the site are shown on a line-item basis in Appendices C through J and summarized in Tables 5.1 through 5.8. The quantified waste volume summaries shown in these tables are consistent with §61 classifications. The volumes are calculated based on the exterior dimensions for containerized material and on the displaced volume of components serving as their own waste containers.

The reactor vessel and internals are categorized as large quantity shipments and, accordingly, will be shipped in reusable, shielded truck casks with disposable liners. In calculating disposal costs, the burial fees are applied against the liner volume, as well as the special handling requirements of the payload. Packaging efficiencies are lower for the highly activated materials (greater than Type A quantity waste), where high concentrations of gamma-emitting radionuclides limit the capacity of the shipping canisters.

No process system containing/handling radioactive substances at shutdown is presumed to meet material release criteria by decay alone, i.e., systems radioactive at shutdown will still be radioactive over the time period during which the decommissioning is accomplished, due to the presence of long-lived radionuclides.

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While the dose rates decrease with time, radionuclides such as <sup>137</sup>Cs will still control the disposition requirements.

The waste material generated in the decontamination and dismantling of Prairie Island is primarily generated during Period 2 of the DECON alternatives and Period 4 of the SAFSTOR alternatives. Material that is considered potentially contaminated when removed from the radiologically controlled area is sent to processing facilities in Tennessee for conditioning and disposal. Heavily contaminated components and activated materials are routed for controlled disposal. The disposal volumes reported in the tables reflect the savings resulting from reprocessing and recycling.

Disposal fees are calculated using representative costs, with surcharges added for the highly activated components, for example, generated in the segmentation of the reactor vessels. The cost to dispose of the majority of the material generated from the decontamination and dismantling activities is based upon representative rates.

Energy Solutions is not able to accept the higher activity waste (Class B and C) generated in the decontamination of the NSSS and segmentation of the components closest to the core. Waste disposal costs for the higher activity waste (Class B and C) are based upon preliminary and indicative information on the cost for such from WCS.

A small quantity of material generated during the Prairie Island decommissioning will not be considered suitable for near-surface disposal, and is assumed to be disposed of in a geologic repository, in a manner similar to that envisioned for spent fuel disposal. Such material, known as Greater-Than-Class-C or GTCC material, is estimated to require eight spent fuel storage canisters (or the equivalent) to dispose of the most radioactive portions of the reactor vessel internals. The volume and weight reported in Tables 5.1 through 5.8 represent the packaged weight and volume of the spent fuel storage canisters.

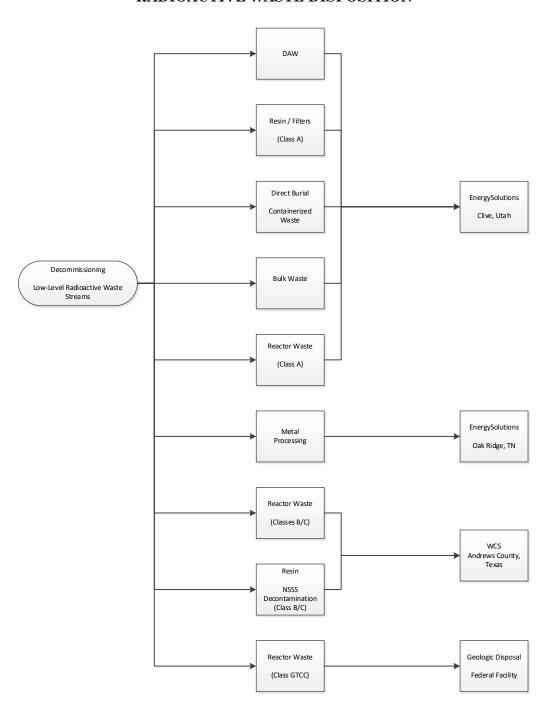
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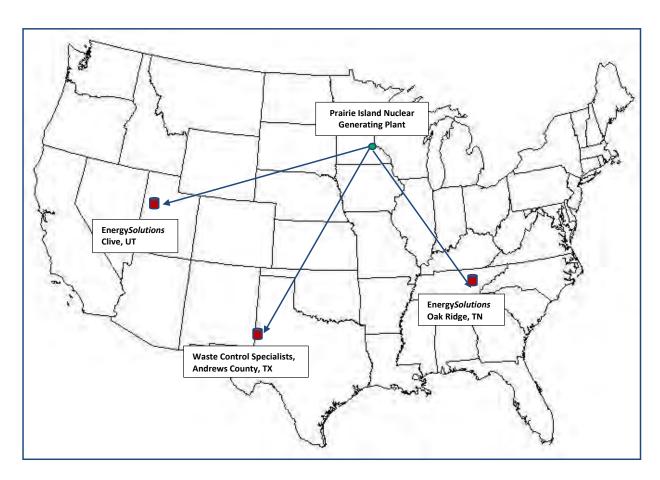
FIGURE 5.1 RADIOACTIVE WASTE DISPOSITION



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## FIGURE 5.2 DECOMMISSIONING WASTE DESTINATIONS RADIOLOGICAL



The figure indicates the destinations for the low-level radioactive waste designated for direct disposal (Clive, Utah) and processing/recovery (Oak Ridge, Tennessee).

Disposition of the Class B and C low-level radioactive waste will be at the Waste Control Specialists site in Andrews County, Texas.

Disposal options (and destinations) for GTCC are still being evaluated.

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## TABLE 5.1 SCENARIO 1: DECON WITH 42 YEAR DFS DECOMMISSIONING WASTE SUMMARY

			Waste Volume	Mass
Waste	Cost Basis	Class [1]	(cubic feet)	(pounds)
Low-Level Radioactive	EnergySolutions			
Waste (near-surface	Containerized	A	205,136	11,929,447
disposal)	EnergySolutions		,	, ,
	Bulk	A	146,529	6,720,310
	Future LLRW	11	110,020	0,120,010
	Disposal Facility			
	(Proxy)	В	1,651	176,286
	Future LLRW			
	Disposal Facility		1.040	100 444
	(Proxy)	C	1,346	199,444
Greater than Class C	Spent Fuel			
(geologic repository)	Equivalent	GTCC	3,547	689,647
	•		,	,
Total [2]			358,209	19,715,134
Total			000,200	10,710,101
Processed/Conditioned				
(off-site recycling	Recycling			
center)	Vendors	A	314,250	12,618,444
Scrap Metal				150,506,000

 $<sup>^{\</sup>mbox{\scriptsize [1]}}$  Waste is classified according to the requirements as delineated in Title 10 CFR, Part 61.55

<sup>[2]</sup> Columns may not add due to rounding

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## TABLE 5.2 SCENARIO 2: DECON WITH 60 YEAR DFS DECOMMISSIONING WASTE SUMMARY

			Waste Volume	Mass
Waste	Cost Basis	Class [1]	(cubic feet)	(pounds)
Low-Level Radioactive	EnergySolutions			
Waste (near-surface	Containerized	A	205,136	11,929,447
disposal)	EnergySolutions		,	, ,
	Bulk	A	146,529	6,720,310
	Future LLRW	11	110,020	0,120,010
	Disposal Facility			
	(Proxy)	В	1,651	176,286
	Future LLRW			
	Disposal Facility		1.040	100 444
	(Proxy)	C	1,346	199,444
Greater than Class C	Spent Fuel			
(geologic repository)	Equivalent	GTCC	3,547	689,647
	•		,	,
Total [2]			358,209	19,715,134
Total			000,200	10,710,101
Processed/Conditioned				
(off-site recycling	Recycling			
center)	Vendors	A	314,250	12,618,444
Scrap Metal				150,506,000

 $<sup>^{[1]}</sup>$  Waste is classified according to the requirements as delineated in Title 10 CFR, Part 61.55

<sup>[2]</sup> Columns may not add due to rounding

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## TABLE 5.3 SCENARIO 3: DECON WITH 100 YEAR DFS DECOMMISSIONING WASTE SUMMARY

			Waste Volume	Mass
Waste	Cost Basis	Class [1]	(cubic feet)	(pounds)
Low-Level Radioactive	EnergySolutions			
Waste (near-surface	Containerized	A	205,136	11,933,347
disposal)	EnergySolutions			
	Bulk	A	146,525	6,720,228
	Future LLRW			
	Disposal Facility			
	(Proxy)	В	1,651	176,286
	Future LLRW			
	Disposal Facility			
	(Proxy)	C	1,346	199,444
Greater than Class C	Spent Fuel			
(geologic repository)	Equivalent	GTCC	3,547	689,647
(goologic repository)	Equivarent	01200	3,011	000,011
Total [2]			358,205	19,718,952
Total			390,200	10,710,002
Processed/Conditioned				
(off-site recycling	Recycling			
center)	Vendors	A	314,250	12,618,444
Scrap Metal				150,506,000

 $<sup>^{\</sup>mbox{\scriptsize [1]}}$  Waste is classified according to the requirements as delineated in Title 10 CFR, Part 61.55

<sup>[2]</sup> Columns may not add due to rounding

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## TABLE 5.4 SCENARIO 4: DECON WITH 200 YEAR DFS DECOMMISSIONING WASTE SUMMARY

Waste	Cost Basis	Class [1]	Waste Volume (cubic feet)	Mass (pounds)
				Ţ,
Low-Level Radioactive Waste (near-surface	EnergySolutions Containerized	A	205,136	11,933,347
disposal)	Energy <i>Solutions</i> Bulk	A	146,525	6,720,228
	Future LLRW Disposal Facility (Proxy)	В	1,651	176,286
	Future LLRW Disposal Facility	C		199,444
	(Proxy)		1,346	133,444
Greater than Class C (geologic repository)	Spent Fuel Equivalent	GTCC	3,547	689,647
Total [2]			358,205	19,718,952
Processed/Conditioned (off-site recycling	Recycling			
center)	Vendors	A	314,250	12,618,444
Scrap Metal				150,506,000

Waste is classified according to the requirements as delineated in Title 10 CFR, Part 61.55

<sup>[2]</sup> Columns may not add due to rounding

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## **TABLE 5.5** SCENARIO 5: SAFSTOR WITH 42 YEAR DFS DECOMMISSIONING WASTE SUMMARY

Waste	Cost Basis	Class [1]	Waste Volume (cubic feet)	Mass (pounds)
Low-Level Radioactive Waste (near-surface	Energy <i>Solutions</i> Containerized	A	96,979	7,057,818
disposal)	EnergySolutions Bulk	A	221,053	9,973,926
	Future LLRW Disposal Facility	D	250	20.274
	(Proxy) Future LLRW	В	250	28,274
	Disposal Facility	$\mathbf{C}$	1 410	100 710
	(Proxy)	<u> </u>	1,416	199,712
Greater than Class C (geologic repository)	Spent Fuel Equivalent	GTCC	3,547	689,647
(80000800-17)	q	5, 2 5 5	3,0 1.1	
Total [2]			323,245	17,949,377
Processed/Conditioned (off-site recycling	Recycling			
center)	Vendors	A	319,950	12,861,542
Scrap Metal				150,818,000

Waste is classified according to the requirements as delineated in Title 10 CFR, Part 61.55

<sup>[2]</sup> Columns may not add due to rounding

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## TABLE 5.6 SCENARIO 6: SAFSTOR WITH 60 YEAR DFS DECOMMISSIONING WASTE SUMMARY

		612 513	Waste Volume	Mass
Waste	Cost Basis	Class [1]	(cubic feet)	(pounds)
Low-Level Radioactive	EnergySolutions			
Waste (near-surface	Containerized	A	96,979	7,057,818
disposal)	EnergySolutions			
	Bulk	A	221,080	9,974,450
	Future LLRW		,	-,,
	Disposal Facility			
	(Proxy)	В	250	28,274
	Future LLRW			
	Disposal Facility			400 =40
	(Proxy)	C	1,416	199,712
Greater than Class C	Count Eval			
(geologic repository)	Spent Fuel Equivalent	GTCC	3,547	689,647
(geologic repository)	Equivalent	GICC	5,547	003,047
Total [2]			323,271	17,949,901
Processed/Conditioned				
(off-site recycling	Recycling			
center)	Vendors	A	319,950	12,861,542
Scrap Metal				150,818,000

 $<sup>^{[1]}</sup>$   $\,$  Waste is classified according to the requirements as delineated in Title 10 CFR, Part 61.55

<sup>[2]</sup> Columns may not add due to rounding

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## TABLE 5.7 SCENARIO 7: SAFSTOR WITH 100 YEAR DFS DECOMMISSIONING WASTE SUMMARY

Waste	Cost Basis	Class [1]	Waste Volume (cubic feet)	Mass (pounds)
Low-Level Radioactive Waste (near-surface	EnergySolutions Containerized	A	96,978	7,061,678
disposal)	EnergySolutions Bulk	A	221,166	9,976,186
	Future LLRW Disposal Facility	D		20.274
	(Proxy) Future LLRW	В	250	28,274
	Disposal Facility		1.110	100 510
	(Proxy)	С	1,416	199,712
Greater than Class C (geologic repository)	Spent Fuel Equivalent	GTCC	3,547	689,647
(geologic repository)	Equivalent	dicc	5,041	003,047
Total [2]			323,357	17,955,497
Processed/Conditioned (off-site recycling	Recycling			
center)	Vendors	A	319,950	12,861,542
Scrap Metal				150,818,000

Waste is classified according to the requirements as delineated in Title 10 CFR, Part 61.55

<sup>[2]</sup> Columns may not add due to rounding

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## TABLE 5.8 SCENARIO 8: SAFSTOR WITH 200 YEAR DFS DECOMMISSIONING WASTE SUMMARY

Waste	Cost Basis	Class [1]	Waste Volume (cubic feet)	Mass (pounds)
Low-Level Radioactive	EnergySolutions			
Waste (near-surface	Containerized	A	96,978	7,061,678
disposal)	EnergySolutions			, ,
	Bulk	A	221,166	9,976,186
	Future LLRW	71	221,100	0,010,100
	Disposal Facility			
	(Proxy)	В	250	28,274
	Future LLRW			
	Disposal Facility			
	(Proxy)	С	1,416	199,712
	G (P)			
Greater than Class C (geologic repository)	Spent Fuel	GTCC	3,547	COO C 47
(geologic repository)	Equivalent	GICC	5,947	689,647
Total [2]			323,357	17,955,497
Processed/Conditioned				
(off-site recycling	Recycling			
center)	Vendors	A	319,950	12,861,542
Scrap Metal				150,818,000

 $<sup>^{[1]}</sup>$  Waste is classified according to the requirements as delineated in Title  $10~\mathrm{CFR},\,\mathrm{Part}\;61.55$ 

<sup>[2]</sup> Columns may not add due to rounding

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#### 6. RESULTS

This report presents estimates of the cost to decommission Prairie Island for the selected decommissioning scenarios following the cessation of plant operations. The estimates are based on numerous fundamental assumptions, including regulatory requirements, project contingencies, low-level radioactive waste disposal practices, high-level radioactive waste management options, and site restoration requirements. While not an engineering study, the estimates provide Xcel Energy with sufficient information to assess their financial obligations, as they pertain to the eventual decommissioning of the nuclear station.

The decommissioning scenarios assume continued operation of the station's spent fuel pool for a minimum of four years following the cessation of operations for continued cooling of the assemblies. The existing ISFSI is expanded to accommodate the spent fuel, once sufficiently cooled, until such time that the DOE can complete the transfer of the assemblies to its repository.

Using Scenario 2 as the base case, the cost projected to promptly decommission the station, restore the site, and manage the spent fuel is estimated to be \$2.048 billion (2020 dollars). The majority of this cost (approximately 58.0%) is associated with the physical decontamination and dismantling of the nuclear plant so that the operating licenses can be terminated. Another 36.0% is associated with the management, interim storage, and eventual transfer of the spent fuel. The remaining 6.0% is for the demolition of the designated structures and limited restoration of the site.

The primary cost contributors, identified in Tables 6.1 through 6.8, are either labor-related or associated with the management and disposition of the spent fuel or radioactive waste. Program management (including security) is the largest single contributor to the overall cost. The magnitude of the expense is a function of both the size of the organization required to manage the decommissioning, as well as the duration of the program. It is assumed, for purposes of this analysis, that Xcel Energy will hire a contractor to manage the decommissioning labor force. The size and composition of the management organizations varies with the decommissioning phase and associated site activities. However, once the operating licenses are amended or terminated, the staff is substantially reduced for the conventional demolition and restoration of the site, and the long-term care of the spent fuel (for the DECON alternative).

As described in this report, the spent fuel pool will remain operational for a minimum of four years following the cessation of operations. The pool will be isolated and an independent spent fuel island created. This will allow

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decommissioning operations to proceed in and around the pool areas. Over the four-year period, the spent fuel will be packaged into transportable canisters for future loading into a DOE-provided transport cask or relocation to the ISFSI. The canisters will be stored in horizontal storage casks at the ISFSI until the DOE is able to receive them. Dry storage of the fuel provides additional flexibility in the event the DOE is not able to meet the current timetable for completing the transfer of assemblies to an off-site facility and minimizes the associated caretaking expenses.

The cost for waste disposal includes only those costs associated with the controlled disposition of the low-level radioactive waste generated from decontamination and dismantling activities, including plant equipment and components, structural material, filters, resins and dry-active waste. As described in Section 5, disposition of the majority of the low-level radioactive material requiring controlled disposal is at the Energy *Solutions* facility, with higher-activity waste sent to the WCS facility. Highly activated components, requiring additional isolation from the environment (GTCC), are packaged for geologic disposal. The cost of geologic disposal is based upon a cost equivalent for spent fuel.

A significant portion of the metallic waste is designated for additional processing and treatment at an off-site facility. Processing reduces the volume of material requiring controlled disposal through such techniques and processes as survey and sorting, decontamination, and volume reduction. The material that cannot be unconditionally released is packaged for controlled disposal at one of the currently operating facilities. The cost identified in the summary tables for processing is all-inclusive, incorporating the ultimate disposition of the material.

Removal costs reflect the labor-intensive nature of the decommissioning process, as well as the management controls required to ensure a safe and successful program. Decontamination and packaging costs also have a large labor component that is based upon prevailing wages. Non-radiological demolition is a natural extension of the decommissioning process. The methods employed in decontamination and dismantling are generally destructive and indiscriminate in inflicting collateral damage. With a work force mobilized to support decommissioning operations, non-radiological demolition can be an integrated activity and a logical expansion of the work being performed in the process of terminating the operating licenses.

The reported cost for transport includes the tariffs and surcharges associated with moving large components and/or overweight shielded casks overland, as well as the general expense, e.g., labor and fuel, of transporting material to the destinations identified in this report. For purposes of this analysis, material is moved overland by truck.

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Decontamination is used to reduce the plant's radiation fields and minimize worker exposure. Slightly contaminated material or material located within a contaminated area is sent to an off-site processing center, i.e., this analysis does not assume that contaminated plant components and equipment can be decontaminated for uncontrolled release in-situ. Centralized processing centers have proven to be a more economical means of handling the large volumes of material produced in the dismantling of a nuclear plant.

License termination survey costs are associated with the labor intensive and complex activity of verifying that contamination has been removed from the site to the levels specified by the regulating agency. This process involves a systematic survey of all remaining plant surface areas and surrounding environs, sampling, isotopic analysis, and documentation of the findings. The status of any plant components and materials not removed in the decommissioning process will also require confirmation and will add to the expense of surveying the facilities alone.

The remaining costs include allocations for heavy equipment and temporary services, as well as for other expenses such as regulatory fees and the premiums for nuclear insurance. While site operating costs are greatly reduced following the final cessation of plant operations, certain administrative functions do need to be maintained either at a basic functional or regulatory level.

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## TABLE 6.1 SCENARIO 1: DECON WITH 42 YEAR DFS DECOMMISSIONING COST ELEMENTS

Cost Element	Unit 1	Unit 2	Total	Percentage
Decontamination	12,109	19,308	31,417	1.6%
Removal	111,005	147,842	258,847	12.9%
Packaging	27,756	28,136	55,892	2.8%
Transportation	9,509	10,116	19,625	1.0%
Waste Disposal	75,656	79,069	154,725	7.7%
Off-site Waste Processing	26,049	30,811	56,860	2.8%
Program Management [1]	239,340	227,121	466,461	23.3%
Security	148,214	136,512	284,726	14.2%
Spent Fuel Pool Isolation	14,576	9,718	24,294	1.2%
Spent Fuel Storage (Direct Costs)				
[2]	114,819	111,649	226,467	11.3%
Insurance and Regulatory Fees	19,822	16,763	36,586	1.8%
Energy	10,742	9,033	19,775	1.0%
Characterization and Licensing				
Surveys	14,531	16,907	31,438	1.6%
Property Taxes	77,623	72,753	150,376	7.5%
Miscellaneous	7,729	7,430	15,159	0.8%
Railroad Track Maintenance	3,543	3,455	6,998	0.3%
Retention and Severance	26,985	26,985	53,970	2.7%
Security Modifications	5,000	5,000	10,000	0.5%
Prairie Island Indian Community				
Payments	51,745	50,219	101,964	5.1%
Total [2]	996,753	1,008,829	2,005,582	100.0%

Cost Element	Unit 1	Unit 2	Total	Percentage
NRC License Termination	595,962	590,962	1,186,924	59.2%
Spent Fuel Management	349,793	345,097	694,890	34.6%
Site Restoration	50,998	72,770	123,768	6.2%
Total [3]	996,753	1,008,829	2,005,582	100.0%

<sup>[1]</sup> Includes engineering

<sup>&</sup>lt;sup>[2]</sup> Includes costs for the dry storage system components, spent fuel loading and transfer, spent fuel pool O&M and EP fees, but excludes program management costs (staffing), security and other related costs

<sup>[3]</sup> Columns may not add due to rounding

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## TABLE 6.2 SCENARIO 2: DECON WITH 60 YEAR DFS DECOMMISSIONING COST ELEMENTS

Cost Element	Unit 1	Unit 2	Total	Percentage
Decontamination	12,109	19,308	31,417	1.5%
Removal	111,005	147,842	258,847	12.6%
Packaging	27,756	28,136	55,892	2.7%
Transportation	9,509	10,116	19,625	1.0%
Waste Disposal	75,656	79,069	154,725	7.6%
Off-site Waste Processing	26,049	30,811	56,860	2.8%
Program Management [1]	241,656	229,438	471,094	23.0%
Security	155,731	144,029	299,759	14.6%
Spent Fuel Pool Isolation	14,576	9,718	24,294	1.2%
Spent Fuel Storage (Direct Costs)				
[2]	116,766	113,596	230,362	11.2%
Insurance and Regulatory Fees	20,622	17,563	38,185	1.9%
Energy	10,742	9,033	19,775	1.0%
Characterization and Licensing				
Surveys	14,531	16,907	31,438	1.5%
Property Taxes	82,188	77,319	159,507	7.8%
Miscellaneous	7,729	7,430	15,159	0.7%
Railroad Track Maintenance	3,759	3,671	7,430	0.4%
Retention and Severance	26,985	26,985	53,970	2.6%
Security Modifications	5,000	5,000	10,000	0.5%
Prairie Island Indian Community				
Payments	55,496	53,970	109,466	5.3%
Total [3]	1,017,865	1,029,941	2,047,805	100.0%

Cost Element	Unit 1	Unit 2	Total	Percentage
NRC License Termination	595,962	590,962	1,186,924	58.0%
Spent Fuel Management	370,904	366,208	737,113	36.0%
Site Restoration	50,998	72,770	123,768	6.0%
Total [3]	1,017,865	1,029,941	2,047,805	100.0%

<sup>[1]</sup> Includes engineering

<sup>[2]</sup> Includes costs for the dry storage system components, spent fuel loading and transfer, spent fuel pool O&M and EP fees, but excludes program management costs (staffing), security and other related costs

<sup>[3]</sup> Columns may not add due to rounding

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## TABLE 6.3 SCENARIO 3: DECON WITH 100 YEAR DFS DECOMMISSIONING COST ELEMENTS

Cost Element	Unit 1	Unit 2	Total	Percentage
Decontamination	12,109	19,308	31,417	1.0%
Removal	111,707	148,543	260,249	7.9%
Packaging	27,756	28,136	55,892	1.7%
Transportation	9,509	10,116	19,625	0.6%
Waste Disposal	75,656	79,069	154,724	4.7%
Off-site Waste Processing	26,049	30,811	56,860	1.7%
Program Management [1]	323,909	311,690	635,599	19.4%
Security	255,921	244,219	500,140	15.2%
Spent Fuel Pool Isolation	14,576	9,718	24,294	0.7%
Spent Fuel Storage (Direct Costs)				
[2]	425,553	422,384	847,937	25.8%
Insurance and Regulatory Fees	31,282	28,223	59,505	1.8%
Energy	10,742	9,033	19,775	0.6%
Characterization and Licensing				
Surveys	14,531	16,907	31,438	1.0%
Property Taxes	143,057	138,187	281,244	8.6%
Miscellaneous	7,729	7,430	15,159	0.5%
Railroad Track Maintenance	6,637	6,549	13,185	0.4%
Retention and Severance	26,985	26,985	53,970	1.6%
Security Modifications	5,000	5,000	10,000	0.3%
Prairie Island Indian Community				
Payments	105,493	103,966	209,459	6.4%
Total [3]	1,634,199	1,646,275	3,280,474	100.0%

Cost Element	Unit 1	Unit 2	Total	Percentage
NRC License Termination	596,408	591,409	1,187,817	36.2%
Spent Fuel Management	985,833	981,137	1,966,970	60.0%
Site Restoration	51,958	73,730	125,688	3.8%
Total [3]	1,634,199	1,646,275	3,280,474	100.0%

<sup>[1]</sup> Includes engineering

<sup>[2]</sup> Includes costs for the dry storage system components, spent fuel loading and transfer, spent fuel pool O&M and EP fees, but excludes program management costs (staffing), security and other related costs

<sup>[3]</sup> Columns may not add due to rounding

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## **TABLE 6.4** SCENARIO 4: DECON WITH 200 YEAR DFS **DECOMMISSIONING COST ELEMENTS**

Cost Element	Unit 1	Unit 2	Total	Percentage
Decontamination	12,109	19,308	31,417	0.6%
Removal	111,707	148,543	260,249	4.7%
Packaging	27,756	28,136	55,892	1.0%
Transportation	9,509	10,116	19,625	0.4%
Waste Disposal	75,656	79,069	154,724	2.8%
Off-site Waste Processing	26,049	30,811	56,860	1.0%
Program Management [1]	468,903	456,684	925,587	16.6%
Security	506,407	494,705	1,001,112	18.0%
Spent Fuel Pool Isolation	14,576	9,718	24,294	0.4%
Spent Fuel Storage (Direct Costs)				
[2]	859,315	856,146	1,715,461	30.8%
Insurance and Regulatory Fees	57,933	54,874	112,807	2.0%
Energy	10,742	9,033	19,775	0.4%
Characterization and Licensing				
Surveys	14,531	16,907	31,438	0.6%
Property Taxes	295,229	290,360	585,589	10.5%
Miscellaneous	7,729	7,430	15,159	0.3%
Railroad Track Maintenance	13,831	13,743	27,575	0.5%
Retention and Severance	26,985	26,985	53,970	1.0%
Security Modifications	5,000	5,000	10,000	0.2%
Prairie Island Indian Community				
Payments	230,489	228,963	459,452	8.3%
Total [3]	2,774,456	2,786,532	5,560,987	100.0%

Cost Element	Unit 1	Unit 2	Total	Percentage
NRC License Termination	596,408	591,409	1,187,817	21.4%
Spent Fuel Management	2,126,089	2,121,393	4,247,483	76.4%
Site Restoration	51,958	73,730	125,688	2.3%
Total [3]	2,774,456	2,786,532	5,560,987	100.0%

<sup>[1]</sup> Includes engineering

Includes costs for the dry storage system components, spent fuel loading and transfer, spent fuel pool O&M and EP fees, but excludes program management costs (staffing), security and other related costs

Columns may not add due to rounding

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## **TABLE 6.5 SCENARIO 5: SAFSTOR WITH 42 YEAR DFS** DECOMMISSIONING COST ELEMENTS

Cost Element	Unit 1	Unit 2	Total	Percentage
Decontamination	8,262	17,629	25,891	1.0%
Removal	118,236	154,208	272,444	10.4%
Packaging	21,286	21,654	42,940	1.6%
Transportation	7,988	8,587	16,575	0.6%
Waste Disposal	59,926	62,040	121,966	4.7%
Off-site Waste Processing	26,624	31,387	58,012	2.2%
Program Management [1]	321,644	315,246	636,891	24.4%
Security	216,744	170,639	387,383	14.8%
Spent Fuel Pool Isolation	14,576	9,718	24,294	0.9%
Spent Fuel Storage (Direct Costs)				
[2]	109,664	106,495	216,159	8.3%
Insurance and Regulatory Fees	47,122	43,899	91,021	3.5%
Energy	21,571	21,262	42,833	1.6%
Characterization and Licensing				
Surveys	15,797	18,173	33,970	1.3%
Property Taxes	214,410	209,541	423,951	16.2%
Miscellaneous	18,316	22,688	41,004	1.6%
Railroad Track Maintenance	4,733	4,645	9,377	0.4%
Retention and Severance	26,985	26,985	53,970	2.1%
Security Modifications	5,000	5,000	10,000	0.4%
Prairie Island Indian Community				
Payments	51,745	50,219	101,964	3.9%
Total [3]	1,310,629	1,300,016	2,610,645	100.0%

Cost Element	Unit 1	Unit 2	Total	Percentage
NRC License Termination	970,442	944,187	1,914,629	73.3%
Spent Fuel Management	281,510	275,338	556,848	21.3%
Site Restoration	58,677	80,490	139,167	5.3%
Total [3]	1,310,629	1,300,016	2,610,645	100.0%

Includes engineering

Includes costs for the dry storage system components, spent fuel loading and transfer, spent fuel pool O&M and EP fees, but excludes program management costs (staffing), security and other related costs

Columns may not add due to rounding

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## TABLE 6.6 SCENARIO 6: SAFSTOR WITH 60 YEAR DFS DECOMMISSIONING COST ELEMENTS

Cost Element	Unit 1	Unit 2	Total	Percentage
Decontamination	8,262	17,629	25,891	1.0%
Removal	118,240	154,230	272,471	10.3%
Packaging	21,286	21,654	42,940	1.6%
Transportation	7,988	8,588	16,575	0.6%
Waste Disposal	59,926	62,042	121,968	4.6%
Off-site Waste Processing	26,624	31,387	58,012	2.2%
Program Management [1]	322,356	318,247	640,604	24.2%
Security	218,124	180,276	398,401	15.1%
Spent Fuel Pool Isolation	14,576	9,718	24,294	0.9%
Spent Fuel Storage (Direct Costs)				
[2]	111,541	108,372	219,913	8.3%
Insurance and Regulatory Fees	47,872	44,607	92,479	3.5%
Energy	21,571	21,262	42,833	1.6%
Characterization and Licensing				
Surveys	15,797	18,173	33,970	1.3%
Property Taxes	218,698	213,829	432,527	16.3%
Miscellaneous	18,316	22,688	41,004	1.5%
Railroad Track Maintenance	4,733	4,645	9,377	0.4%
Retention and Severance	26,985	26,985	53,970	2.0%
Security Modifications	5,000	5,000	10,000	0.4%
Prairie Island Indian Community				
Payments	55,496	53,970	109,466	4.1%
Total [3]	1,323,393	1,323,304	2,646,697	100.0%

Cost Element	Unit 1	Unit 2	Total	Percentage
NRC License Termination	968,306	952,576	1,920,882	72.6%
Spent Fuel Management	296,410	290,238	586,648	22.2%
Site Restoration	58,677	80,490	139,167	5.3%
Total [3]	1,323,393	1,323,304	2,646,697	100.0%

<sup>[1]</sup> Includes engineering

<sup>&</sup>lt;sup>[2]</sup> Includes costs for the dry storage system components, spent fuel loading and transfer, spent fuel pool O&M and EP fees, but excludes program management costs (staffing), security and other related costs

<sup>[3]</sup> Columns may not add due to rounding

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## TABLE 6.7 SCENARIO 7: SAFSTOR WITH 100 YEAR DFS DECOMMISSIONING COST ELEMENTS

Cost Element	Unit 1	Unit 2	Total	Percentage
Decontamination	8,262	17,447	25,709	0.7%
Removal	119,002	155,038	274,040	7.3%
Packaging	25,596	25,964	51,560	1.4%
Transportation	7,988	8,588	16,576	0.4%
Waste Disposal	59,928	62,049	121,977	3.3%
Off-site Waste Processing	26,624	31,387	58,012	1.5%
Program Management [1]	359,684	363,609	723,293	19.3%
Security	279,245	272,250	551,495	14.7%
Spent Fuel Pool Isolation	14,576	9,718	24,294	0.6%
Spent Fuel Storage (Direct Costs)				
[2]	420,010	416,736	836,746	22.3%
Insurance and Regulatory Fees	57,899	54,267	112,167	3.0%
Energy	21,590	21,282	42,872	1.1%
Characterization and Licensing				
Surveys	15,797	18,173	33,970	0.9%
Property Taxes	278,005	273,136	551,141	14.7%
Miscellaneous	18,316	22,688	41,004	1.1%
Railroad Track Maintenance	6,373	6,285	12,659	0.3%
Retention and Severance	26,985	26,985	53,970	1.4%
Security Modifications	5,000	5,000	10,000	0.3%
Prairie Island Indian Community				
Payments	105,493	103,966	209,459	5.6%
Total [3]	1,856,374	1,894,569	3,750,943	100.0%

Cost Element	Unit 1	Unit 2	Total	Percentage
NRC License Termination	963,420	983,908	1,947,327	51.9%
Spent Fuel Management	836,113	832,007	1,668,119	44.5%
Site Restoration	56,842	78,655	135,496	3.6%
Total [3]	1,856,374	1,894,569	3,750,943	100.0%

<sup>[1]</sup> Includes engineering costs

<sup>&</sup>lt;sup>[2]</sup> Includes costs for the dry storage system components, spent fuel loading and transfer, spent fuel pool O&M and EP fees, but excludes program management costs (staffing), security and other related costs

<sup>[3]</sup> Columns may not add due to rounding

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## **TABLE 6.8** SCENARIO 8: SAFSTOR WITH 200 YEAR DFS **DECOMMISSIONING COST ELEMENTS**

Cost Element	Unit 1	Unit 2	Total	Percentage
Decontamination	8,262	17,447	25,709	0.4%
Removal	119,002	155,038	274,040	4.6%
Packaging	25,596	25,964	51,560	0.9%
Transportation	7,988	8,588	16,576	0.3%
Waste Disposal	59,928	62,049	121,977	2.0%
Off-site Waste Processing	26,624	31,387	58,012	1.0%
Program Management [1]	504,679	508,603	1,013,282	17.0%
Security	501,598	494,603	996,201	16.7%
Spent Fuel Pool Isolation	14,576	9,718	24,294	0.4%
Spent Fuel Storage (Direct Costs)				
[2]	853,529	850,323	1,703,853	28.5%
Insurance and Regulatory Fees	84,550	80,918	165,469	2.8%
Energy	21,590	21,282	42,872	0.7%
Characterization and Licensing				
Surveys	15,797	18,173	33,970	0.6%
Property Taxes	430,177	425,308	855,485	14.3%
Miscellaneous	18,316	22,688	41,004	0.7%
Railroad Track Maintenance	13,568	13,480	27,048	0.5%
Retention and Severance	26,985	26,985	53,970	0.9%
Security Modifications	5,000	5,000	10,000	0.2%
Prairie Island Indian Community				
Payments	230,489	228,963	459,452	7.7%
Total [3]	2,968,256	3,006,518	5,974,774	100.0%

Cost Element	Unit 1	Unit 2	Total	Percentage
NRC License Termination	963,419	983,907	1,947,327	32.6%
Spent Fuel Management	1,947,994	1,943,956	3,891,950	65.1%
Site Restoration	56,842	78,655	135,496	2.3%
Total [3]	2,968,256	3,006,518	5,974,774	100.0%

<sup>[1]</sup> Includes engineering costs

Includes costs for the dry storage system components, spent fuel loading and transfer, spent fuel pool O&M and EP fees, but excludes program management costs (staffing), security and other related costs

<sup>[3]</sup> Columns may not add due to rounding

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### APPENDIX A

UNIT COST FACTOR DEVELOPMENT

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## APPENDIX A UNIT COST FACTOR DEVELOPMENT

Example: Unit Factor for Removal of Contaminated Heat Exchanger < 3,000 lbs.

#### 1. SCOPE

Heat exchangers weighing < 3,000 lbs. will be removed in one piece using a crane or small hoist. They will be disconnected from the inlet and outlet piping. The heat exchanger will be sent to the waste processing area.

#### 2. CALCULATIONS

Act ID	Activity Description	Activity Duration (minutes)	Critical Duration (minutes)*
a	Remove insulation	60	(b)
b	Mount pipe cutters	60	60
$\mathbf{c}$	Install contamination controls	20	(b)
d	Disconnect inlet and outlet lines	60	60
e	Cap openings	20	(d)
$\mathbf{f}$	Rig for removal	30	30
$\mathbf{g}$	Unbolt from mounts	30	30
h	Remove contamination controls	15	15
i	Remove, wrap, send to waste processing area	<u>60</u>	<u>60</u>
	Totals (Activity/Critical)	355	255
Dura	tion adjustment(s):		
+ Re	spiratory protection adjustment (50 of critical durati	on)	128
+ Radiation/ALARA adjustment (37.1 of critical duration)			<u>95</u>
Adjusted work duration		478	
+ Pr	otective clothing adjustment (30 of adjusted duration	)	<u>143</u>
	uctive work duration	<del>'</del> /	$\frac{113}{621}$
+ Wo	ork break adjustment (8.33 of productive duration)		<u>52</u>
Total	work duration (minutes)		673

\*\*\* Total duration = 11.217 hr \*\*\*

<sup>\*</sup> alpha designators indicate activities that can be performed in parallel

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### APPENDIX A

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#### LABOR REQUIRED 3.

Crew	Number	Duration (hours)	Rate (\$/hr)	Cost
Laborers	3.00	11.217	\$61.19	\$2,059.10
Craftsmen	2.00	11.217	\$76.98	\$1,726.97
Foreman	1.00	11.217	\$80.56	\$903.64
General Foreman	0.25	11.217	\$82.83	\$232.28
Fire Watch	0.05	11.217	\$61.19	\$34.32
Health Physics Technician	1.00	11.217	\$53.89	<u>\$604.48</u>
Total Labor Cost				\$5,560.79
4. EQUIPMENT & CON	SUMABLES	COSTS		
Equipment Costs none				none
Consumables/Materials Costs				
• Universal Sorbent 50 @	0 \$0 63 sa ft. {1}			\$31.50
• Tarpaulins (oil resistant/fire retardant) 50 @ \$0.47/sq ft (2)			\$23.50	
• Gas torch consumables 1 @ \$20.79/hr x 1 hr (3)			\$20.79	
Subtotal cost of equipment and materials			\$75.79	
Overhead & profit on equipment and materials @ 16.88%			\$12.7 <u>9</u>	
<u></u>				
Total costs, equipment & material			\$88.58	
TOTAL COST:				
Removal of contaminat	ed heat exch	anger <3000 j	pounds:	\$5,649.37
Total labor cost:				\$5,560.79
Total equipment/material costs:			\$88.58	
Total craft labor man-hours required per unit: 81.88				81.88

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

#### 5. NOTES AND REFERENCES

- Work difficulty factors were developed in conjunction with the Atomic Industrial Forum's (now NEI) program to standardize nuclear decommissioning cost estimates and are delineated in Volume 1, Chapter 5 of the "Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates," AIF/NESP-036, May 1986.
- References for equipment & consumables costs:
  - 1. <u>www.mcmaster.com</u> online catalog, McMaster Carr Spill Control (7193T88)
  - 2. R.S. Means (2020) Division 01 56, Section 13.60-0600, page 23
  - 3. R.S. Means (2020) Division 01 54 33, Section 40-6360, page 736
- Material and consumable costs were adjusted using the regional indices for Minneapolis, Minnesota.

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Xcel Energy

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### APPENDIX B

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### APPENDIX B

Unit Cost Factor	Cost/Unit
Removal of clean instrument and sampling tubing, \$/linear foot	0.66
Removal of clean pipe 0.25 to 2 inches diameter, \$/linear foot	7.12
Removal of clean pipe >2 to 4 inches diameter, \$/linear foot	10.11
Removal of clean pipe >4 to 8 inches diameter, \$/linear foot	19.57
Removal of clean pipe >8 to 14 inches diameter, \$/linear foot	37.91
Removal of clean pipe >14 to 20 inches diameter, \$/linear foot	49.31
Removal of clean pipe >20 to 36 inches diameter, \$/linear foot	72.55
Removal of clean pipe >36 inches diameter, \$/linear foot	86.19
Removal of clean valve >2 to 4 inches	129.76
Removal of clean valve >4 to 8 inches	195.71
Removal of clean valve >8 to 14 inches	379.11
Removal of clean valve >14 to 20 inches	493.15
Removal of clean valve >20 to 36 inches	725.51
Removal of clean valve >36 inches	861.88
Removal of clean pipe hanger for small bore piping	44.86
Removal of clean pipe hanger for large bore piping	160.36
Removal of clean pump, <300 pound	330.75
Removal of clean pump, 300-1000 pound	912.91
Removal of clean pump, 1000-10,000 pound	3,610.60
Removal of clean pump, >10,000 pound	6,985.07
Removal of clean pump motor, 300-1000 pound	381.58
Removal of clean pump motor, 1000-10,000 pound	1,500.12
Removal of clean pump motor, >10,000 pound	3,375.27
Removal of clean heat exchanger <3000 pound	1,938.88
Removal of clean heat exchanger >3000 pound	4,883.83
Removal of clean feedwater heater/deaerator	13,767.02
Removal of clean moisture separator/reheater	28,301.27
Removal of clean tank, <300 gallons	425.41
Removal of clean tank, 300-3000 gallon	1,340.19
Removal of clean tank, >3000 gallons, \$/square foot surface area	11.21

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### APPENDIX B

Unit Cost Factor	Cost/Unit
Removal of clean electrical equipment, <300 pound	179.24
Removal of clean electrical equipment, 300-1000 pound	621.24
Removal of clean electrical equipment, 1000-10,000 pound	1,242.49
Removal of clean electrical equipment, >10,000 pound	2,945.34
Removal of clean electrical transformer < 30 tons	2,045.49
Removal of clean electrical transformer > 30 tons	5,890.69
Removal of clean standby diesel generator, <100 kW	2,089.30
Removal of clean standby diesel generator, 100 kW to 1 MW	4,663.46
Removal of clean standby diesel generator, >1 MW	9,654.30
Removal of clean electrical cable tray, \$/linear foot	16.85
Removal of clean electrical conduit, \$/linear foot	7.36
Removal of clean mechanical equipment, <300 pound	179.24
Removal of clean mechanical equipment, 300-1000 pound	621.24
Removal of clean mechanical equipment, 1000-10,000 pound	1,242.49
Removal of clean mechanical equipment, >10,000 pound	2,945.34
Removal of clean HVAC equipment, <300 pound	216.74
Removal of clean HVAC equipment, 300-1000 pound	746.48
Removal of clean HVAC equipment, 1000-10,000 pound	1,487.73
Removal of clean HVAC equipment, >10,000 pound	2,945.34
Removal of clean HVAC ductwork, \$/pound	0.70
Removal of contaminated instrument and sampling tubing, \$/linear foot	1.95
Removal of contaminated pipe 0.25 to 2 inches diameter, \$/linear foot	27.83
Removal of contaminated pipe >2 to 4 inches diameter, \$/linear foot	47.82
Removal of contaminated pipe >4 to 8 inches diameter, \$/linear foot	74.97
Removal of contaminated pipe >8 to 14 inches diameter, \$/linear foot	148.05
Removal of contaminated pipe >14 to 20 inches diameter, \$/linear foot	177.91
Removal of contaminated pipe >20 to 36 inches diameter, \$/linear foot	246.21
Removal of contaminated pipe >36 inches diameter, \$/linear foot	290.98
Removal of contaminated valve >2 to 4 inches	566.48
Removal of contaminated valve >4 to 8 inches	683.58

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### APPENDIX B

Unit Cost Factor	Cost/Unit
Removal of contaminated valve >8 to 14 inches	1,416.26
Removal of contaminated valve >14 to 20 inches	1,800.59
Removal of contaminated valve >20 to 36 inches	2,397.86
Removal of contaminated valve >36 inches	2,845.51
Removal of contaminated pipe hanger for small bore piping	185.80
Removal of contaminated pipe hanger for large bore piping	626.86
Removal of contaminated pump, <300 pound	1,220.24
Removal of contaminated pump, 300-1000 pound	2,838.77
Removal of contaminated pump, 1000-10,000 pound	9,387.15
Removal of contaminated pump, >10,000 pound	22,866.23
Removal of contaminated pump motor, 300-1000 pound	1,207.55
Removal of contaminated pump motor, 1000-10,000 pound	3,819.10
Removal of contaminated pump motor, >10,000 pound	8,574.33
Removal of contaminated heat exchanger <3000 pound	5,649.37
Removal of contaminated heat exchanger >3000 pound	16,380.03
Removal of contaminated tank, <300 gallons	2,028.43
Removal of contaminated tank, >300 gallons, \$/square foot	39.80
Removal of contaminated electrical equipment, <300 pound	945.74
Removal of contaminated electrical equipment, 300-1000 pound	2,314.59
Removal of contaminated electrical equipment, 1000-10,000 pound	4,458.19
Removal of contaminated electrical equipment, >10,000 pound	8,760.92
Removal of contaminated electrical cable tray, \$/linear foot	45.77
Removal of contaminated electrical conduit, \$/linear foot	22.38
Removal of contaminated mechanical equipment, <300 pound	1,052.10
Removal of contaminated mechanical equipment, 300-1000 pound	2,556.07
Removal of contaminated mechanical equipment, 1000-10,000 pound	4,915.22
Removal of contaminated mechanical equipment, >10,000 pound	8,760.92
Removal of contaminated HVAC equipment, <300 pound	1,052.10
Removal of contaminated HVAC equipment, 300-1000 pound	$2,\!556.07$
Removal of contaminated HVAC equipment, 1000-10,000 pound	4,915.22

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### APPENDIX B

Unit Cost Factor	Cost/Unit
Removal of contaminated HVAC equipment, >10,000 pound	8,760.92
Removal of contaminated HVAC ductwork, \$/pound	2.68
Removal/plasma arc cut of contaminated thin metal components, \$/linear in	
Additional decontamination of surface by washing, \$/square foot	10.44
Additional decontamination of surfaces by hydrolasing, \$/square foot	45.13
Decontamination rig hook up and flush, \$/ 250 foot length	8,868.24
Chemical flush of components/systems, \$/gallon	21.45
Removal of clean standard reinforced concrete, \$/cubic yard	79.61
Removal of grade slab concrete, \$/cubic yard	90.55
Removal of clean concrete floors, \$/cubic yard	462.49
Removal of sections of clean concrete floors, \$/cubic yard	1,391.41
Removal of clean heavily rein concrete w/#9 rebar, \$/cubic yard	115.01
Removal of contaminated heavily rein concrete w/#9 rebar, \$/cubic yard	2,710.44
Removal of clean heavily rein concrete w/#18 rebar, \$/cubic yard	155.87
Removal of contaminated heavily rein concrete w/#18 rebar, \$/cubic yard	3,585.77
Removal heavily rein concrete w/#18 rebar & steel embedments, \$/cubic yard	d 569.09
Removal of below-grade suspended floors, \$/cubic yard	218.61
Removal of clean monolithic concrete structures, \$/cubic yard	1,160.53
Removal of contaminated monolithic concrete structures, \$/cubic yard	2,698.05
Removal of clean foundation concrete, \$/cubic yard	910.88
Removal of contaminated foundation concrete, \$/cubic yard	2,513.39
Explosive demolition of bulk concrete, \$/cubic yard	61.22
Removal of clean hollow masonry block wall, \$/cubic yard	27.85
Removal of contaminated hollow masonry block wall, \$/cubic yard	72.43
Removal of clean solid masonry block wall, \$/cubic yard	27.85
Removal of contaminated solid masonry block wall, \$/cubic yard	72.43
Backfill of below-grade voids, \$/cubic yard	36.73
Removal of subterranean tunnels/voids, \$/linear foot	143.29
Placement of concrete for below-grade voids, \$/cubic yard	142.84
Excavation of clean material, \$/cubic yard	3.38

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### APPENDIX B

Unit Cost Factor	Cost/Unit
Excavation of contaminated material, \$/cubic yard	48.85
Removal of clean concrete rubble (tipping fee included), \$/cubic yard	28.06
Removal of contaminated concrete rubble, \$/cubic yard	30.63
Removal of building by volume, \$/cubic foot	0.35
Removal of clean building metal siding, \$/square foot	1.77
Removal of contaminated building metal siding, \$/square foot	5.62
Removal of standard asphalt roofing, \$/square foot	3.11
Removal of transite panels, \$/square foot	2.87
Scarifying contaminated concrete surfaces (drill & spall), \$/square foot	15.31
Scabbling contaminated concrete floors, \$/square foot	9.92
Scabbling contaminated concrete walls, \$/square foot	26.57
Scabbling contaminated ceilings, \$/square foot	91.53
Scabbling structural steel, \$/square foot	7.86
Removal of clean overhead crane/monorail < 10 ton capacity	863.80
Removal of contaminated overhead crane/monorail < 10 ton capacity	2,333.62
Removal of clean overhead crane/monorail >10-50 ton capacity	2,073.11
Removal of contaminated overhead crane/monorail >10-50 ton capacity	5,599.73
Removal of polar crane > 50 ton capacity	8,638.20
Removal of gantry crane > 50 ton capacity	32,889.62
Removal of structural steel, \$/pound	0.25
Removal of clean steel floor grating, \$/square foot	6.20
Removal of contaminated steel floor grating, \$/square foot	17.35
Removal of clean free standing steel liner, \$/square foot	16.81
Removal of contaminated free standing steel liner, \$/square foot	46.59
Removal of clean concrete-anchored steel liner, \$/square foot	8.40
Removal of contaminated concrete-anchored steel liner, \$/square foot	54.30
Placement of scaffolding in clean areas, \$/square foot	18.98
Placement of scaffolding in contaminated areas, \$/square foot	31.88
Landscaping with topsoil, \$/acre	25,606.43
Cost of CPC B-88 LSA box & preparation for use	2,185.35

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#### APPENDIX B

### UNIT COST FACTOR LISTING (Power Block Structures Only)

Unit Cost Factor	Cost/Unit
Cost of CPC B-25 LSA box & preparation for use	1,785.70
Cost of CPC B-12V 12 gauge LSA box & preparation for use	1,711.40
Cost of CPC B-144 LSA box & preparation for use	10,802.18
Cost of LSA drum & preparation for use	260.77
Cost of cask liner for CNSI 8 120A cask (resins)	12,915.06
Cost of cask liner for CNSI 8 120A cask (filters)	9,404.10
Decontamination of surfaces with vacuuming, \$/square foot	1.04

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#### APPENDIX C

#### **DETAILED COST ANALYSIS**

#### **SCENARIO 1: DECON with 42 Year DFS**

	Page
Prairie Island Nuclear Generating Plant, Unit 1	
Prairie Island Nuclear Generating Plant, Unit 2	

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Table C-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(Th	ousanas e	of 2020 Dollaı	:s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
	1a - Shutdown through Transition	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	ou. Peet	cu. Feet	ou. reet	cu. Feet	ou. Peet	Wt., Los.	Mannours	Mannours
1a.1.1	Direct Decommissioning Activities Prepare preliminary decommissioning cost	-		-	-	-	_	167	25	192	192	-	-	-	_	-	-	-	_	-	1,300
1a.1.2	Notification of Cessation of Operations									a											,
1a.1.3	Remove fuel & source material									n/a											
1a.1.4 1a.1.5	Notification of Permanent Defueling Deactivate plant systems & process waste									a a											
1a.1.6	Prepare and submit PSDAR	_	_	-	-	_	_	257	39	296	296	_	-	_	_	_	-	_	-	_	2,000
1a.1.7	Review plant dwgs & specs.	-	-	-	-	-	-	591	89	680	680	-	-	-	-	-	-	-	-	-	4,600
1a.1.8	Perform detailed rad survey									a											
1a.1.9 1a.1.10	Estimate by-product inventory End product description	-	-	-	-	-	-	129 129	19 19	148 148	148 148	-	-	-	-	-	-	-	-	-	1,000 1,000
1a.1.10 1a.1.11	Detailed by-product inventory	-	-	-	-	-	-	167	25	192	192	-	-	-	-	-	-	-	-	-	1,300
1a.1.12	Define major work sequence	-	-	-	-	-	-	964	145	1,108	1,108	-	-	-	-	-	-	-	-	-	7,500
1a.1.13	Perform SER and EA	-	-	-	-	-	-	398	60	458	458	-	-	-	-	-	-	-	-	-	3,100
1a.1.14	Prepare/submit Defueled Technical Specifications	-	-	-	-	-	-	964 643	145 96	1,108 739	1,108 739	-	-	-	-	-	-	-	-	-	7,500
1a.1.15 1a.1.16	Perform Site-Specific Cost Study Prepare/submit Irradiated Fuel Management Plan	-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	5,000 1,000
Activity S	Specifications																				
1a.1.17.1	Plant & temporary facilities	-	-	-	-	-	-	632	95	727	654	-	73	-	-	-	-	-	-	-	4,920
	Plant systems	-	-	-	-	-	-	536	80	616	554	-	62	-	-	-	-	-	-	-	4,167
	NSSS Decontamination Flush Reactor internals	-	-	-	-	-	-	64	10	74	74 1,049	-	-	-	-	-	-	-	-	-	500
	Reactor internals Reactor vessel	-	-	-	-	_	-	912 835	137 125	1,049 961	961	-	-	-	_	-	-	-	-	-	7,100 6,500
	Biological shield	-	-	-	-	_	-	64	10	74	74	-	-	-	-	-	-	-	-	_	500
1a.1.17.7	Steam generators	-	-	-	-	-	-	401	60	461	461	-	-	-	-	-	-	-	-	-	3,120
	Reinforced concrete	-	-	-	-	-	-	206	31	236	118	-	118	-	-	-	-	-	-	-	1,600
	Main Turbine O Main Condensers	-	-	-	=	-	-	51 51	8 8	59 59	-	-	59 59	-	-	-	-	-	-	-	400 400
	1 Plant structures & buildings	-	-	-	-	-	-	401	60	461	231	-	231	-	-		-	-	-	-	3,120
	2 Waste management	-	-	-	-	-	-	591	89	680	680	-	-	-	-	-	-	-	-	-	4,600
	3 Facility & site closeout	-	-	-	-	-	-	116	17	133	67	-	67	-	-	-	-	-	-	-	900
1a.1.17	Total	=	-	-	-	-	-	4,861	729	5,591	4,923	-	668	-	-	-	-	-	-	-	37,827
	& Site Preparations																				
1a.1.18 1a.1.19	Prepare dismantling sequence Plant prep. & temp. svces	-	-	-	-	-	-	308 3,500	46 525	355 $4,025$	355 4,025	-	-	-	-	-	-	-	-	-	2,400
1a.1.19 1a.1.20	Design water clean-up system	-	-	-	-	-	-	3,500	525 27	4,025	4,025	-	-	-	-	-	-	-	-	-	1,400
1a.1.21	Rigging/Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	_	-	2,400	360	2,760	2,760	-	-	-	-	-	-	-	-	_	1,400
1a.1.22	Procure casks/liners & containers	-	-	-	-	-	-	158	24	182	182	-	-	-	-	-	-	-	-	-	1,230
1a.1	Subtotal Period 1a Activity Costs	-	-	-	-	Ē	-	15,945	2,392	18,336	17,669	-	668	Ē	-	-	Ē	-	Ē	-	78,157
	Additional Costs							12,675	1.001	14.550	14,576										
1a.2.1 1a.2	Spent Fuel Pool Isolation Subtotal Period 1a Additional Costs	-	-	-	-	-	-	12,675	1,901 1,901	$14,576 \\ 14,576$	14,576	-		-	-	-	-	-	-	-	-
Period 1a	Collateral Costs																				
1a.3.1	Prairie Island Indian Community Payments	-	-	-	-	-	-	1,249	-	1,249	-	1,249	-	-	-	-	-	-	-	-	-
1a.3	Subtotal Period 1a Collateral Costs	Ē	-	-	-	-	-	1,249	-	1,249	-	1,249	-	-	-	-	-	-	-	-	-
	Period-Dependent Costs																				
1a.4.1	Insurance	-	-	-	-	-	-	1,660	166 362	1,826 3,985	1,826 3,985	-	-	-	-	-	-	-	-	-	-
1a.4.2 1a.4.3	Property taxes Health physics supplies	-	614		-	-	-	3,623	153	3,985 767	3,985 767	-	-	-	-	-	-	-	-	-	-
1a.4.4	Heavy equipment rental	-	753		-	_	-	-	113	866	866	-	-	-	-	-	-	-	-	_	-
1a.4.5	Disposal of DAW generated	-	-	12	2 .	-	50		14	82	82	-	-	-	610	-	-	-	12,190	20	=
1a.4.6	Plant energy budget	=	-	-	Ē	-	-	1,621	243	1,864	1,864	-	-	-	-	-	-	-	-	-	Ē
1a.4.7 1a.4.8	NRC Fees Emergency Planning Fees	- -		-	-	-	-	1,137 $2,174$	114 217	1,251 2,392	1,251	2,392	-	-	-	-	-	-	-	-	=
1a.4.6 1a.4.9	Fixed Overhead	-		-	-	-		1,440	217	1,656	1,656	2,392	-	-	-			-	-	-	-
1a.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	422	63	486	-	486	-	-	-	-	-	-	-	-	-
1a.4.11	ISFSI Operating Costs	-	-	-	-	-	-	56	8	64	-	64	-	-	-	-	-	-	-	-	-
1a.4.12 1a.4.13	Railroad Track Maintenance Security Staff Cost	-	-	-	-	-	-	63 8.328	9 1,249	72 9,577	72 9,577	-	-	-	-	-	-	-	-	-	122,720
1a.4.13 1a.4.14	Utility Staff Cost	-		-	-	-	-	26,931	4,040	30,971	30,971	-	-	-	-	-	-	-	-	-	422,240
								_0,001	1,040	,1	00,0.1										,0

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Table C-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(		of 2020 Dollar	-/											
I						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity		Decon	Removal		Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contracto
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhour
1a.4	Subtotal Period 1a Period-Dependent Costs	-	1,367	12	5	-	50	47,456	6,970	55,860	52,918	2,942	-	-	610	-	-	-	12,190	20	544,96
1a.0	TOTAL PERIOD 1a COST	-	1,367	12	5	-	50	77,325	11,263	90,022	85,163	4,191	668	-	610	-	-	-	12,190	20	623,11
PERIOD	0 1b - Decommissioning Preparations																				
Period 1b	Direct Decommissioning Activities																				
Detailed	Work Procedures																				
	Plant systems	-	-	-	-	-	-	608	91	700	630	-	70	-	-	-	-	-	-	-	4,7
	NSSS Decontamination Flush	-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	1,0
	Reactor internals	-	-	-	-	-	-	321	48	369	369	-	-	-	-	-	-	-	-	-	2,5
	Remaining buildings	-	-	-	-	-	-	174	26	200	50	-	150	-	-	-	-	-	-	-	1,3
	CRD cooling assembly	-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	1,0
1b.1.1.6	CRD housings & ICI tubes Incore instrumentation	-	-	-	-	-	-	129 129	19 19	148 148	148 148	-	-	-	-	-	-	-	-	-	1,0 1,0
1b.1.1.7 1b.1.1.8			-	-	-	-		467	70	537	537	-	-	-	-	-	-	-	-	-	3,6
1b.1.1.9		-	-	-	_	-	-	154	23	177	89	_	89	_	_	-	-	_	_	_	1,20
	Missile shields	-	-	-	-	-	-	58	9	67	67	-	-	-	-	-	-	-	-	-	48
1b.1.1.11	Biological shield	-	-	-	-	-	-	154	23	177	177	-	-	-	-	-	-	-	-	-	1,20
	Steam generators	-	-	-	-	-	-	591	89	680	680	-	-	-	-	-	-	-	-	-	4,60
	Reinforced concrete	-	-	-	-	-	-	129	19	148	74	-	74	-	-	-	-	-	-	-	1,00
	Main Turbine	-	-	-	-	-	-	200	30	231	-	-	231	-	-	-	-	-	-	-	1,56
	Main Condensers	-	-	-	-	-	-	200	30	231	-	-	231	-	-	-	-	-	-	-	1,56
	Auxiliary building Reactor building	-	-	-	-	-	-	351 351	53 53	403 403	363 363	-	40 40	-	-	-	-	-	-	-	2,73 2,73
1b.1.1.17 1b.1.1	Total	-	-	-	-		-	4,272	641	4,913	3,989	-	924	-	-	-	-	-	-	-	33,24
1b.1.2	Decon primary loop	572							286	859	859	_	_	_	_			_	_	1,067	-
1b.1	Subtotal Period 1b Activity Costs	572		-	-	-	-	4,272	927	5,772	4,848	-	924	-	-	-	-	-	-	1,067	
	Additional Costs																				
1b.2.1	Site Characterization	-	-	-			-	3,520	1,056	4,576	4,576	-	-		-	-	-	-		21,020	
1b.2.2	Mixed/Hazardous Waste	-	0.500	353			1 000	-	76	702	702	-	-	6,132		-	-	-	351,977	2,348	
1b.2.3 1b.2	Asbestos Abatement Subtotal Period 1b Additional Costs	-	2,526 2,526			178	1,369 1,369	3,520	996 2,129	5,044 $10,321$	5,044 10,321	-	-	6,132	12,843 12,843	-	-	-	166,959 518,936	20,907 $44,275$	
Period 1h	o Collateral Costs																				
1b.3.1	Decon equipment	1,055	-	-	-	-	-	-	158	1,213	1,213	-	-	-	-	-	-	_	_	-	-
1b.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-
1b.3.3	Process decommissioning water waste	25	-	16		-	66	-	35	172	172	-	-	-	152	-	-	-	9,127	30	
1b.3.4	Process decommissioning chemical flush waste	2		61	199	-	3,889	-	1,009	5,159	5,159	-	-	-	-	588	-	-	62,689	110	-
1b.3.5	Small tool allowance	•	36		-	-	-	-	5	42	42	-	-	-	-	-	-	-	-	-	-
1b.3.6	Pipe cutting equipment	- 0.104	1,200	-	-	-	-	-	180	1,380	1,380	-	-	-	-	-	-	-	-	-	-
1b.3.7 1b.3.8	Decon rig Spent Fuel Capital and Transfer	2,104	-	-	-	-	-	163	316 25	2,419 188	2,419	188	-	-	-	-	-	-	-	-	-
1b.3.9	Retention and Severance	-	-	-	-	-	-	1,032	155	1,187	1,187	100	-	-	-	-	-	-	-	-	-
1b.3.10	Prairie Island Indian Community Payments	-	-	-	-	_	-	623	-	623	- 1,101	623	_	_	-	-	-	_	_	-	_
1b.3	Subtotal Period 1b Collateral Costs	3,185	1,236	77	228	-	3,955	3,082	2,072	13,836	13,025	811	-	-	152	588	-	-	71,815	140	-
	Period-Dependent Costs																				
1b.4.1	Decon supplies	38		-	-	-	-	- 000	9	47	47	-	-	-	-	•	-	-	-	-	-
1b.4.2	Insurance	-	-	-	-	-	-	828	83	910 1,987	910 1,987	-	-	-	-	-	-	-	-	-	-
1b.4.3 1b.4.4	Property taxes Health physics supplies	-	475	-	-	-	_	1,806	181 119	1,987 594	1,987 594	-	-	-	_		-	-	-	-	-
1b.4.4 1b.4.5	Heavy equipment rental	-	475 375		-	-	-	-	56	432	432	-	-	-	-	-	-	-	-	-	-
1b.4.6	Disposal of DAW generated	-	-	7	3	_	29	-	8	48	48	-	-	-	356	-	-	-	7,122	12	_
1b.4.7	Plant energy budget	=	-	- '	-	-	-	1,617	243	1,859	1,859	-	-	-	-	-	-	-	-,		-
1b.4.8	NRC Fees	-	-	-	-	-	-	323	32	355	355	-	-	-	-	-	-	-	-	-	-
1b.4.9	Emergency Planning Fees	-	-	-	-	-	-	1,084	108	1,193	-	1,193	-	-	-	-	-	-	-	-	-
1b.4.10	Fixed Overhead	-	-	-	-	-	-	718	108	826	826	-	-	-	-	-	-	-	-	-	-
1b.4.11		-	-	-	-	-	-	211	32	242	-	242	-	-	-	-	-	-	-	-	-
1b.4.12	ISFSI Operating Costs	-	-	-	-	-	-	28	4	32	-	32	-	-	-	-	-	-	-	-	-
1b.4.13	Railroad Track Maintenance	-	-	-	-	-	-	31	5	36	36	-	-	-	-	•	-	-	-	-	- 01 10
1b.4.14	Security Staff Cost	-	-	-	-	-	-	4,153	623	4,775	4,775	-	-	-	-	-	-	-	-	-	61,19 63,26
1b.4.15	DOC Staff Cost Utility Staff Cost	-	-	-	-	-	-	5,846 $13,505$	877 2,026	6,723 15,531	6,723 15,531	-	-	-	-	-	-	-	-	-	211,57

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Table C-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(1110	ousanus o	i 2020 Dollar	5)											
Activi Inde		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
1b.4	Subtotal Period 1b Period-Dependent Costs	38	851	7	3	-	29	30,149	4,513	35,590	34,123	1,467	-	-	356	-		-	7,122	12	336,037
1b.0	TOTAL PERIOD 1b COST	3,795	4,613	440	475	178	5,354	41,023	9,641	65,519	62,317	2,278	924	6,132	13,351	588	-	-	597,873	45,493	377,612
PERIO	D 1 TOTALS	3,795	5,980	452	480	178	5,404	118,348	20,903	155,540	147,480	6,468	1,592	6,132	13,961	588	-	-	610,063	45,513	1,000,729
PERIO	D 2a - Large Component Removal																				
Period :	a Direct Decommissioning Activities																				
Nuclear 2a.1.1.1 2a.1.1.2 2a.1.1.3 2a.1.1.4 2a.1.1.5 2a.1.1.5 2a.1.1.8 2a.1.1.8	Pressurizer Relief Tank Reactor Coolant Pumps & Motors Pressurizer Steam Generators CRDMs/ICIs/Service Structure Removal Reactor Vessel Internals	54 24 57 - 302 82 94 613	47 21 68 77 3,307 281 4,861 6,046 14,709	10 6 110 503 2,269 218 13,621 2,028 18,764	18 12 93 97 1,770 66 929 728 3,714	2,409 	187 125 463 776 4,001 938 9,015 2,975 18,480	307 307 314	89 51 186 278 2,681 488 11,878 6,804 22,455	406 238 977 1,732 16,437 2,294 40,693 18,982 81,759	406 238 977 1,732 16,437 2,294 40,693 18,982 81,759			18,672 	508 338 2,332 2,196 11,316 4,797 501 8,073 30,062	125	673	- - - - - - -	35,411 23,594 295,800 185,015 1,689,435 177,400 164,987 576,524 3,148,166	1,421 630 2,049 1,666 11,613 8,104 25,123 25,123 75,729	100 938 2,875 1,163 1,163 6,240
Remova 2a.1.2 2a.1.3	l of Major Equipment Main Turbine/Generator Main Condensers	- -	331 2,801	172 109	64 62	527 705	377 533	- -	283 960	1,752 5,170	1,752 5,170	-	- -	2,131 3,800	1,187 1,587	-	- -	-	203,265 271,824	4,667 39,151	- -
Cascadi 2a.1.4.1 2a.1.4	ng Costs from Clean Building Demolition Reactor Totals	- -	794 794	<u>-</u> -	<u>-</u> -	<u>.</u>	<del>-</del> -	- -	119 119	913 913	913 913	-	-	- -	<del>-</del> -	- -	<u>-</u> -	-		7,589 7,589	-
2a.1.5.1 2a.1.5.2 2a.1.5.2 2a.1.5.4 2a.1.5.6 2a.1.5.7 2a.1.5.8 2a.1.5.1 2a.1.5.1 2a.1.5.1 2a.1.5.1 2a.1.5.1 2a.1.5.1	Auxiliary Feedwater Auxiliary Feedwater - RCA Bleed Steam Caustic Addition - RCA Chemical Feed Chemical Feed - RCA Circulating Water Condensate 0 Condensate Polishing 1 Condensate Polishing - RCA 2 Electro-hydraulic 3 Feedwater 4 Feedwater - RCA 5 Gland Seal 6 Heater Drain		31 46 47 90 38 20 1 42 474 235 183 9 153 195 34	0	2 2 0 0 15 15	36 .39 .1  .348  .537			5 7 17 14 16 3 3 0 6 71 35 101 1 23 133 5 6	36 53 102 104 95 23 3 49 545 271 10 175 895 39 460	102 95 3		36 53 104 23 49 545 271 10 175	215 233 6 6 - 2,078					8,722 9,453 243	452 670 601 1,335 444 304 12 619 6,837 3,420 2,329 127 2,215 2,651 505 5,881	
2a.1.5.1 2a.1.5.2 2a.1.5.2 2a.1.5.2	2 Steam Generators 3 Turbine & Moisture Separators	· · · · ·	27 0 115 366 478 5 386 70 3,445	10 22 - - - -	37 29 - - - 108	844 340	234 - - 234 - - - 234	- - - - - - -	4 0 17 225 235 1 58 11 1,048	31 0 133 1,482 1,337 6 444 81 7,023	1,482 1,337 - - - - 4,565	- - - - - - - -	31 0 133 - - 6 444 81 2,458	5,044 2,031 - - - 12,815	- - - 686 - - - - 686	- - - - - - -	- - - - - - -	- - - - - - -	204,825 126,640 	389 5 1,690 4,956 6,667 75 5,609 1,003 48,794	- - - - - - - -
2a.1.6	Scaffolding in support of decommissioning	-	930	3	1	26	4	-	238	1,202	1,202	-	-	138	12	-	-	-	6,985	6,368	-
2a.1	Subtotal Period 2a Activity Costs	613	23,011	19,092	3,950	5,810	19,628	614	25,102	97,819	95,362	-	2,458	37,556	33,533	125	673	-	4,194,811	182,298	6,240
Period 2 2a.2.1 2a.2	a Additional Costs Retired RPV Upper Internals Package Subtotal Period 2a Additional Costs	- -	257 257	387 387	217 217	- -	1,394 1,394	- -	1,041 1,041	3,296 3,296	3,296 3,296	- -	-	- -	376 376	112 112	- -	- -	50,164 50,164	3,333 3,333	133 133
Period 2 2a.3.1 2a.3.3	a Collateral Costs Process decommissioning water waste Small tool allowance	48	239	32	58 -	-	130	-	68 36	337 274	337 247	-	- 27	- -	299	-	-	-	17,968	58	- -

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Table C-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(The	ousanas	of 2020 Dollaı	rs)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity	7	Decon	Removal	Packaging	Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC		Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Period 2a	Collateral Costs (continued)																				
2a.3.4	Spent Fuel Capital and Transfer	=	-	-	-	-	-	1,639	246		-	1,885	=	=	-	-	-	-	-	-	=
2a.3.5	Retention and Severance	-	-	-	-	-	-	12,780	1,917		14,697	-	-	-	-	-	-	-	-	-	-
2a.3.6	Prairie Island Indian Community Payments	-	-	-	-	-	-	1,780	-	1,780	-	1,780	-	-	-	-	-	-	-	-	-
2a.3	Subtotal Period 2a Collateral Costs	48	239	32	58	-	130	16,198	2,267	18,972	15,281	3,664	27	-	299	-	-	-	17,968	58	-
	Period-Dependent Costs																				
2a.4.1	Decon supplies	107	-	-	-	-	-	-	27		134	-	-	-	-	-	-	-	-	-	-
2a.4.2	Insurance	-	-	-	-	-	-	690	69		759	-	-	-	-	-	-	-	-	-	-
2a.4.3	Property taxes	Ē	1.950	-	-	-	-	5,009	501 487		5,510 2,437	-	-	-	-	-	-	-	=	-	-
2a.4.4 2a.4.5	Health physics supplies Heavy equipment rental	-	3,565	-	-	-	-	-	535		4,100	-	-	-	-	-	-	-	-	-	-
2a.4.6	Disposal of DAW generated	-	5,505	73	30	-	303	-	88		493	-	-	-	3,681	-	-	-	73,619	120	-
2a.4.7	Plant energy budget	-	-	-	-	-	-	2,194	329		2,523	_	-	-	-	_	-	-	-	-	-
2a.4.8	NRC Fees	-	-	-	-	-	-	842	84		926	-	-	-	-	-	-	-	-	-	-
2a.4.9	Emergency Planning Fees	-	-	-	-	-	-	2,647	265		-	2,912	-	-	-	-	-	-	-	-	-
2a.4.10	Fixed Overhead	=	-	-	-	-	-	1,695	254		1,949		-	-	-	-	-	-	-	-	-
2a.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	602	90		-	692	-	-	-	-	-	-	-	-	-
2a.4.12 2a.4.13	ISFSI Operating Costs Railroad Track Maintenance	-	-	-	-	-	-	80 318	12 48		366	92	-	-	-	-	-	-	-	-	-
2a.4.13 2a.4.14	Remedial Actions Surveys	-	-	-	-	-	-	1,596	48 239		1,835	-	-	-	-	-	-	-	-	-	-
2a.4.15	Security Staff Cost	-	_	-	-	-	-	11,727	1,759		13,486		-	-	-		-	-	-	-	172,726
2a.4.16	DOC Staff Cost	_	-	-	_	-	-	20,663	3,099		23,763	_	-	-	-	-	-	-	-	-	225,210
2a.4.17	Utility Staff Cost	-	-	-	-	-	-	26,905	4,036		30,941	-	-	-	-	-	-		-	-	417,453
2a.4	Subtotal Period 2a Period-Dependent Costs	107	5,515	73	30	-	303	74,968	11,922	92,918	89,223	3,696	-	-	3,681	-	-	-	73,619	120	815,389
2a.0	TOTAL PERIOD 2a COST	768	29,021	19,584	4,254	5,810	21,456	91,780	40,333	213,006	203,161	7,360	2,485	37,556	37,889	237	673	-	4,336,562	185,810	821,762
DEDICE																					
PERIOD	2b - Site Decontamination																				
Period 2b	Direct Decommissioning Activities																				
Disposal	of Plant Systems																				
2b.1.1.1	Aux Bldg Normal Ventilation	-	2	0	0	1	-	-	1	3	3	-	-	3	-	-	-	-	140	29	-
2b.1.1.2	Battery Rm Special Ventilation	-	0	-	-	-	-	-	0	-	-	-	0	-	-	-	-	-	-	6	-
2b.1.1.3	Buildings Maintenance	-	5	-	-	-		-	1	5		-	5			-	-	-		65	-
2b.1.1.4	Chemical & Volume Control	1,120	1,389	89	90	753	973	-	1,286		5,700	-	-	4,498	,	-	-	-	366,565	34,533	-
2b.1.1.5 2b.1.1.6	Component Cooling - RCA Containment Cooling	•	858 74	25	91	2,079	-	-	543 11		3,597	-	- 85	12,427	-	-	-	-	504,675	11,242 1.086	-
2b.1.1.6 2b.1.1.7	Containment Cooling - RCA	-	304	7	25	569	-	-	166		1,070	-	- 09	3,400	-	-	-	-	138,090	3,971	-
2b.1.1.8	Containment Hydrogen Control - RCA	-	304	0	1	18	-	-	100		59	-	-	105		-	-	-	4,278	401	-
2b.1.1.9	Containment Spray - RCA	<u>-</u>	93	2	6	145	-	-	46		293	-	-	868		-	-	-	35,249	1,217	-
2b.1.1.10	Containment Ventilation	-	255	24	51	828	248	-	260		1,667	-	-	4,951	737	-	-	-	247,952	3,668	-
	Cooling Water	-	163	-	-	-	-	-	24		-	-	187	-	-	-	-	-	-	2,396	-
	Cooling Water - RCA	-	658	16	57	1,293	-	-	368		2,392	-	-	7,728	-	-	-	-	313,832	8,594	-
	D1 Emergency Diesel	-	50	-	-	-	-	-	8	58	-	-	58	-	-	-	-	-	-	730	-
	D2 Emergency Diesel Diesel Rooms Ventilation	-	36 9	-	-	-	-	-	5	41 11	-	-	41 11	-	-	-	-	-		522 135	-
	Electrical - Clean	-	1,905	-	-	-	-	-	286		-	-	2,191	-	-	-	-	-	-	26,981	-
	Electrical - Contaminated	-	611	7	20	423	32	-	228		1,321	_	2,101	2,527	95	_	_	-	108,690	8,377	-
	Electrical - Decontaminated	Ē	3,787	48	173	3,940		-	1,569		9,518	-	-	23,551	-	-	-	-	956,401	49,378	-
2b.1.1.19	Fuel Handling	-	121	6	11	152	73	-	74		436	-	-	908	218	-	-	-	50,723	1,784	-
	Fuel Oil	-	121	-	-	-	-	-	18		-	-	140	-	-	-	-	-	-	1,697	-
	HVAC - Clean	-	120	-	-	-		-	18		-	-	138	-	-	-	-	-	-	1,891	-
	HVAC - Contaminated	- 0	374 28	9	26 2	546 10	41 19		190 14		1,186 74	-	-	3,261 60	123 57	-	-	-	140,257 6,058	5,032 425	-
	Incore Instrumentation Misc Drains & Vents	0	28 233	15	13	65	176		14 115		618	-	-	390		-	-	-	49,062	3,091	-
	Reactor Coolant	153	311	21	18	58	265		234		1,060		-	344		-	-	-	64,085	6,470	-
	Reactor Hot Sampling	149	136	12	7	11	118		142		576	-	-	66		-	-	-	25,063	3,946	-
	Reactor Makeup		73				-	-	11		-	-	84	-	-	-	-	-	,	1,042	-
	Reactor Vessel	9	21	1	0	4	5	-	12		52	-	-	26	14	-	-	-	2,000	425	-
	Residual Heat Removal	357	419	85	86	484	1,105	-	654		3,190	-	-	2,895	3,252	-	-	-	326,425	7,621	-
	Safeguards Chilled Water	-	18	-	-		-	-	3	20		-	20	-		-	-	-		259	-
2b.1.1.31		-	893	42	73	1,136	393		507		3,044		-	6,788		-	-	-	349,908	12,561	-
	Sampling Shield Bldg Ventilation	-	60 140	4 14	3 26	10 360	37 165		26 135		140 839	-	-	59 2,152		-	-	-	9,420 118,583	811 2.030	-
	Shield Bldg Ventilation Station & Instrument Air	-	140 20	14	26	360	169	-	135		839	-	23	2,102	491	-	-	-	118,583	300	-
20.1.1.04	Seasion & Histiament An	-	20	-	-	-	-	-	э	40	-	-	23	-	-	-	-	-	-	500	-

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Table C-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(The	ousands o	of 2020 Dollar	·s)											
_						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		D.mial 3	Volumes		Burial /		Utility and
Activit	v	Decon	Removal	Packaging	Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index		Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet		Cu. Feet	Wt., Lbs.	Manhours	Manhours
Dianaga	l of Plant Systems (continued)																				
	5 Station & Instrument Air - RCA	_	81	1	2	56	_	_	29	169	169	_	-	332	_	-	_	_	13,496	1,053	-
2b.1.1.3		-	50	-		-	-	-	8	58	-	-	58	-	-	-	-	-		767	-
	7 Unit Coolers	=	42	-	-	-	-	-	6	49	-	-	49	-	-	-	-	-	-	611	-
	8 Unit Coolers - RCA		55	0	2	39		-	20	115	115	-	-	230		-	-	-	9,348	683	-
2b.1.1	Totals	1,789	13,544	429	786	12,979	3,651	-	7,032	40,209	37,119	-	3,091	77,571	10,728	-	-	-	3,840,299	205,829	-
2b.1.2	Scaffolding in support of decommissioning	-	1,163	4	2	32	5	-	297	1,503	1,503	-	-	173	15	-	-	-	8,731	7,960	-
	mination of Site Buildings																				
2b.1.3.1		1,215	2,807	240	1,236	373	13,624		4,981	24,476	24,476	-	-	2,230	83,429	-	-	-	3,633,417	50,950	-
2b.1.3.2 2b.1.3	Backwash Waste Receiving Tank Totals	1,215	28 2,835	3 243	17 1,253	373	97 13,721		34 5,015	179 $24,655$	179 24,655	-	-	2,230	929 84,358	-	-	-	43,896 3,677,313	301 51,251	-
20.1.5	Totals	1,215	2,030	243	1,200	373	15,721	-	5,015	24,055	24,655	-	-	2,230	04,550	-	-	-	3,677,313	51,251	-
2b.1.4 2b.1.5	Prepare/submit License Termination Plan Receive NRC approval of termination plan	-	-	-	-	-	-	526	79	605 a	605	-	-	-	-	-	-	-	-	-	4,096
2b.1	Subtotal Period 2b Activity Costs	3,004	17,542	675	2,041	13,384	17,377	526	12,423	66,973	63,882	-	3,091	79,974	95,101	-	-	-	7,526,343	265,040	4,096
	b Additional Costs																				
2b.2.1	Operational Equipment	-		11	36	606	-	-	97	751	751	-	-	5,880	-	-	-	-	147,000	16	-
2b.2.2	Excavation of Underground Services	-	1,175	-	-	-	-	225	328	1,728	1,728	-	-	-	-	-	-	-	-	7,411	-
2b.2.3 2b.2	Security Modifications Subtotal Period 2b Additional Costs	-	1,175	11	36	606	-	4,348 4,573	652 1,077	5,000 7,478	5,000 7,478	-	-	5,880	-	-	-	-	147,000	7,427	-
D : 10	100.10																				
Period 2 2b.3.1	b Collateral Costs Process decommissioning water waste	108	-	74	132		298		156	768	768				684				41,053	133	
2b.3.1 2b.3.2	Process decommissioning water waste  Process decommissioning chemical flush waste	2	-	90	296	-	677		224	1,289	1,289	-	-	-	875	-	-	-	93,252	164	-
2b.3.3	Small tool allowance	-	315	-	-	-	-	-	47	362	362	-	-	-	-	-	-	-	-	-	-
2b.3.4	Spent Fuel Capital and Transfer	-	-	-	-	-	-	7,142	1,071	8,213	-	8,213	-	-	-	-	-	-	-	-	-
2b.3.5	Retention and Severance	-	-	-	-	-	-	6,141	921	7,063	7,063		-	-	-	-	-	-	-	-	-
2b.3.6 2b.3	Prairie Island Indian Community Payments Subtotal Period 2b Collateral Costs	110	315	164	428	-	975	1,348 14,631	2,419	1,348 19,043	9,482	1,348 9,561	-	-	1,559	-	-	-	134,305	297	-
								,	, -	-,-	-,	-,			,				,,,,,,		
Period 2 2b.4.1	b Period-Dependent Costs Decon supplies	511	-	_	_	_	_	_	128	639	639	_	_	_	_	_	_	_	_	_	_
2b.4.2	Insurance	-	-	-	-	-	-	523	52	575	575	-	-	-	-	-	-	-	-	-	-
2b.4.3	Property taxes	=	-	-	-	-	-	3,435	344	3,779	3,779	=	-	-	-	-	-	-	-	-	=
2b.4.4	Health physics supplies	Ē	2,140	-	=	-	-	-	535	2,675	2,675	<u>-</u>	-	-	-	-	-	-	-	-	Ē
2b.4.5 2b.4.6	Heavy equipment rental Disposal of DAW generated	<u>=</u>	2,774	70	28	-	290	-	416 84	3,190 472	3,190 472	=	-	=	3,521	-	-	-	70,425	115	<u>=</u>
2b.4.6 2b.4.7	Plant energy budget	-	-	70	20	-	290	1,313	197	1,509	1,509	-	-	-	5,521	-	-	-	70,425	115	-
2b.4.8	NRC Fees	-	_	-	-	-	-	638	64	701	701	-	-	-	_	-	-	-	-	-	-
2b.4.9	Emergency Planning Fees	-	-	-	-	-	-	2,006	201	2,207	-	2,207	-	-	-	-	-	-	-	-	-
2b.4.10	Fixed Overhead	-	-	-	-	-	-	1,284	193	1,477	1,477	-	-	-	-	-	-	-	-	-	-
2b.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	456	68	524	-	524	-	-	-	-	-	-	-	-	-
2b.4.12 2b.4.13	Liquid Radwaste Processing Equipment/Services ISFSI Operating Costs	-	-	-	-	-	-	229 60	34 9	264 69	264	69	-	-	-	•	-	-	-	-	-
2b.4.14	Railroad Track Maintenance	-	-	-	-	-	-	67	10	78	78	- 03	-	-	-	-	-	-	-	-	-
2b.4.15	Remedial Actions Surveys	<u>=</u>	-	-	-	-	-	1,209	181	1,391	1,391	<u> </u>	-	=	-	-	-	-	-	-	Ē
2b.4.16	Security Staff Cost	-	-	-	-	-	-	8,259	1,239	9,497	9,497	-	-	-	-	-	-	-	-	-	121,244
2b.4.17	DOC Staff Cost	-	-	-	-	-	-	10,738	1,611	12,348	12,348	-	-	-	-	-	-	-	-	-	121,244
2b.4.18 2b.4	Utility Staff Cost Subtotal Period 2b Period-Dependent Costs	511	4,914	70	28	-	290	13,928 $44,145$	2,089 7,454	16,017 57,412	16,017 54,612	2,800	-	-	3,521	-	-	-	70,425	115	225,649 468,137
2b.0	TOTAL PERIOD 2b COST	3,626	23,946	920	2,533	13,990	18,642		23,374		135,455	12,362	3,091	85,854	100,182	-	-	-	7,878,073	272,879	472,233
PERIO	D 2c - Spent fuel delay prior to SFP decon																				
	c Direct Decommissioning Activities																				
	_																				
Period 2 2c.3.1	c Collateral Costs Spent Fuel Capital and Transfer		_	_		_	_	51,417	7,713	59,130	_	59,130	_		_	_	_		_		_
2c.3.1	Retention and Severance	-		-	-	-		3,512	527	4,039	4,039	55,150	-	-	-	-		-	-	-	-
2c.3.3	Prairie Island Indian Community Payments	-	-	-	-	-	-	1,526	-	1,526	-	1,526	-	-	-	-	-	-	-	-	-
2c.3	Subtotal Period 2c Collateral Costs	-	-	-	-	-	-	56,456	8,239	64,695	4,039	60,656	-	-	-	-	-	-	-	-	-

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Table C-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(111)	Jusanus (	oi 2020 Dollar	5)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Volumes		Burial /		Utility and
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
	•																		,		
2c.4.1	c Period-Dependent Costs Insurance	_	_	_	_	_	_	592	59	651	651	_	_	_	_	_			_	_	_
2c.4.2	Property taxes	-	-	-	-	-	-	3,512	351	3,863	3,863	-	-	-	-	_	-	_	-	-	-
2c.4.3	Health physics supplies	-	263	-	-	-	-	-	66	328	328	-	-	-	-	-	-	-	-	-	-
2c.4.4	Disposal of DAW generated	-	-	9	4	4 -	38	-	11	61	61	-	-	-	457	-	-	-	9,141	15	-
2c.4.5	Plant energy budget	-	-	-	-	-	-	1,486	223	1,709	1,709	-	-	-	-	-	-	-	-	-	-
2c.4.6	NRC Fees	-	-	-	-	-	-	687	69	756	756		-	-	-	-	-	-	-	-	-
2c.4.7 2c.4.8	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	2,271 1,454	227 218	2,498 1,672	1,672	2,498	-	-	-	-	-	-	-	-	-
2c.4.9	Spent Fuel Pool O&M	-	-	-	-	-	-	516	77	593	1,072	593	-	-	-	-	-	-	-	-	-
2c.4.10	Liquid Radwaste Processing Equipment/Services	-	_	-	_	_	-	260	39	298	298	-	_	-	-	_	_	_	-	-	_
2c.4.11	ISFSI Operating Costs	-	-	-	-	-	-	68	10	79	-	79	-	-	-	-	-	-	-	-	-
2c.4.12	Railroad Track Maintenance	-	-	-	-	-	-	76	11	88	88	-	-	-	-	-	-	-	-	-	-
2c.4.13	Security Staff Cost	-	-	-	-	-	-	9,348	1,402		10,751	-	-	-	-	-	-	-	-	-	137,246
2c.4.14	Utility Staff Cost	-	-		-	-	-	1,195	179	1,375	1,375		-	-		-	-	-		-	19,062
2c.4	Subtotal Period 2c Period-Dependent Costs	-	263	9	4	-	38	21,465	2,943	24,721	21,552	3,170	-	-	457	-	-	-	9,141	15	156,308
2c.0	TOTAL PERIOD 2c COST	-	263	9	4	-	38	77,921	11,183	89,417	25,591	63,826	-	-	457	-	-	-	9,141	15	156,308
PERIOI	D 2d - Decontamination Following Wet Fuel Storage																				
Period 2	d Direct Decommissioning Activities																				
2d.1.1	Remove spent fuel racks	347	35	86	4	1 -	703	-	373	1,585	1,585	-	-	-	2,092	-	-	-	132,919	576	-
Disposal	of Plant Systems																				
2d.1.2.1	Electrical - Contaminated - Fuel Pool	-	152	2	Ę	5 103	8	-	56	325	325	-	-	615	23	-	-	-	26,449	2,077	-
2d.1.2.2		-	947				-	-	392	2,380	2,380	-	-	5,893		-	-	-	239,327	12,340	-
2d.1.2.3	HVAC - Contaminated - Fuel Pool	-	160				18	-	82	508	508	-	-	1,398		-	-	-	60,110	2,157	-
2d.1.2.4		-	85				-	-	34	207	207	-	-	495		-	-	-	20,100	1,019	-
2d.1.2.5		303	357				450	-	382		1,693	-	-	806		-	-	-	117,816	7,613	-
2d.1.2.6 2d.1.2	Station & Instrument Air - RCA Fuel Pool Totals	303	20 1,721				476	-	7 954	42 $5,157$	42 5,157	-	-	83 9,290	1,401	-	-	-	3,374 467,176	263 25,468	-
Decontar	mination of Site Buildings																				
2d.1.4	Scaffolding in support of decommissioning	-	233	1	(	6	1	-	59	301	301	-	-	35	3	-	-	-	1,746	1,592	-
2d.1	Subtotal Period 2d Activity Costs	650	1,989	139	138	3 1,561	1,180	_	1,386	7,042	7,042	-	-	9,325	3,496	-	-	-	601,841	27,637	-
	d Additional Costs		,			,	,		,		-,-			-,-	-,				, .	.,	
2d.2.1	License Termination Survey Planning							1,037	311	1,348	1,348									-	6,240
2d.2.1	Subtotal Period 2d Additional Costs	-		-	-	-	-	1,037	311	1,348	1,348	-	-	-	-	-	-	-	-	-	6,240
Period 2	d Collateral Costs																				
2d.3.1	Process decommissioning water waste	30	-	21	38	3 -	86	_	44	220	220	_	_	-	197	-	_	_	11,793	38	-
2d.3.2	Process decommissioning chemical flush waste	1	-	34	110	) -	251	-	83	478	478	-	-	-	324	-	-	-	34,576	61	-
2d.3.3	Small tool allowance	-	37		-	-	-	-	6	42	42	-	-	-	-	-	-	-	-	-	-
2d.3.4	Decommissioning Equipment Disposition	-	-	130	6'	7 1,112	178		234	1,722	1,722	-	-	6,000	529	-	-	-	303,608	147	-
2d.3.5	Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,159	174	1,333	-	1,333	-	-	-	-	-	-	-	-	-
2d.3.6 2d.3	Prairie Island Indian Community Payments Subtotal Period 2d Collateral Costs	31	37	185	218	- 5 1,112	- 514	975 2,135	541	975 4,770	2,462	975 2,308	-	6,000	1,050	-	-	-	349,977	246	-
		01	01	100	210	, 1,112	014	2,100	041	4,110	2,402	2,500		0,000	1,000				040,011	240	
2d.4.1	d Period-Dependent Costs Decon supplies	59	_						15	73	73										
2d.4.1 2d.4.2	Insurance	99	-	-	-	-	-	378	38	416	416	-	-	-	-	-	-	-	-	-	-
2d.4.2	Property taxes	-	-	-	-	-		2,004	200	2,204	2.204	-	_	-	-		-	-	-	-	-
2d.4.4	Health physics supplies	-	575	-	-	_	-	-,501	144	719	719	_	_	-	-	-	_	_	_	-	-
2d.4.5	Heavy equipment rental	-	2,007		-	-	-	-	301	2,308	2,308	-	-	-	-	-	-	-	-	-	-
2d.4.6	Disposal of DAW generated	-	-	16	,	7 -	68	-	20	111	111	-	-	-	830	-	-	-	16,609	27	-
2d.4.7	Plant energy budget	-	-	-	-	-	-	506	76	582	582	-	-	-	-	-	-	-	-	-	-
2d.4.8	NRC Fees	-	-	-	-	-	-	439	44	483	483	-	-	-	-	-	-	-	-	-	-
2d.4.9	Emergency Planning Fees	-	-	-	-	-	-	58	6	64	1.000	64	-	-	-	-	-	-	-	-	-
2d.4.10 2d.4.11	Fixed Overhead Liquid Radwaste Processing Equipment/Services	<u>=</u>	-	-	-	-	-	929 332	139 50	1,068 381	1,068 381	-	-	-	-	-	-	-	-	-	=
2d.4.11 2d.4.12	ISFSI Operating Costs	-	-	-	-	-	-	332 44	50 7	50	381	50	-	-	_	-	-	-	-	-	-
2d.4.12 2d.4.13	Railroad Track Maintenance	-	-	-	-	-	-	49	7	56	56	-	-	-	-	-	-	-	-	-	-
2d.4.14	Remedial Actions Surveys	-	-	-	-	-	-	875	131	1,006	1,006	-	-	-	-	-	-	-	-	-	-

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Table C-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(The	ousands o	of 2020 Dollar	·s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial V	Volumes		Burial /		Utility and
Activit		Decon			Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
	2d Period-Dependent Costs (continued)																				
2d.4.15 2d.4.16	Security Staff Cost DOC Staff Cost	-	-	-	-	-	-	5,782 6,401	867 960	6,649 7,361	4,694 7,361	1,955	-	-	-	-	-	-	-	-	84,454 70,243
2d.4.17		-	-	-	-	-		8,100	1,215		8,858	456	-	-	-		-		-	-	126,681
2d.4	Subtotal Period 2d Period-Dependent Costs	59	2,582	16	7	-	68	25,896	4,220	32,848	30,323	2,525	-	-	830	-	-	-	16,609	27	281,377
2d.0	TOTAL PERIOD 2d COST	740	4,608	340	360	2,673	1,763	29,067	6,458	46,008	41,175	4,834	-	15,325	5,377	-	-	-	968,427	27,910	287,617
PERIO	D 2f - License Termination																				
Period 2	of Direct Decommissioning Activities																				
2f.1.1	ORISE confirmatory survey	-	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-
2f.1.2 2f.1	Terminate license Subtotal Period 2f Activity Costs							166	50	a 216	216										
21.1	Subtotal Feriod 21 Activity Costs	-	-	-	-	-	-	100	50	216	216	-	-	-	-	-	-	-	-	-	-
	of Additional Costs							0.100	000	4.150	4.180									40 701	0.100
2f.2.1 2f.2	License Termination Survey Subtotal Period 2f Additional Costs	-		-	-	-	-	3,199 3,199	960 960	4,159 4,159	4,159 4,159	-	-	-	-	-	-	-	-	40,531 40,531	3,120 3,120
								, , , ,		,	,									-,	-,
Period 2 2f.3.1	tf Collateral Costs DOC staff relocation expenses	_		_	_		_	1,264	190	1,454	1,454	_				_	_	_		_	_
2f.3.2	Spent Fuel Capital and Transfer	=	-	-	=	-	-	603	90	693	-	693	-	=	-	-	-	-	-	-	=
2f.3.3	Prairie Island Indian Community Payments	-	-	-	-	-	-	934	-	934		934	-	-	-	-	-	-	-	-	-
2f.3	Subtotal Period 2f Collateral Costs	-	-	-	-	-	-	2,801	280	3,081	1,454	1,628	-	-	-	-	-	-	-	-	-
	of Period-Dependent Costs																				
2f.4.1	Insurance	-	-	-	-	-	-	362 $1,771$	36 177	398	398	-	-	-	-	-	-	-	-	-	-
2f.4.2 2f.4.3	Property taxes Health physics supplies	-	501	-	-	-	-	1,771	125	1,948 626	1,948 626	-	-	-	-	-	-	-	-	-	-
2f.4.4	Disposal of DAW generated	-	-	7	3	-	28	-	8	45	45	-	-	-	334	-	-	-	6,685	11	-
2f.4.5	Plant energy budget	-	-	-	-	-	-	243	36	279	279	-	-	-	-	-	-	-	-	-	-
2f.4.6 2f.4.7	NRC Fees Emergency Planning Fees	-	-	-	-	-	-	422 55	42 6	465 61	465	61	-	-	-	-	-	-	-	-	-
2f.4.8	Fixed Overhead	-	-	-	-	-	-	890	133		1,023	-	-	-		-	-		-	-	-
2f.4.9	ISFSI Operating Costs	-	-	-	-	-	-	42	6 7	48	-	48	-	-	-	-	-	-	-	-	-
2f.4.10 2f.4.11	Railroad Track Maintenance Security Staff Cost	-	-	-	-	-	-	47 5,538	831	54 6,369	54 4,497	1,873	-	-	-	-	-	-	-	-	80,898
2f.4.12	DOC Staff Cost	-	-	-	-	-	-	4,238	636	4,874	4,874	· -	-	-	-	-	-	-	-	-	46,283
2f.4.13	Utility Staff Cost	=	-	- 7	-	-	-	4,011	602	4,613	4,175	438	-	=	-	-	-	-		-	59,507
2f.4	Subtotal Period 2f Period-Dependent Costs	-	501	•	3	-	28	17,620	2,646	20,803	18,384	2,420	-	-	334	-	-	-	6,685	11	186,687
2f.0	TOTAL PERIOD 2f COST	-	501	7	3	-	28	23,786	3,935	28,259	24,212	4,048		-	334	-	-	-	6,685	40,542	189,807
	D 2 TOTALS	5,134	58,338	20,860	7,153	22,473	41,926	286,430	85,282	527,597	429,593	92,428	5,576	138,734	144,239	237	673	-	13,198,890	527,156	1,927,726
	D 3b - Site Restoration																				
	Bb Direct Decommissioning Activities																				
	ion of Remaining Site Buildings								207	<b>F</b> 0.43			F 0.41							44.000	
3b.1.1.1 3b.1.1.2		-	4,644 3	-	-	-	-	-	697 0	5,341 4	-	-	5,341 4	-	-	-	-	-	-	44,669 16	-
3b.1.1.3	Structures below 3' below grade	-	1,651	-	-	-	-	-	248		-	-	1,899	-	-	-	-	-	-	8,411	-
3b.1.1.4		=	2,139	-	=	-	-	-	321	2,460	-	=	2,460	=	-	-	-	-	-	21,985	=
3b.1.1.5 3b.1.1	Turbine Pedestal Totals	-	365 8,803	-	-	-	-	-	55 1,320	420 10,123	-	-	420 10,123	-	-	-	-	-	-	1,857 76,939	-
			-							•			-							•	
Site Clo 3b.1.2	seout Activities Grade & landscape site	-	448	-	_	_	_	_	67	515	-	_	515	_	_	_	_	_	_	921	-
3b.1.3	Final report to NRC	-	-	-	-	-	-	200	30	231	231	-	-	-	-	-	-	-	-	-	1,560
3b.1	Subtotal Period 3b Activity Costs	-	9,251	-	-	-	-	200	1,418	10,869	231	-	10,639	-	-	-	-	-	-	77,859	1,560
Period 3	Bb Additional Costs																				
3b.2.1	Clean Concrete Disposal	-	2,242	-	-	-	-	5	337	2,583	-	-	2,583	-	-	-	-	-	-	8,386	-
3b.2.2 3b.2.3	Intake Structure Cofferdam Construction Debris	-	623	-	-	-	-	10	93 2	716 12	-	-	716 12	-	-	-	-	-	-	5,168	-
3b.2.3	Backfill	-	3,011			-	-	- 10	452			-	3,462		-	-	-	-	-	2,904	-
										, ,			, ,								

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Table C-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(11)	lousanus	oi 2020 Dollai	13)											
		_				Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transpor Costs	t Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
3b.2	Subtotal Period 3b Additional Costs	-	5,875	-	-	-	-	15	883	6,773	-	-	6,773	-	-	-	-	-	-	16,458	-
	o Collateral Costs																				
3b.3.1	Small tool allowance	-	120	-	-	-	-	1 000	18		-	1 000	138	-	-	-	-	-	-	-	-
3b.3.2 3b.3.3	Spent Fuel Capital and Transfer Prairie Island Indian Community Payments	-	-	-	-	-	-	1,636 2,649	245	1,882 2,649		1,882 2,649	-	-	-	-	-	-	-	-	-
эв.э.э 3b.3	Subtotal Period 3b Collateral Costs	-	120		-	-	-	4,285	263		-	4,531	138	-	-	-	-	-	-	-	-
Period 3b	Period-Dependent Costs																				
3b.4.1	Insurance	-	-	-	-	-	-	513	51		565	-	-	-	-	-	-	-	-	-	-
3b.4.2	Property taxes	-	-	-	-	-	-	4,167	417		-	4,583	-	-	-	-	-	-	-	-	-
3b.4.3	Heavy equipment rental	-	7,144	-	-	-	-	-	1,072		-	-	8,215	-	-	-	-	-	-	-	-
3b.4.4	Plant energy budget	-	-	-	-	-	-	344	52		-	395 239	-	-	-	-	-	-	-	-	-
3b.4.5 3b.4.6	NRC ISFSI Fees Emergency Planning Fees	-	-	-	-	-	-	218 157	22 16		-	173	-	-	-	-	-	-	-	-	-
3b.4.6 3b.4.7	Fixed Overhead	-	-	-	-	-	-	1,024	154		397	781	-	-	-	-	-	-	-	-	-
3b.4.8	ISFSI Operating Costs							119	18		-	136					_				
3b.4.9	Railroad Track Maintenance	-	_	_	-	_	_	361	54		153		-	_	_	-	_	_	-	-	_
3b.4.10	Security Staff Cost	-	-	-	-	-	-	4,616	692		-	5,308	-	-	-	-	-	-	-	-	57,34
3b.4.11	DOC Staff Cost	-	-	-	-	-	-	10,921	1,638	12,559	-	-	12,559	-	-	-	-	-	-	-	116,88
3b.4.12		-	-	-	-	-	-	5,004	751		-	1,237	4,517	-	-	-	-	-	-	-	74,43
3b.4	Subtotal Period 3b Period-Dependent Costs	-	7,144	-	-	-	-	27,444	4,935	39,523	1,114	13,117	25,292	-	-	-	-	-	-	-	248,65
b.0	TOTAL PERIOD 3b COST	-	22,390	-	-	-	-	31,944	7,500	61,834	1,345	17,647	42,842	-	-	-	-	-	-	94,317	250,21
ERIOL	3c - Fuel Storage Operations/Shipping																				
eriod 3d	Direct Decommissioning Activities																				
	e Collateral Costs																				
c.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	13,208	1,981		-	15,189	-	-	-	-	-	-	-	-	-
c.3.2	Prairie Island Indian Community Payments	•	-	-	-	-	-	40,613		40,613	-	40,613	-	-	-	-	-	-	-	-	-
e.3	Subtotal Period 3c Collateral Costs	-	-	-	-	-	-	53,820	1,981	55,801	-	55,801	-	-	-	-	-	-	-	-	=
	Period-Dependent Costs																				
2.4.1	Insurance	-	-	-	-	-	-	7,872	787		-	8,659	-	-	-	-	-	-	-	-	-
.4.2	Property taxes	-	-	-	-	-	-	45,095	4,509		-	49,604	-	-	-	-	-	-	-	-	-
.4.4	NRC ISFSI Fees	-	-	-	-	-	-	5,076	508		-	5,583 2,651	-	-	-	-	-	-	-	-	-
2.4.5	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	2,410 5,298	241 795		-	2,651 6,092	-	-	-	-	-	-	-	-	-
c.4.6 c.4.7	ISFSI Operating Costs	-	-	-	-	-	-	1,820	273		-	2,092	-	-	-	-	-	-	-	-	-
2.4.8	Railroad Track Maintenance		-	-	-		-	2,033	305		-	2,338	-	-	-	-	-	-		-	-
2.4.9	Security Staff Cost	_	_	_	_	_	-	70,770	10,615		-	81,385	_	_	_	_	_	_	_	-	879,13
.4.10	Utility Staff Cost	-	_	-	-	_	-	16,510	2,477		-	18,987	-	-	_	-	_	-	_	_	228,23
c.4	Subtotal Period 3c Period-Dependent Costs	-	-	-	-	-	-	156,883	20,510		-	177,392	-	-	-	-	-	-	-	-	1,107,37
c.0	TOTAL PERIOD 3c COST	-	-	-	-	-	-	210,703	22,491	233,194	-	233,194	-	-	-	-	-	-	-	-	1,107,37
ERIOL	3d - GTCC shipping																				
eriod 3d	d Direct Decommissioning Activities																				
	Steam Supply System Removal																				
		-	-	1,444		-	8,680		1,663		11,787	-	-	-	-	-	-	1,773			-
d.1.1 d.1	Totals Subtotal Period 3d Activity Costs	-	-	1,444 1,444		-	8,680 8,680		1,663 1,663		11,787 11,787	-	-	-	-	-	-	1,773 1,773			-
eriod 3d	d Collateral Costs																				
d.3.1	Prairie Island Indian Community Payments	-	-	-	-	-	-	48	-	48	-	48	-	-	-	-	-	-	-	-	-
d.3	Subtotal Period 3d Collateral Costs	-	-	-	ē	-	-	48	-	48	=	48	Ē	÷	÷	÷	-	Ē	-	Ē	Ē
	l Period-Dependent Costs							-			<i>3</i> =										
d.4.1	Insurance	-	-	-	-	-	-	9	1	10	10	-	-	-	-	-	-	-	-	-	-
d.4.2 d.4.4	Property taxes NRC ISFSI Fees	Ē	-	-	-	-	-	53 4	5		58	4	-	-	-	-	-	-	-	-	-
3d.4.4 3d.4.5	Emergency Planning Fees	-	-	-	-	-	-	3	0	-	-	3		-	-	-	-	-	-	-	-
3d.4.6	Fixed Overhead	-	-	-	-	-	-	6	1	-	7		-	-	-	-	-	-	-	-	-

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Table C-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(		oi 2020 Dollar	~,											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Rurial '	Volumes		Burial /		Utility and
Activi		Decon	Removal	Packaging	Transport	Processing		Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Inde	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Poriod 5	3d Period-Dependent Costs (continued)																				
3d.4.7	Railroad Track Maintenance	_	-	_	-	_	-	2	0	3	3	-	-	_	-	-	-	_	-	-	_
3d.4.8	Security Staff Cost	-	-	-	-	-	-	83	13	96	96	-	-	-	-	-	-	-	-	-	1,037
3d.4.9	Utility Staff Cost	-	-	-	-	-	-	19	3	22	22	-	-	-	-	-	-	-	-	-	269
3d.4	Subtotal Period 3d Period-Dependent Costs	-	-	-	-	-	-	181	24	204	197	7	-	-	-	-	-	-	-	-	1,306
3d.0	TOTAL PERIOD 3d COST	-	-	1,444	-	-	8,680	229	1,687	12,039	11,984	55	-	-	-	-	-	1,773	344,823	-	1,306
PERIO	D 3e - ISFSI Decontamination																				
Period	Be Direct Decommissioning Activities																				
Period :	Be Additional Costs																				
3e.2.1	License Termination ISFSI	-	24	81	435		2,532		978	4,890	4,890	-	-	-	9,355	-	-	-	1,123,457	3,762	1,065
3e.2	Subtotal Period 3e Additional Costs	-	24	81	435	-	2,532	839	978	4,890	4,890	-	-	-	9,355	-	-	-	1,123,457	3,762	1,065
Period :	Be Period-Dependent Costs																				
3e.4.1	Insurance	-	-	-	-	-	-	93	23	116	116	-	-	-	-	-	-	-	-	-	-
3e.4.2	Property taxes	-	-	-	-	-	-	56	14	69	69	-	-	-	-	-	-	-	-	-	-
3e.4.3	Plant energy budget	-	-	-	-	-	-	11	3	13	13	-	-	-	-	-	-	-	-	-	-
3e.4.4 3e.4.5	Fixed Overhead Railroad Track Maintenance	=	-	-	-	-	-	54 21	14 5	68 26	68 26	-	-	=	-	-	-	-	-	-	-
3e.4.6	Security Staff Cost	-	-	-	-	-	-	174	43	217	217	-	-	-	-	-	-	-	-	-	2,500
3e.4.7	Utility Staff Cost	-	-	-	-	-	-	129	32	161	161	-	-	-	-	-	-	-	-	-	1,896
3e.4	Subtotal Period 3e Period-Dependent Costs	-	-	-	-	-	-	536	134	670	670	-	-	-	-	-	-	-	-	-	4,396
3e.0	TOTAL PERIOD 3e COST	-	24	81	435	-	2,532	1,375	1,112	5,560	5,560	-	-	-	9,355	-	-	-	1,123,457	3,762	5,460
PERIO	D 3f - ISFSI Site Restoration																				
Period 3	3f Direct Decommissioning Activities																				
Period :	Bf Additional Costs																				
3f.2.1	Demolition and Site Restoration of ISFSI	-	515	-	-	-	-	68	87	670	-	-	670	-	-	-	-	-	-	2,219	80
3f.2	Subtotal Period 3f Additional Costs	-	515	-	-	-	-	68	87	670	-	-	670	-	-	-	-	-	-	2,219	80
Period :	3f Collateral Costs																				
3f.3.1	Small tool allowance	-	3	-	-	-	-	-	0	4	-	-	4	-	-	-	-	-	-	-	-
3f.3	Subtotal Period 3f Collateral Costs	-	3	-	-	-	-	-	0	4	-	-	4	-	-	-	-	-	-	-	-
Period :	3f Period-Dependent Costs																				
3f.4.2	Property taxes	-	-	-	-	-	-	28	3	31	-	-	31	-	-	-	-	-	-	-	-
3f.4.3	Heavy equipment rental	-	59	-	-	-	-	-	9	68	-	-	68	-	-	-	-	-	-	-	-
3f.4.4	Plant energy budget	-	-	-	-	-	-	6	1	6	-	-	6	-	-	-	-	-	-	-	-
3f.4.5 3f.4.6	Fixed Overhead Railroad Track Maintenance	-	-	-	-	-	-	28 11	4 2	32 12	-	-	32 12	=	-	-	-	-	-	-	-
3f.4.7	Security Staff Cost	-	-	-	-	-	-	89	13	102	-	-	102	-	-	-	-	-	-	-	1,281
3f.4.8	Utility Staff Cost	-	-	-	-	-	-	55	8	63	-	-	63	-	-	_	-	-	-	-	795
3f.4	Subtotal Period 3f Period-Dependent Costs	-	59	-	-	-	-	216	40	315	-	-	315	-	-	-	-	-	-	-	2,076
3f.0	TOTAL PERIOD 3f COST	-	577	-	-	-	-	284	128	989	-	-	989	-	-	-	-	-	-	2,219	2,156
PERIO	D 3 TOTALS	-	22,992	1,525	435	-	11,212	244,535	32,917	313,616	18,889	250,896	43,831	-	9,355	-	-	1,773	1,468,280	100,298	1,366,508
TOTAL	COST TO DECOMMISSION	8,929	87,309	22,838	8,068	22,651	58,542	649,313	139,103	996,753	595,962	349,793	50,998	144,866	167,555	826	673	1,773	15,277,230	672,967	4,294,963

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Craft

Contractor

| Burial Volumes | Burial / |
| Class A | Class B | Class C | GTCC | Processed |
| Cu. Feet | Cu. Feet | Cu. Feet | Wt., Lbs.

Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

#### Table C-1 Prairie Island DECON Unit 1 DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035 (Thousands of 2020 Dollars)

NRC Spent Fuel Site
Total Lic. Term. Management Restoration
Costs Costs Costs Costs

Processed Volume

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency
TOTAL COST TO	DECOMMISSION WITH 16.22% CONTING	ENCY:			\$996,753	thousands of	2020 dollar	s	1
TOTAL NRC LIC	ENSE TERMINATION COST IS 59.79% OR:				\$595,962	thousands of	2020 dollar	s	
SPENT FUEL MA	ANAGEMENT COST IS 35.09% OR:				\$349,793	thousands of	2020 dollar	s	
NON-NUCLEAR	DEMOLITION COST IS 5.12% OR:				\$50,998	thousands of	2020 dollar	s	
TOTAL LOW-LEV	VEL RADIOACTIVE WASTE VOLUME BUR	IED (EXCLUDING	GTCC):		169,054	Cubic Feet			
TOTAL GREATE	R THAN CLASS C RADWASTE VOLUME G	ENERATED:			1,773	Cubic Feet			
TOTAL SCRAP M	IETAL REMOVED:				32,925	Tons			
TOTAL CRAFT L	ABOR REQUIREMENTS:				672,967	Man-hours			

End Notes: n/a - indicates that this activity not charged as decommissioning expense a - indicates that this activity performed by decommissioning staff 0 - indicates that this value is less than 0.5 but is non-zero A cell containing " - " indicates a zero value

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Table C-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(Th	ousands o	of 2020 Dollar	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity		Decon				Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed		Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
PERIOD 1a -	- Shutdown through Transition																				
	ect Decommissioning Activities																				
	epare preliminary decommissioning cost	-	-	-	-	-	-	71	11	82	82	-	-	-	-	-	-	-	-	-	556
	otification of Cessation of Operations emove fuel & source material									a n/a											
	otification of Permanent Defueling									a											
	eactivate plant systems & process waste									a											
	epare and submit PSDAR eview plant dwgs & specs.	-	-	-	-	-	-	110 253	16 38	126 291	126 291	-	-	-	-	-	-	-	-	-	855 1,967
	erform detailed rad survey	-	-	-	-	-	-	203	38	291 a	291	-	-	-	-	-	-	-	-	-	1,967
1a.1.9 Est	timate by-product inventory	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
	nd product description	-	-	-	-	-	-	55	. 8	63	63	-	-	-	-	-	-	-	-	-	428
	etailed by-product inventory efine major work sequence	-	-	-	-	-	-	71 412	11 62	82 474	82 474	-	-	-	-	-	-	-	-	-	556 3,207
1a.1.13 Per	erform SER and EA	-	-	-	-	-	-	170	26	196	196	-	-	-	-	-	-	-	-	-	1,326
	epare/submit Defueled Technical Specifications	-	-	-	-	-	-	412	62	474	474	-	-	-	-	-	-	-	-	-	3,207
	erform Site-Specific Cost Study epare/submit Irradiated Fuel Management Plan	-	-	-	-	-	-	275 55	41 8	316 63	316 63	-	-	-	-	-	-	-	-	-	2,138 428
		-	-	-	-	-	-	99	0	69	69	-	-	-	-	-	-	-	-	-	426
Activity Speci 1a.1.17.1 Pla	ifications ant & temporary facilities	-	-	-	-	-	-	270	41	311	280	-	31	-	-	-	-	-	-	-	2,104
1a.1.17.2 Pla	ant systems	-	-	-	-	-	-	229	34	263	237	-	26	-	-	-	-	-	-	-	1,782
	SSS Decontamination Flush eactor internals	-	-	-	-	-	-	27 390	4 59	32 449	32 449	-	-	-	-	-	-	-	-	-	214 3,036
1a.1.17.4 Res		-	-	-	-	-	-	357	54	411	411	-	-	-	-	-	-	-	-	-	2,779
1a.1.17.6 Bio		-	-	-	-	-	-	27	4	32	32	-	-	-	-	-	-	-	-	-	214
	eam generators	-	-	-	-	-	-	171	26	197	197	-	-	-	-	-	-	-	-	-	1,334
1a.1.17.8 Rei 1a.1.17.9 Ma	einforced concrete	-	-	-	-	-	-	88 22	13 3		51	-	51 25	-	-	-	-	-	-	-	684 171
	ain Condensers	-	-	-	-	-	-	22	3		-	-	25 25	-	-	-	-	-	-	-	171
	ant structures & buildings	-	-	-	-	-	-	171	26	197	99	-	99	-	-	-	-	-	-	-	1,334
	aste management	-	-	-	-	-	-	253	38	291	291	-	-	-	-	-	-	-	-	-	1,967
1a.1.17.13 Fac	cility & site closeout	-	-	-	-	-	-	49 2,079	7 312	57 2,391	28 2,105	-	28 286	-	-	-	-	-	-	-	385 16,175
								2,010	012	2,001	2,100		200								10,170
	ite Preparations epare dismantling sequence							132	20	152	152	_									1,026
	ant prep. & temp. svces	-	-	-	-	-	-	3,500	525	4,025	4,025	-	-	-	-	-	-	-	-	-	1,020
1a.1.20 Des	esign water clean-up system	-	-	-	-	-	-	77	12	88	88	-	-	-	-	-	-	-	-	-	599
	gging/Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,400	360	2,760	2,760	-	-	-	-	-	-	-	-	-	526
	ocure casks/liners & containers btotal Period 1a Activity Costs	-	-	-		-	-	68 10,195	10 1,529	78 11,724	78 11,439	-	286		-	-	-	-	-	-	33,420
Period 1a Add	•							,	,	,	,										,
	ent Fuel Pool Isolation	-	-	-	-	-	-	8,450	1,268	9,718	9,718	-	-	-	-	-	_	-	-	-	-
1a.2 Sul	ibtotal Period 1a Additional Costs	-	-	-	-	-	-	8,450	1,268	9,718	9,718	-	-	-	-	-	-	-	-	-	-
Period 1a Coll	lateral Costs																				
	ent Fuel Capital and Transfer	-	-	-	-	-	-	1,330	199	1,529		1,529	-	-	-	-	-	-	-	-	-
	etention and Severance airie Island Indian Community Payments	-	-	-	-	-	-	8,394 1,249	1,259	9,653 1,249	9,653	1,249	-	-	-	-	-	-	-	-	-
	btotal Period 1a Collateral Costs	-	-	-	-	-	-	10,973	1,459	12,432	9,653	2,779		-	-	-	-	-	-	-	-
	riod-Dependent Costs							,	ŕ	,	,	ŕ									
	surance	-	_	_	_	_	_	1,660	166	1,826	1,826	-	_	_	-	_	_	_	-	-	-
1a.4.2 Pro	operty taxes	-	-	-	-	-	-	3,623	362	3,985	3,985	-	-	-	-	-	-	-	-	-	-
	ealth physics supplies	-	578	-	-	-	-	-	144	722	722	-	-	-	-	-	-	-	-	-	-
	eavy equipment rental sposal of DAW generated	-	753 -	11	-	-	47	-	113 13	866 76	866 76	-	-	-	- 565	-	-	-	11,299	18	<u>-</u>
	ant energy budget	-	-	- 11	-	, - -	41	1,621	243	1,864	1,864	-	-	-	-	-	-	-	11,299	-	, <u>-</u>
1a.4.7 NR	RC Fees	-	-	-	-	-	-	638	64	702	702	-	-	-	-	-	-	-	-	-	-
	nergency Planning Fees	-	-	-	-	-	-	2,174	217	2,392	1.050	2,392	-	-	-	-	-	-	-	-	-
	xed Overhead ent Fuel Pool O&M	-	-	-	-	-	-	1,440 422	216 63	1,656 486	1,656	486	-	-	-	-	-	-	-	-	-
	FSI Operating Costs	-	-	-	-	-	-	56	8	64	-	64		-	-	-	-	-	-	-	-

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Table C-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(111)	Jusanus	oi 2020 Dollars	•)											
Activity		Decon		Packaging		Off-Site Processing	LLRW Disposal	Other	Total	Total	NRC Lic. Term.	Spent Fuel Management	Site Restoration	Processed Volume	Class A	Class B			Burial / Processed	Craft	Utility and Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
	a Period-Dependent Costs (continued)						_	CO	9	70	70										
1a.4.12 1a.4.13	Railroad Track Maintenance Security Staff Cost	-	-	-	-	-	-	63 8,328	1,249	72 9,577	72 9,577	-	-		-	-	-	-	-	-	122,720
1a.4.14	Utility Staff Cost Subtotal Period 1a Period-Dependent Costs	-	- 1,331	-		-	-	21,681	3,252	24,933 49,221	24,933 46,279	-	-	-	- 565	-	-	-	- 11 000	-	345,280 468,000
1a.4	•	-		11	5	-	47		6,122			2,942	-	-		-	-	-	11,299	18	
1a.0	TOTAL PERIOD 1a COST	-	1,331	11	5	-	47	71,324	10,377	83,095	77,089	5,720	286	-	565	-	-	-	11,299	18	501,420
	D 1b - Decommissioning Preparations																				
Period 11	b Direct Decommissioning Activities																				
	l Work Procedures Plant systems	_	_	_	_	_	_	260	39	299	269	_	30	_	_	_	_	_	_	_	2,024
1b.1.1.2	NSSS Decontamination Flush	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
1b.1.1.3	Reactor internals Remaining buildings	-	-	-	-	-	-	137 74	21 11	158 85	158 21	-	- 64	-	-	-	-	-	-	-	1,069 577
	CRD cooling assembly	-		-	-	-		55	8	63	63	-	- 64			-	-	-	-	-	428
1b.1.1.6	CRD housings & ICI tubes	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
1b.1.1.7 1b.1.1.8	Incore instrumentation Reactor vessel	-	-	-	-	-	-	55 199	8 30	63 229	63 229	-	-	-	-	-	-	-	-	-	428 1,552
	Facility closeout	-	-	-	-	-	-	66	10	76	38	-	38	-	-	-	-	-	-	-	513
	0 Missile shields	-	-	-	-	-	-	25	4	28	28	-	-	-	-	-	-	-	-	-	192
	1 Biological shield 2 Steam generators	-		-	-	-	-	66 253	10 38	76 291	76 291	-	-		-	-	-	-	-		513 1,967
1b.1.1.13	3 Reinforced concrete	-	-	-	-	-	-	55	8	63	32	-	32	-	-	-	-	-	-	-	428
	4 Main Turbine 5 Main Condensers	-	-	-	-	-	-	86 86	13 13	99 99	-	-	99 99	-	-	-	-	-	-	-	667 667
	6 Auxiliary building	-		-	-	-	-	150	23	173	155	-	17		-	-		-	-		1,167
1b.1.1.17	7 Reactor building	-	-	-	-	-	-	150	23	173	155	-	17		-	-	-	-	-	-	1,167
1b.1.1	Total	-	-	-	-	-	-	1,827	274	2,101	1,706	-	395	-	-	-	-	-	-	-	14,215
1b.1.2 1b.1	Decon primary loop Subtotal Period 1b Activity Costs	572 572		-	-	-	-	1,827	286 560	859 2,959	859 2,564	-	395	-	-	-	-	-	-	1,067 1,067	14,215
	b Additional Costs																				
1b.2.1 1b.2.2	Site Characterization Mixed/Hazardous Waste	-	-	353	94	178	-	1,505	451 76	1,956 702	1,956 702	- -	-	6,132	-	-	-	-	351,977	8,988 2,348	3,563
1b.2.3	Asbestos Abatement	-	2,526	3	150	-	1,369	-	996	5,044	5,044	-	-	- 0,102	12,843	-	-	-	166,959	20,907	-
1b.2	Subtotal Period 1b Additional Costs	-	2,526	356	244	178	1,369	1,505	1,524	7,702	7,702	-	-	6,132	12,843	-	-	-	518,936	32,243	3,563
Period 11 1b.3.1	b Collateral Costs Decon equipment	1,055	_	_	_	_	_	_	158	1,213	1,213	_	_	_	_	_	_	_	-	-	_
1b.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-
1b.3.3	Process decommissioning water waste	25		16	29	-	66	-	35	172	172	-	-	-	152	-	-	-	9,127	30	Ē
1b.3.4 1b.3.5	Process decommissioning chemical flush waste Small tool allowance	2	36	61	199	-	3,889	-	1,009 5	5,159 42	5,159 42	-	-		-	588	-	-	62,689	110	-
1b.3.6	Pipe cutting equipment	-	1,200	-	-	-	-	-	180	1,380	1,380	-	-	-	-	-	-	-	-	-	-
1b.3.7 1b.3.8	Decon rig Spent Fuel Capital and Transfer	2,104	-	-	-	-	-	399	316 60	2,419 459	2,419	459	-	-	-	-	-	-	-	-	-
1b.3.9	Retention and Severance	-		-	-	-	-	4,017	603	4,620	4,620	409	-		-	-		-	-		-
1b.3.10	Prairie Island Indian Community Payments	-	-	-	-	-	-	623	-	623	10.450	623	-	-	-	-	-	-	-	-	-
1b.3	Subtotal Period 1b Collateral Costs	3,185	1,236	77	228	-	3,955	6,303	2,555	17,540	16,458	1,082	-	-	152	588	-	-	71,815	140	-
	b Period-Dependent Costs																				
1b.4.1 1b.4.2	Decon supplies Insurance	38	-	-	-	-	-	828	9 83	47 910	47 910	-	-	-	-	-	-	-	-	-	-
1b.4.2 1b.4.3	Property taxes	-	-	-	-	-	-	1,713	171	1,884	1,884	-	-	-	-	-	-	-	-	-	-
1b.4.4	Health physics supplies	-	449	-	-	-	-	-	112	561	561	-	-	-	-	-	-	-	-	-	-
1b.4.5 1b.4.6	Heavy equipment rental Disposal of DAW generated	-	375	- 6	- 3	-	27	-	56 8	432 43	432 43	-	-	-	324	-	-	-	6,473	11	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	1,617	243	1,859	1,859	-	-	-	-	-	-	-	-	-	-
1b.4.8	NRC Fees	=	-	-	-	-	-	196 1,084	20 108	216 1,193	216	1,193	-	-	-	-	-	-	-	-	-
1b.4.9 1b.4.10	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	718	108	1,193 826	826	-	-	-	-	-	-	-	-	-	-
1b.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	211	32	242	-	242	-	-	-	-	-	-	-	-	-
1b.4.12	ISFSI Operating Costs	-	-	-	-	-	-	28	4	32	-	32	-	-	-	-	-	-	-	-	-

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Table C-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(111)	ousanus (	oi 2020 Dollar	3)											
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Poriod 1h Por	riod-Dependent Costs (continued)																		·		
1b.4.13 Ra	ailroad Track Maintenance	-	-	-	-	-	-	31	5	36	36	-	-	-	-	-	-	-	-	-	-
	ecurity Staff Cost	=	-	-	=	-	-	4,153	623	4,775	4,775	-	-	-	-	-	-	-	-	-	61,192
	OC Staff Cost tility Staff Cost	-	-	-	-	-	-	4,182 10,811	627 1,622	4,810 12,432	4,810 12,432	-	-		-	-	-	-	-	-	46,672 172,167
	ubtotal Period 1b Period-Dependent Costs	38	825	6	3	-	27	25,571	3,830	30,299	28,832	1,467	-	-	324	-	-	-	6,473	11	
1b.0 TO	OTAL PERIOD 1b COST	3,795	4,586	440	475	178	5,351	35,206	8,470	58,501	55,557	2,549	395	6,132	13,319	588	-	-	597,225	33,460	297,808
PERIOD 1 T	TOTALS	3,795	5,917	451	479	178	5,398	106,531	18,847	141,595	132,646	8,269	681	6,132	13,884	588	-	-	608,524	33,478	799,228
PERIOD 2a	- Large Component Removal																				
Period 2a Dir	rect Decommissioning Activities																				
	m Supply System Removal																				
	eactor Coolant Piping ressurizer Relief Tank	54 24			18 12	-	187 125	-	89 51	406 238	406 238	-	-	-	508 338		-	-	35,411 23,594	1,421 630	-
	eactor Coolant Pumps & Motors	57				-	463	-	186	977	977	-	-	-	2,332		-	-	295,800	2,049	100
2a.1.1.4 Pro		-	77			-	776		278	1,732	1,732	-	-	-	2,196		-	-	185,015	1,666	938
	eam Generators RDMs/ICIs/Service Structure Removal	302	3,307 281			2,409	4,001 938	-	2,681 488	16,437 2,294	16,437 2,294	-	-	18,672	11,316 4,797		-	-	1,689,435 177,400	11,613 8,104	2,875
	eactor Vessel Internals	82				-	9,015	307	11,878	40,693	40,693	-	-	-	501		673	-	164,987	25,123	1,163
	eactor Vessel otals	94 613				2,409	2,975	307 614	6,804	18,982 81,759	18,982 81,759	-	-	18,672	8,073 30,062		-	-	576,524 3,148,166	25,123	1,163 6,240
		619	14,709	10,764	5,714	2,409	18,480	614	22,455	61,759	61,759	-	-	10,012	30,062	120	619	-	5,146,166	75,729	6,240
	Iajor Equipment ain Turbine/Generator		331	150	64	FOR	077		900	1.550	1.550			0.101	1 107				203.265	4.667	
	ain Turbine/Generator ain Condensers	-	2,801			527 705	377 533	-	283 960	1,752 5,170	1,752 5,170	-	-	2,131 3,800	1,187 1,587		-	-	203,265 271,824	39,151	-
Cascading Co	osts from Clean Building Demolition																				
2a.1.4.1 Re		-	794	-	-	-	-	-	119	913	913	-	-	-	-	-	-	-	-	7,589	-
	uxiliary	-	221		-	-	-	-	33	254	254	-	-	-	-	-	-	-	-	1,309	
	adwaste otals	-	9 1,023	-	-	-	-	-	1 154	10 1,177	10 1,177	- -	-	-	-	-	-	-	-	65 8,963	
Disposal of Pl																					
	dmin Bldg Ventilation	-	6	-	-	-	-	-	1	7	_	-	7	-	-	-	-	-	-	90	_
	r Removal	-	29		-	-	-	-	4	33	-	-	33	-	-	-	-	-	-	422	
	uxiliary Feedwater uxiliary Feedwater - RCA	-	46 38		- 1	30	-	-	7 14	53 84	84	-	53	178	-	-	-	-	7,214	676 486	
	leed Steam	-	90		-	-	-		13	103	-	-	103	-	-				7,214	1,331	-
2a.1.5.6 Ca	austic Addition - RCA	-	40	0	2	40	-	-	16	99	99	-	-	240	-	-	-	-	9,761	468	-
	nemical Feed nemical Feed - RCA	-	17 3	- 0	- 0	-	-	-	3	20	- 7	-	20	16	-	-	-	-	634	261 31	-
	rculating Water	-	27		-	-	-	-	4	32	- '	-	32	- 16	-	-	-	-	- 654	401	-
2a.1.5.10 Co	ondensate	-	525	-	-	-	-	-	79	603	-	-	603	-	-	-	-	-	-	7,537	-
	ondensate Polishing ondensate Polishing - RCA	-	208 38		- 4	81	-	-	31 22	239 145	145	-	239	483	-	-	-	-	19,616	2,987 493	-
	ectro-Hydraulic	-	10		4	- 01		-	1	145	145	-	11	465	-	-	-	-	19,616	143	-
2a.1.5.14 Ex	xternal Circulating Water	-	26	-	-	-	-	-	4	30	-	-	30	-	-	-	-	-	-	385	-
	kternal Circulating Water - RCA	-	72		5	121	-	-	37	237	237	-	-	721	-	-	-	-	29,284	938	-
2a.1.5.16 Fe	eedwater eedwater - RCA	-	127 248		31	694	-	-	19 171	146 1,152	1,152	-	146	4,147	-	-		-	168,414	1,840 3,377	-
2a.1.5.18 Gla		-	34		-	-	-	-	5	39	- 1,102	-	39		-	-	-	-	-	504	-
2a.1.5.19 He		-	384	-	-	-	-	-	58	441	-	-	441	-	-	-	-	-	-	5,638	-
2a.1.5.20 Hy	ypobromous Acid Feed ypobromous Acid Feed - RCA	-	6	- 0	- 0	- 0	-	-	1	$\frac{7}{2}$	2	-	7	- 2	-	-	-	-	100	86 12	-
	ternal Circ Water & CDSR	-	25	-	-	-	-	-	4	29	-	-	29	-	-	-	-	-	-	366	-
2a.1.5.23 Ma	ain Gen/Exciter/Transformer	-	0	-	-	-	-	-	0		-	-	0	-	-	-	-	-	-	5	-
2a.1.5.24 Ma	ain Steam ain Steam - RCA	-	101 380		- 38	864	-	-	15 231	116 1,525	1,525	-	116	5,166	-	-	-	-	209,799	1,482 5,146	-
	ain Steam - RCA epairable Spare Snubbers	-	380 6	0	38	864	-	-	231	1,525	1,525	-	-	5,166 12		-	-	-	209,799	5,146 82	-
	eam Exclusion	-	2	-	-		-	-	0		-	-	2	-		-	-	-	-	32	
2a.1.5.28 Ste	eam Exclusion - RCA	-	4	0	0	4	-	-	2	10	10	-	-	24		-	-	-	966	47	-
	eam Generator Blowdown eam Generators	-	416 5	21	27	319	215	-	212 1	1,210 6	1,210	-	- 6	1,906	631	-	-	-	118,130	5,778 75	-
	urbine & Moisture Separators	-	377		-	-	-	-	57	434		-	434	-		-	-	-		5,472	-

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Table C-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(1110	ousanus c	f 2020 Dollar	5)											
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
	of Plant Systems (continued)																		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	or Flant Systems (continued) Turbine Oil Purification	-	53	_	_	_	_	_	8	61	_	_	61	_	_	_	-	_	-	757	_
	Water Treatment	-	453	-	-	-	-	-	68	521	-	=	521	-	-	-	-	-	-	6,677	-
	Water Treatment - RCA	-	20	0	1	19	-	-	8	49	49	=	-	115		-	-	-	4,652	252	-
2a.1.5	Totals	-	3,817	43	108	2,177	215	-	1,100	7,461	4,528	-	2,933	13,010	631	-	-	-	569,060	54,280	-
2a.1.6	Scaffolding in support of decommissioning	-	3,020	22	10	188	30	-	794	4,064	4,064	-	-	1,012	89	-	-	-	51,216	26,270	-
2a.1	Subtotal Period 2a Activity Costs	613	25,702	19,110	3,959	6,005	19,635	614	25,745	101,384	98,450	-	2,933	38,625	33,556	125	673	-	4,243,531	209,060	6,240
	a Additional Costs																				
2a.2.1 2a.2	Retired RPV Upper Internals Package Subtotal Period 2a Additional Costs	<del>-</del>	257 257	387 387	217 217	-	1,394 1,394	-	1,041 1,041	3,296 3,296	3,296 3,296	-	-	-	376 376	112 112	-	-	50,164 $50,164$	3,333 3,333	133 133
Period 2a	a Collateral Costs																				
2a.3.1	Process decommissioning water waste	49	-	33	60	-	134	-	70	347	347	=	-	-	308	-	-	-	18,487	60	-
2a.3.3	Small tool allowance	-	269	-	-	-	-	-	40	309	278	-	31	-	-	-	-	-	-	-	-
2a.3.4	Spent Fuel Capital and Transfer	-	-	-	-	-	-	8,862	1,329	10,192	-	10,192	-	-	-	-	-	-	-	-	-
2a.3.5	Retention and Severance Prairie Island Indian Community Payments	-	-	-	-	-	-	8,215	1,232	9,447	9,447	1.700	-	-	-	-	-	•	-	-	-
2a.3.6 2a.3	Subtotal Period 2a Collateral Costs	49	269	33	60	-	134	1,780 18,857	2,672	1,780 $22,074$	10,072	1,780 11,971	31	-	308	-	-	-	18,487	60	-
Period 2a	a Period-Dependent Costs																				
2a.4.1	Decon supplies	107	-	-	-	-	-	-	27	134	134	=	-	_	-	-	_	-	-	_	-
2a.4.2	Insurance	-	-	-	-	-	-	690	69	759	759	-	-	-	-	-	-	-	-	-	-
2a.4.3	Property taxes	-	-	-	-	-	-	4,548	455	5,002	5,002	-	-	-	-	-	-	-	-	-	-
2a.4.4	Health physics supplies	-	2,103	-	-	-	-	-	526	2,629	2,629	=	-	-	-	-	-	-	-	-	-
2a.4.5	Heavy equipment rental	-	3,565	-	-	-	-	-	535	4,100	4,100	-	-	-	- 4 0 4 7	-	-	-		-	-
2a.4.6 2a.4.7	Disposal of DAW generated Plant energy budget	-	•	86	35	-	358	2,194	103 329	582 2,523	582 2,523	-	-	-	4,345	-	-	-	86,891	142	-
2a.4.7 2a.4.8	NRC Fees		-	-	-	-	-	526	53	578	578		-		-	-	-	-	-	-	-
2a.4.9	Emergency Planning Fees	-	-	-	-	-	-	2,647	265	2,912	-	2,912	_	_	-	-	-	-	-	-	-
2a.4.10	Fixed Overhead	-	-	-	-	-	-	1,695	254	1,949	1,949	-,	-	-	-	-	-	-	-	-	-
2a.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	602	90	692	-	692	-	-	-	-	-	-	-	-	-
2a.4.12	ISFSI Operating Costs	-	-	-	-	-	-	80	12		-	92	-	-	-	-	-	-	-	-	-
2a.4.13	Railroad Track Maintenance	-	-	-	-	-	-	318	48	366	366	-	-	-	-	-	-	-	-	-	-
2a.4.14	Remedial Actions Surveys	-	-	-	-	-	-	1,596 10,900	239 1,635	1,835 12,534	1,835 12,534	-	-	-	-	-	-	-	-	-	160,018
2a.4.15 2a.4.16	Security Staff Cost DOC Staff Cost	-	-		-	-	-	20,663	3,099	23,763	23,763	-	-	-	_	-	-	-	-	-	225,210
2a.4.17	Utility Staff Cost	-	-	-	-	-	-	27,056	4,058	31,115	31,115	-	-	-	-	-	-	-	-	-	419,049
2a.4	Subtotal Period 2a Period-Dependent Costs	107	5,668	86	35	-	358	73,514	11,797	91,565	87,870	3,696	-	-	4,345	-	-	-	86,891	142	804,276
2a.0	TOTAL PERIOD 2a COST	770	31,895	19,616	4,270	6,005	21,522	92,985	41,255	218,319	199,687	15,667	2,964	38,625	38,584	237	673	-	4,399,073	212,595	810,649
PERIOD	2b - Site Decontamination																				
Period 2b	Direct Decommissioning Activities																				
Disposal	of Plant Systems																				
	ADT & Misc Ventilation	=	25	1	1	26	3	-	11	66	66	=	-	153		-	-	-	6,803	363	-
2b.1.1.2	Aux Bldg Normal Ventilation	-	69	2	6	116	13	-	39	246	246	-	-	692		-	-	-	30,595	1,013	-
2b.1.1.3	Aux Bldg Special Ventilation	-	14	0	1	12	2	-	6		34	-	- ~	70	6	-	-	-	3,234	197	-
2b.1.1.4 2b.1.1.5	Battery Rm Special Ventilation Boron Recycle	- 0	2	- 0	- 0	- 0	- 3	-	0 2	2 10	10	-	2	- 3	- 9	-	-	-	700	24 50	-
2b.1.1.6	Chemical & Volume Control	749	942	62	57	394	677	-	853	3,736	3,736	-	-	2,356	· ·	-	-	-	223,753	23,197	-
2b.1.1.7	Cold Chemical Lab Ventilation	-	1		-	-	-	-	0	1	-	-	1	-	-	-	-	-		20,101	-
2b.1.1.8	Component Cooling - RCA	-	647	25	88	2,007	-	-	479	3,246	3,246	-	-	11,996	-	-	-	-	487,169	8,583	-
2b.1.1.9	Containment Cooling	-	35	-	-	-	-	-	5	40	-	-	40	-	-	-	-	-	-	502	-
	Containment Cooling - RCA	-	302	6	20	459	-	-	148	934	934	-	-	2,743		-	-	-	111,390	3,949	-
	Containment Hydrogen Control - RCA	-	36	0	1	24	-	-	13	74	74	-	-	141	-	-	-	-	5,742	494	-
	Containment Spray - RCA Containment Ventilation	-	194 235	3 23	11 49	243 790	243	-	87 248	538 1,587	538 1,587	-	-	1,453 4,721	722	-	-	-	59,019 237,643	2,617 3,375	-
	Control/Relay/Cmptr Rm Vent	-	235 31	23 1	49	44	243 7	-	248 17	1,587	1,587	-	-	4,721 260			-		11,878	3,375 454	-
	Cooling Water	-	159	-		-	. '	-	24	183	102	-	183	-	-	-	_	-	-	2,344	-
	Cooling Water - RCA	-	476	17	62	1,412	-	_	342		2,310	-	-	8,442	-	-	-	-	342,822	6,311	-
	Cranes/Hoists/Elevators - RCA	-	3	0	1	17	-	-	4	25	25	-	-	103		-	-	-	4,184	48	-
	D3 Emergency Diesel	-	10	-	-	-	-	-	2	12	-	-	12		-	-	-	-	-	141	-
2b.1.1.19	D4 Emergency Diesel	-	10	-	-	-	-	-	2	12	-	-	12	-	-	-	-	-	-	141	-

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Table C-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(111)	Jusanus 0	oi 2020 Dollar	3)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activi		Decon	Removal	Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Inde	x Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Disposa	al of Plant Systems (continued)																				
2b.1.1.2	20 D5 Emergency Diesel	-	0	-	-	-	-	-	0	0	-	-	0	-	-	-	-	-	-	5	-
	21 Electrical - Clean	-	1,714	- 5	-	-	-	-	257	1,972		-	1,972	-	-	-	-	-	-	24,276	-
	22 Electrical - Contaminated 23 Electrical - Decontaminated	-	475 $2,955$	5 38	16 138	334 3,138	25	-	178 1,234	1,034 7,503	1,034 7,503	-	-	1,997 18,753	75	-	-		85,887 761,569	6,503 38,423	-
	24 Filter Rm Ventilation	-	5	0	0	4	0	-	2	11	11	-	_	24	1	-	_		1,017	69	-
	25 Fire Protection & Detection	-	204	-	-	-	-	-	31	235	-	-	235	-	-	-	-	-	´-	3,009	-
	26 Fire Protection & Detection - RCA	-	246	4	13	306		-	110	679	679	-	-	1,828	-	-	-	-	74,245	3,134	-
	77 Fuel Handling 28 Fuel Oil	-	74	1	2	34	17	-	28	156	156	-	- 1	200	49	-	-	-	11,273	1,101	-
	29 HVAC - Clean	-	151	-	-	-		-	23	174	-	-	174	-	-	-	-		-	2,373	-
	30 HVAC - Contaminated	-	1,231	29	87	1,798	136	-	627	3,908	3,908	-	-	10,745	405	-	-		462,103	16,579	-
	31 Heating	-	322	-		-	-	-	48	370		-	370		-	-	-	-		4,804	-
	32 Heating - RCA	-	337	4	14	319 18	- 1	-	135	809 48	809 48	-	-	1,907	- 4	-	-	-	77,458	4,086	-
	33 Hot Lab & Sample Rm Ventilation 34 Incore Instrumentation	0	20 30	1	2	10	20	-	14	46 77	46 77	-	-	107 60	58	-	-	-	4,622 6,143	285 458	-
	35 Misc Drains & Vents	-	234	12	12	77	145	-	109	590	590	-	-	458	426	-	-	-	46,079	3,180	-
	36 Misc Lab & Service Areas Vent	-	129	8	8	62	84	-	65	356	356	-	-	370	244	-	-	-	30,899	1,713	-
	37 Miscellaneous Gas	-	72		- ,	-	-	-	11	83	-	-	83	-	-	-	-	-	-	1,073	-
	88 Miscellaneous Gas - RCA 89 Radiation Monitoring	-	134 7	1	4	100	-	-	49	289	289	-	- 9	600	-	-	-	-	24,378	1,636 111	-
	10 Radiation Monitoring - RCA	-	65	1	2	53		-	25	145	145	-	-	316	-	-	-		12,826	782	-
	11 Reactor Coolant	163	236	20	16	38	249	-	213	937	937	-	-	229	730	-	-		56,440	5,517	-
	2 Reactor Hot Sampling	140	126	11	7	9	108	-	132	533	533	-		54	312	-	-	-	22,678	3,686	-
	13 Reactor Makeup 14 Reactor Makeup - RCA	-	41 4	- 0	-	- 5	-	-	6 2	47	11	-	47	28	-	-	-	-	1,148	583 47	-
	15 Reactor Vessel	9	18	1	0	4	- 5	-	11	11 47	47	-	-	28	14	-	-		1,148	385	-
	16 Residual Heat Removal	348	393	84	86	477	1,102	-	641	3,132	3,132	-	_	2,853	3,244	-	-	-	324,232	7,112	-
	17 Safeguards Chilled Water	-	5	-	=	-	-	-	1	6	· -	-	6	-	-	-	-	-	-	75	-
	18 Safety Injection	-	874	42	72	1,117	395	-	500	3,000	3,000	-	-	6,676	1,161	-	-	-	345,708	12,284	-
	19 Sampling 50 Service Bldg & New Cmptr Vent	-	52 0	3	2	6	32	-	23	119 0	119	-	- 0	37	93	-	-	•	7,628	714 6	-
	51 Shield Bldg Ventilation	-	120	13	25	339	163		127	787	787	-	- 0	2,028	484	-	-		113,139	1,743	-
	52 Station & Instrument Air	-	161	-	-	-		-	24	185	-	-	185	-		-	-		-	2,424	-
	53 Station & Instrument Air - RCA	-	299	3	12	272	-	-	118	704	704	-	-	1,625	-	-	-	-	65,986	3,638	-
	54 Turbine Bldg Traps & Drains	-	30 30	- 0	- 1	30	-	-	5 12	35 73	73	-	35	180	-	-	-	-	7,321	462	-
	55 Turbine Bldg Traps & Drains - RCA 56 Turbine Bldg Ventilation	-	46	-		- 50		-	7	75 53	- 10	-	53	100	-	-	-		7,321	344 655	-
	77 Unit Coolers	-	23		-	_	-	-	3	26	_	-	26	_	-	-	_		-	332	-
2b.1.1.5	58 Unit Coolers - RCA	-	56		2	39	-	-	20	117	117	-	-	232	-	-	-	-	9,413	690	-
	59 Waste Gas Disposal	553	479		45	410	464	-	585	2,581	2,581	-	-	2,453	1,358	-	-	-	187,339	14,308	-
2b.1.1.6 2b.1.1.6	60 Waste Liquid Disposal 61 Waste Solid Disposal	1,436 115	1,800 145	116 12	100 11	612 65	1,234 134	-	1,595 140	6,893 622	6,893 622	-	-	3,655 389	3,594 393	-	-	-	381,754 41,177	44,485 3,481	-
2b.1.1.0		3,515	16,542		980	15,220	5,264		9,399	51,516	48,072	-	3,444	90,963	15,429	-	-		4,689,210	270,390	-
		-,	,			,	-,		-,	,	,		-,	,	,				-,,	,	
2b.1.2	Scaffolding in support of decommissioning	-	3,775	27	13	235	37	-	993	5,081	5,081	-	-	1,265	112	-	-	-	64,020	32,837	-
December	amination of Site Buildings																				
2b.1.3.1		1,215	2,808	240	1,236	373	13,625	_	4,981	24,479	24,479	-	-	2,230	83,434	_		-	3,633,771	50,962	-
2b.1.3.2		1,292	422	23	117	177	648	-	960	3,639	3,639	-	-	1,060	6,118	-	-	-	332,495	23,821	-
2b.1.3.3			28	3	17		97	-	34	179	179	-	-		929	-	-	-	43,896	301	-
2b.1.3.4		18	9		3	3	14	-	16	63	63	-	-	19	135	-	-	-	7,118	369	-
2b.1.3.5 2b.1.3.6		123 55	54 24	3 1	17 8	6 7	96 43	-	103 47	403 185	403 185	-	-	38 42	920 412	-	_	-	44,971 21,136	2,426 1,083	-
2b.1.3.7		16	12	-	3	14	14	-	17	76		-	_	83	124	-	-	-	9,271	383	-
2b.1.3	Totals	2,720	3,357	271	1,400	581	14,537	-	6,158	29,024	29,024	-	-	3,471	92,071	-	-	-	4,092,658	79,343	-
2b.1.4	Prepare/submit License Termination Plan					_	_	225	34	259	259		_						_	-	1,751
2b.1.4 2b.1.5	Receive NRC approval of termination plan	-	-	-	-	-	-	220	94	200 a	255	-	-	-	-	-	-	-	-	-	1,751
2b.1	Subtotal Period 2b Activity Costs	6,235	23,674	895	2,393	16,035	19,839	225	16,584	85,879	82,435	-	3,444	95,700	107,611	-	-	-	8,845,887	382,570	1,751
	•	,	•		•	•	•			•			,	•						•	•
Period 2 2b.2.1	2b Additional Costs Operational Equipment			11	36	606			97	751	751			5,880					147,000	16	
2b.2.1 2b.2.2	Excavation of Underground Services	-	1,175		-	-	-	225	328	1,728	1,728	-	-	5,000	-	-	-	-	147,000	7,411	-
2b.2.3	Security Modifications	-	-	-	-	-	-	4,348	652	5,000	5,000	-	-	-	-	-	-	-	-	· -	-
2b.2	Subtotal Period 2b Additional Costs	-	1,175	11	36	606	-	4,573	1,077	7,478	7,478	-	-	5,880	-	-	-	-	147,000	7,427	-

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Table C-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(1110	usunus o	of 2020 Dollars	••											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial \	Volumes		Burial/		Utility and
Activit		Decon		Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Period 2	b Collateral Costs																				
2b.3.1	Process decommissioning water waste	166	-	113	203	-	456	-	239	1,176	1,176	-	-	-	1,047	-	-	-	62,844	204	-
2b.3.2	Process decommissioning chemical flush waste	3	-	119	390	-	893	-	295	1,699	1,699	-	-	-	1,154	-	-	-	122,948	216	-
2b.3.3	Small tool allowance	-	446	-	-	-	-		67	513	513		-	-	-	-	-	-	-	-	-
2b.3.4	Spent Fuel Capital and Transfer	-	-	-	-	-	-	49,770	7,465	57,235	- 0.00	57,235	-	-	-	-	-	-	-	-	-
2b.3.5 2b.3.6	Retention and Severance Prairie Island Indian Community Payments	-	-	-	-	-	-	2,839 1,348	426	3,265 1,348	3,265	1,348	-	-	-	-	-	-	-	-	-
2b.3.7	On-site survey and release of 0.437 tons clean metallic waste	-	-	-	-	-	-	1,540	0	1,540	1	1,540	-	-	-	-	-	-	-	-	-
2b.3	Subtotal Period 2b Collateral Costs	169	446	232	592	-	1,349	53,958	8,492	65,237	6,654	58,583	-	-	2,201	-	-	-	185,792	420	-
Period 2	b Period-Dependent Costs																				
2b.4.1	Decon supplies	1,219	-	-	-	-	-	-	305	1,524	1,524	-	-	-	-	-	_	-	-	-	-
2b.4.2	Insurance	-	-	-	-	-	-	523	52	575	575	-	-	-	-	-	-	-	-	-	-
2b.4.3	Property taxes	-		-	-	-	-	3,075	308	3,383	3,383	-	-	-	-	-	-	-	-	-	-
2b.4.4	Health physics supplies	-	2,866		-	-	-	-	716	3,582 3,190	3,582	-	-	-	-	-	-	-	-	-	-
2b.4.5 2b.4.6	Heavy equipment rental Disposal of DAW generated	-	2,774	103	42	-	429	-	416 124	698	3,190 698	-	-	-	5,209	-	-	-	104,172	170	-
2b.4.7	Plant energy budget	-	_	-	-	-	-	1,313	197	1,509	1,509	-	_	-		-	-	_	104,172	-	-
2b.4.8	NRC Fees	-	-	-	-	-	-	398	40	438	438	-	-	-	-	-	-	-	-	-	-
2b.4.9	Emergency Planning Fees	-	-	-	-	-	-	2,006	201	2,207	-	2,207	-	-	-	-	-	-	-	-	-
2b.4.10	Fixed Overhead	-	-	-	-	-	-	1,284	193	1,477	1,477	-	-	-	-	-	-	-	-	-	-
2b.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	456	68	524	-	524	-	-	-	-	-	-	-	-	-
2b.4.12 2b.4.13	Liquid Radwaste Processing Equipment/Services ISFSI Operating Costs	-	-	-	-	-	-	229 60	34 9	264 69	264	69	-	-	-	-	-	-	-	-	-
2b.4.13 2b.4.14	Railroad Track Maintenance	-	-	-	-	-	-	67	10	78	78	-	-	-	-	-	-	-	-	-	-
2b.4.15	Remedial Actions Surveys	-	_	-	-	-	-	1,209	181	1,391	1,391	-	_	-	-	-	-	-	_	-	-
2b.4.16	Security Staff Cost	-	-	-	-	-	-	8,259	1,239	9,497	9,497	-	-	-	-	-	-	-	-	-	121,244
2b.4.17	DOC Staff Cost	-	-	-	-	-	-	15,117	2,268	17,385	17,385	-	-	-	-	-	-	-	-	-	163,904
2b.4.18	Utility Staff Cost	-	-	-	-	-	-	19,642	2,946	22,588	22,588	-	-	-	-	-	-	-	-	-	304,233
2b.4	Subtotal Period 2b Period-Dependent Costs	1,219	5,640	103	42	-	429	53,639	9,307	70,380	67,579	2,800	-	-	5,209	-	-	-	104,172	170	589,381
2b.0	TOTAL PERIOD 2b COST	7,623	30,935	1,242	3,063	16,641	21,617	112,395	35,460	228,975	164,147	61,384	3,444	101,580	115,021	-	-	-	9,282,851	390,587	591,132
PERIO	O 2d - Decontamination Following Wet Fuel Storage																				
Period 2	d Direct Decommissioning Activities																				
2d.1.1	Remove spent fuel racks	347	35	86	41	-	703	-	373	1,585	1,585	-	-	-	2,092	-	-	-	132,919	576	-
Dienosal	of Plant Systems																				
2d.1.2.1	Electrical - Contaminated - Fuel Pool	-	203	2	7	145	11	-	77	445	445	-	_	864	33	-	-	-	37,167	2,783	-
2d.1.2.2	Electrical - Decontaminated - Fuel Pool	_	1,269		59	1,350		-	530	3,225	3,225	-	_	8,069		-	-	-	327,668	16,495	-
2d.1.2.3	Fire Protection & Detection - RCA Fuel P	-	37		2	48		-	17	105	105	-	-	286		-	-	-	11,622	476	-
2d.1.2.4	HVAC - Contaminated - Fuel Pool	-	553			808	61	-	282	1,756	1,756	-	-	4,828		-	-	-	207,612	7,448	-
2d.1.2.5 2d.1.2.6	Safeguards Chilled Water - RCA Spent Fuel Pool Cooling	32	5 36		0 2	4	37	-	2 36	11 152	11 152	-	-	26 39		-	-	-	1,045 8,481	51 882	-
2d.1.2.6 2d.1.2.7	Spent Fuel Pool Normal Ventilation	32	27		2 2	44			36 15	93	93	-	-	265		-		-	8,481 11,505	882 394	-
2d.1.2.7	Totals	32	2,130		_	2,405			958	5,786	5,786	_	_	14,376		-	-	-	605,100	28,530	-
			,			,				.,	.,			,						-,	
	mination of Site Buildings	1 000	1 - 0 0				100			0.513	0.5.5			0 :-=	1.050				155 5	20.42:	
2d.1.3.1 2d.1.3	Fuel Handling of Aux Building Totals	1,029 1,029	1,138 1,138			404 404		-	916 916	3,741 3,741	3,741 3,741	-	-	2,417		-	-	-	177,755 177,755	30,404 30,404	-
20.1.3	Totals	1,029	1,138	13	45	404	195	-	916	3,741	3,741	-	-	2,417	1,652	-	-	-	177,755	30,404	-
2d.1.4	Scaffolding in support of decommissioning	-	755	5	3	47	7	-	199	1,016	1,016	-	-	253	22	-	-	-	12,804	6,567	-
2d.1	Subtotal Period 2d Activity Costs	1,408	4,058	141	202	2,857	1,018	-	2,445	12,128	12,128	-	-	17,046	4,099	-	-	-	928,579	66,078	-
Period 2	d Additional Costs																				
2d.2.1	License Termination Survey Planning	-	-	-	-	-	-	1,037	311	1,348	1,348	-	-	-	-	-	-	-	-	-	6,240
2d.2	Subtotal Period 2d Additional Costs	-	-	-	-	-	-	1,037	311	1,348	1,348	-	-	-	-	-	-	-	-	-	6,240
	d Collateral Costs																				
2d.3.1	Process decommissioning water waste	45	-	31	56	-	126	-	65	323	323	-	-	-	288	-	-	-	17,293	56	-
2d.3.2 2d.3.3	Process decommissioning chemical flush waste Small tool allowance	0	- 83	1	5	-	10	-	3 12	20 95	20 95	-	-	-	13	-	-	-	1,422	2	-
2d.3.3 2d.3.4	Small tool allowance Decommissioning Equipment Disposition		83	130	67	1,112		-	12 234	1,722	1,722	-	-	6,000	529	-	-		303,608	147	-
2d.3.4	Spent Fuel Capital and Transfer	-	-	-	-	1,112	-	1,159	174	1,333	1,722	1,333	-	- 0,000	- 525	-		-	-	-	-
2d.3.6	Prairie Island Indian Community Payments	-	-	-	-	-	-	975	-	975	-	975	-	-	-	-	-	-	-	-	-
2d.3	Subtotal Period 2d Collateral Costs	45	83	162	128	1,112	314	2,135	490	4,468	2,160	2,308	-	6,000	831	-	-	-	322,324	206	-

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Table C-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial \	Volumes		Burial /		Utility and
Activit		Decon			Transport		Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Period 9	d Period-Dependent Costs																				
2d.4.1	Decon supplies	236	-	-	-	-	-	-	59	295	295	-	-	-	-	-	-	-	-	-	=
2d.4.2	Insurance	-	-	-	-	-	-	378	38	416	416	-	-	-	-	-	-	-	-	-	-
2d.4.3	Property taxes	-	-	-	-	-	-	2,004	200	2,204	2,204	-	-	-	-	-	-	-	-	-	-
2d.4.4	Health physics supplies	-	794	-	-	-	-	-	198	992	992	-	-	-	-	-	-	-	-	-	-
2d.4.5	Heavy equipment rental Disposal of DAW generated	-	2,007	40	16	-	165	-	301 48	2,308 268	2,308 268	-	-	-	2.002	-	-	-	40.031	65	-
2d.4.6 2d.4.7	Plant energy budget	-	-	40	10		160	506	46 76	582	582	-	-	-	2,002	-	-	-	40,031	- 69	-
2d.4.8	NRC Fees	_	_	-	_	_	-	277	28	305	305	_	_	_	-	-	_	_	_	-	-
2d.4.9	Emergency Planning Fees	-	-	-	-	-	-	58	6	64	-	64	-	-	-	-	-	_	-	-	-
2d.4.10	Fixed Overhead	-	-	-	-	-	-	929	139	1,068	1,068	-	-	-	-	-	-	-	-	-	-
2d.4.11	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	332	50	381	381	-	-	-	-	-	-	-	-	-	-
2d.4.12	ISFSI Operating Costs	-	-	-	-	-	-	44	7	50	-	50	-	-	-	-	-	-	-	-	-
2d.4.13	Railroad Track Maintenance Remedial Actions Surveys	-	-	-	-	-	-	49 875	7 131	56 1,006	56 1,006	-	-	-	-	-	-	-	-	-	-
2d.4.14 2d.4.15	Security Staff Cost	-	-	-	-	-	-	5,782	867	6,649	4,694	1,955	-	-	-	-	-	-	-	-	84,454
2d.4.16	DOC Staff Cost	-	-	-	-	-	-	6,401	960	7,361	7,361	1,555	-	-	-	-	-		-	-	70,243
2d.4.17	Utility Staff Cost	-	-	_	-	-	_	8,100	1,215	9,315	8,858	456	-	-	-	-	_	-	-	-	126,681
2d.4	Subtotal Period 2d Period-Dependent Costs	236	2,801	40	16	-	165	25,734	4,330	33,321	30,796	2,525	-	-	2,002	-	-	-	40,031	65	281,377
2d.0	TOTAL PERIOD 2d COST	1,689	6,941	343	346	3,969	1,496	28,905	7,576	51,265	46,432	4,834	÷	23,046	6,931	-	-	-	1,290,933	66,348	287,617
PERIO	D 2f - License Termination																				
Dowied 9	f Direct Decommissioning Activities																				
2f.1.1	ORISE confirmatory survey	_	_	_	_	_	_	166	50	216	216	_	_	_	_	_	_	_	_	_	_
2f.1.2	Terminate license							100	90	210 a	210										
2f.1	Subtotal Period 2f Activity Costs	-	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-
	f Additional Costs							<b>5</b> 0.43	0.110	0.154	0.154									100.00	0.100
2f.2.1 2f.2	License Termination Survey Subtotal Period 2f Additional Costs	-	-	-	-	-	-	7,041 7,041	2,112 2,112	9,154 9,154	9,154 9,154	-	-	-	-	-	-	-	-	100,895 100,895	3,120 3,120
21.2	Subtotal Feriod 21 Additional Costs	-	-	-	-	-	-	7,041	2,112	9,154	9,154	-	-	-	-	-	-	-	-	100,895	3,120
Period 2	f Collateral Costs																				
2f.3.1	DOC staff relocation expenses	-	-	-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-
2f.3.2	Spent Fuel Capital and Transfer	-	-	-	-	-	-	603	90	693	-	693	-	-	-	-	-	-	-	-	-
2f.3.3	Prairie Island Indian Community Payments	-	-	-	-	-	-	934	-	934	-	934	-	-	-	-	-	-	-	-	-
2f.3	Subtotal Period 2f Collateral Costs	-	-	-	-	-	-	2,801	280	3,081	1,454	1,628	-	-	-	-	-	-	-	-	-
	f Period-Dependent Costs																				
2f.4.1	Insurance	-	-	-	-	-	-	362	36	398	398	-	-	-	-	-	-	-	-	-	-
2f.4.2	Property taxes	-	-	-	-	-	-	1,771	177	1,948	1,948	-	-	-	-	-	-	-	-	-	-
2f.4.3 2f.4.4	Health physics supplies Disposal of DAW generated	-	710	- 7	- 9	-	28	-	178 8	888 45	888 45	-	-	-	334	-	-	-	6,685	11	-
2f.4.4	Plant energy budget	-	-	,	-	-	20	243	36	279	279	-	-	-	554	_	-	-	6,669	- 11	-
2f.4.6	NRC Fees	-	-	-	-	-	-	263	26	290	290	-	-	-	-	-	-	-	-	-	-
2f.4.7	Emergency Planning Fees	-	-	-	-	=	-	55	6	61		61	-	-	-	-	-	_	-	-	-
2f.4.8	Fixed Overhead	-	-	-	-	-	-	890	133	1,023	1,023	-	-	-	-	-	-	-	-	-	-
2f.4.9	ISFSI Operating Costs	-	-	-	-	-	-	42	6	48	-	48	-	-	-	-	-	-	-	-	-
2f.4.10	Railroad Track Maintenance	-	-	-	-	-	-	47	7	54	54	-	-	-	-	-	-	-	-	-	-
2f.4.11	Security Staff Cost DOC Staff Cost	-	-	-	-	-	-	5,538 4,238	831 636	6,369 4,874	4,497 4,874	1,873	-	-	-	-	-	-	-	-	80,898
2f.4.12 2f.4.13	Utility Staff Cost	-	-	-	-	-	-	4,238 4,011	636	4,874	4,874 4,175	438	-	-	-	-	-	-	-	-	46,283 59,507
2f.4.13	Subtotal Period 2f Period-Dependent Costs	-	710	7	3		28	17,461	2,682	20,890	18,470	2,420	-		334	-	-	-	6,685	11	186,687
2f.0	TOTAL PERIOD 2f COST	-	710	7	3	-	28	27,470	5,124	33,341	29,294	4,048	-	-	334	-	-	-	6,685	100,906	189,807
PERIO	D 2 TOTALS	10,081	70,482	21,208	7,682	26,615	44,663	261,754	89,416	531,900	439,560	85,932	6.408	163,252	160,871	237	673	_	14,979,540	770,436	1,879,206

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Table C-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(Th	ousands o	of 2020 Dollars	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		D: . 1	Volumes		Burial /		Utility and
Activity		Decon	Removal	Packaging	Transport		Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B		GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet			Cu. Feet			Manhours	Manhours
PERIOD 31	b - Site Restoration																				
Period 3b D	Pirect Decommissioning Activities																				
Demolition of	of Remaining Site Buildings																				
3b.1.1.1 F	Reactor	-	4,645	-	-	-	-	-	697	5,342	-	-	5,342	-	-	-	-	-	-	44,679	-
	Auxiliary	-	1,993	-	-	-	-	-	299	2,291	-	-	2,291	-	-	-	-	-	-	11,902	-
	Condensate Storage Tank Foundation	-	7	-	-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	33	-
	Construction Warehouse & Fab Shop	-	130		-	-	-	-	19	149	-	-	149 16	-	-	-	-	-	-	1,405	-
	D3/D4 Emergency Generator Drum Transfer & Truck Loading Enclosure	-	14 20		-	-	-	-	2	16 24	-	-	24	-	-	-	-	-	-	84 221	-
	Hydrogen House	-	6		-	-	-	-	1	7	-	-	7	_	-	_	-	-	-	47	-
	LLRW Storage Enclosure	-	128		_	-	-	_	19	147	-	-	147	-	-	-	-	-	_	853	-
	Misc Structures 2017	-	2,617	-	-	-	-	-	393	3,009	-	-	3,009	-	-	-	-	-	-	22,582	-
3b.1.1.10 F		-	176		-	-	-	-	26	202	-	-	202	-	-	-	-	-	-	1,400	-
	Resin Disposal	-	14		-	-	-	-	2	16	-	-	16	-	-	-	-	-	-	120	-
	Structures below 3' below grade	-	1,785		-	-	-	-	268	2,052	-	-	2,052	-	-	-	-	-	-	9,238	-
	Sulfuric Acid Tank Enclosure	-	3		-	-	-	-	0	4	-	-	4	-	-	-	-	-	-	35	-
3b.1.1.14 T	Turbine Furbine Pedestal	-	2,140 365		-	-	-	-	321 55	2,461 420	-	-	2,461 420	-	-	-	-	-	-	21,997 1,857	-
	Warehouse #2	-	24		-	-	-	-	99	420 27	-	-	420 27	-	-	-	-	-	-	213	-
	Waste Neutralizing Tank House	-	7		-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	56	-
	Waste Oil Storage	-	9	_	-	-	-	_	1	10	-	-	10	_	-	-	-	-	-	70	-
	Water Treatment		324		-	-	-	-	49	373	-	-	373	-	-	-	-	-	-	2,690	-
	Fuel Handling of Aux Building	-	1,095		-	-	-	-	164	1,259	-	-	1,259	-	-	-	-	-	-	8,240	-
3b.1.1 T	Totals	-	15,501	-	-	-	-	-	2,325	17,826	-	-	17,826	-	-	-	-	-	-	127,723	-
a. a.																					
Site Closeou			1 000						200	1 *00			1 500							0.40*	
	Remove Rubble Grade & landscape site	-	1,330 448		-	-	-	-	200 67	1,530 515	-	-	1,530 515	-	-	-	-	-	-	6,495 921	-
	Final report to NRC	-	440	-	-	-	-	86	13	99	99		515	-	-	-		-	-	921	667
	Subtotal Period 3b Activity Costs	-	17,279	_	_	-	_	86	2,605	19,969	99		19,871	_	-	-	_	-	-	135,138	667
	·								,	ŕ			,								
	dditional Costs																				
	Clean Concrete Disposal	-	4,912		-	-	-	10		5,660	-	-	5,660	-	-	-	-	-	-	18,372	-
	Intake Structure Cofferdam	-	442	-	-	-	-		66 323	508	-	-	508	-	-	-	-	-	-	3,552	-
	Construction Debris Backfill	-	9,257	-	-	-	-	2,150	323 1,388	2,473 10,645	-	-	2,473 10,645	-	-	-	-	-	-	9,327	-
	Subtotal Period 3b Additional Costs	-	14,610		-	-	-	2,160		19,286	-	-	19,286	-	-	-	-	-	-	31,251	-
		-	14,010	-	-	-	-	2,100	2,510	13,200	-	-	15,260	•	-	-	-	-	-	31,231	-
	ollateral Costs																				
	Small tool allowance	-	212	-	-	-	-	1,636	$\frac{32}{245}$	244 1,882	-	1,882	244	-	-	-	-	-	-	-	-
	Spent Fuel Capital and Transfer Prairie Island Indian Community Payments	-	-	-	-	-	-	2,649		2,649	-	2,649	-	-	-	-	-	-	-	-	-
	Subtotal Period 3b Collateral Costs		212	-	-		-	4.285	277	4,774	-	4,531	244	-	-	-	-	-	-	-	-
00.0	Subtotal 1 triba ob conditional costs							1,200	2	2,111		1,001									
	eriod-Dependent Costs																				
	Insurance	-	-	-	-	-	-	513		565	565		-	-	-	-	-	-	-	-	-
	Property taxes	-		-	-	-	-	4,167	417	4,583	-	4,583	- 0.01 #	-	-	-	-	-	-	-	-
	Heavy equipment rental	-	7,144	-	-	-	-	044	1,072	8,215 395	-	395	8,215	-	-	-	-	-	-	-	-
	Plant energy budget NRC ISFSI Fees	Ē	-	-	-	-	-	344 218	52 22	395 239	-	395 239	-	-	-	-	-	-	-	-	-
	Emergency Planning Fees	-	-	-	-	-	-	157	16	173	-	173	-	-	-	-	-	-	-	-	-
	Fixed Overhead	-	-	-	-	-	-	1,024	154	1,178	397	781	-		-	-	-	-	-	-	-
	ISFSI Operating Costs	-	-	-	=	=	-	119		136	-	136	-	-	-	-	-	-	-	-	-
3b.4.9 F	Railroad Track Maintenance	-	-	-	-	-	-	361	54	416	153	263	-	-	-	-	-	-	-	-	-
3b.4.10 S	Security Staff Cost	-	-	-	-	-	-	4,616	692	5,308	-	5,308	-	-	-	-	-	-	-	-	57,340
3b.4.11 I	DOC Staff Cost	-	-	-	-	-	-	10,921	1,638	12,559	-	-	12,559	-	-	-	-	-	-	-	116,885
	Utility Staff Cost	-		-	-	-	-	5,004	751	5,755		1,237	4,517	-	-	-	-	-	-	-	74,431
3b.4 S	Subtotal Period 3b Period-Dependent Costs	-	7,144	-	-	-	-	27,444	4,935	39,523	1,114	13,117	25,292	-	-	-	-	-	-	-	248,656
3b.0 T	TOTAL PERIOD 3b COST	-	39,245	-	-	-	-	33,975	10,333	83,552	1,213	17,647	64,692	-	-	-	-	-	-	166,388	249,323

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Table C-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(Th	ousands o	of 2020 Dollar	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Dunial	Volumes		Burial/		Utility and
Activity		Decon	Removal	Packaging	Transport			Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B		GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
PERIOD :	3c - Fuel Storage Operations/Shipping																				
Period 3c I	Direct Decommissioning Activities																				
Poriod 3a (	Collateral Costs																				
	Spent Fuel Capital and Transfer	-	-	-	-	-	-	13,208	1,981	15,189	_	15,189	-	-	-	-	-	-	-	_	-
3c.3.2	Prairie Island Indian Community Payments	-	-	-	-	-	-	40,613	-	40,613	-	40,613	-	-	-	-	-	-	-	-	-
3c.3	Subtotal Period 3c Collateral Costs	-	-	-	-	-	-	53,820	1,981	55,801	-	55,801	-	-	-	-	-	-	-	-	-
	Period-Dependent Costs																				
	Insurance	-	-	-	-	-	-	7,872	787 4,509	8,659	-	8,659 49,604	-	-	-	-	-	-	-	-	-
	Property taxes NRC ISFSI Fees	-	-	-	-	-	-	45,095 5,076	4,509 508	49,604 5,583	-	49,604 5,583	-	-	-	-	-	-	-	-	-
	Emergency Planning Fees	-	-	-	-	_	_	2,410	241	2,651	_	2,651	-	-	-	-	_	-	-	-	-
3c.4.6	Fixed Overhead	-	-	-	-	-	-	5,298	795	6,092	-	6,092	-	-	-	-	-	-	-	-	-
	ISFSI Operating Costs	-	-	-	-	-	-	1,820	273	2,092	-	2,092	-	-	-	-	-	-	-	-	-
	Railroad Track Maintenance Security Staff Cost	-	-	-	-	-	-	2,033	305	2,338	-	2,338 81,385	-	-	-	-	-	-	-	-	970 199
	Utility Staff Cost	-	-	-	-	-	-	70,770 16,510	10,615 2,477	81,385 18,987	-	18,987	-	-	-	-	-	-	-	-	879,133 228,237
	Subtotal Period 3c Period-Dependent Costs	-	-	-	-	-	-	156,883	20,510	177,392	-	177,392	-	-	-	-	-	-	-	-	1,107,370
3c.0	TOTAL PERIOD 3c COST	_	_	_	_	-	_	210,703	22,491	233,194	_	233,194	_	_	-	-	-	-	-	_	1,107,370
	3d - GTCC shipping								,												-,,
	Direct Decommissioning Activities																				
	eam Supply System Removal Vessel & Internals GTCC Disposal	-	_	1,444	_	_	8,680	-	1,663	11,787	11,787	_	-	_	_	_	_	1,773	344,823	_	-
	Totals	-	-	1,444	-	-	8,680		1,663	11,787	11,787	-	-	-	-	-	-	1,773	344,823	-	=
3d.1	Subtotal Period 3d Activity Costs	-	-	1,444	-	-	8,680	-	1,663	11,787	11,787	=	-	-	-	-	-	1,773	344,823	-	-
Period 3d (	Collateral Costs																				
	Prairie Island Indian Community Payments	-	-	-	-	_	-	48	-	48	-	48	-	-	-	-	-	-	-	-	-
3d.3	Subtotal Period 3d Collateral Costs	-	-	-	-	-	-	48	-	48	-	48	-	-	-	-	-	-	-	-	-
Period 3d I	Period-Dependent Costs																				
	Insurance	-	-	-	-	-	-	9	1	10	10	-	-	-	-	-	-	-	-	-	-
	Property taxes	-	-	-	-	-	-	53	5	58	58	-	-	-	-	-	-	-	-	-	-
	NRC ISFSI Fees	-	-	-	-	-	-	4 3	0		-	4	-	-	-	-	-	-	-	-	-
	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	_	о 6	0	3 7	- 7	ئ -	-	-	_	-	-	-	_	-	-
	Railroad Track Maintenance	-	_	-	-	_	-	2	0	3	3	-	-	-	_	_	_	-	-	-	-
	Security Staff Cost	-	-	-	-	-	-	83	13		96		-	-	-	-	-	-	-	-	1,037
	Utility Staff Cost	-	-	-	-	-	-	19	3		22		-	-	-	-	-	-	-	-	269
3d.4	Subtotal Period 3d Period-Dependent Costs	-	-	-	-	-	-	181	24	204	197	7	-	-	-	-	-	-	-	-	1,306
3d.0	TOTAL PERIOD 3d COST	-	-	1,444	-	-	8,680	229	1,687	12,039	11,984	55	-	-	-	-	-	1,773	344,823	-	1,306
PERIOD :	Be - ISFSI Decontamination																				
Period 3e I	Direct Decommissioning Activities																				
	Additional Costs					_															
	License Termination ISFSI Subtotal Period 3e Additional Costs	-	24 24		435 435		2,532 2,532		978 978	4,890 4,890	4,890 4,890	-	-	-	9,355 9,355		-	-	1,123,457 1,123,457	3,762 3,762	
Period 3e I	Period-Dependent Costs																				
	Insurance	_	-	-	-	-		93	23	116	116	-	-	-	-	-	-	-	-	-	-
3e.4.2	Property taxes	-	-	-	-	-	-	56	14	69	69	-	-	-	-	-	-	-	-	-	-
	Plant energy budget	-	-	-	-	-	-	11	3				-	-	-	-	-	-	-	-	-
	Fixed Overhead Railroad Track Maintenance	-	-	-	-	-	-	54 21	14 5	68 26	68 26		-	-	-	-	-	-	-	-	-
	Security Staff Cost	-	-	-	-	-	-	174	43		26		-	-	-	-	-	-	-	-	2,500
	Utility Staff Cost	-	-	-	-	-	-	129	32		161		-		-	-	-	-	-		1,896
	Subtotal Period 3e Period-Dependent Costs	-	-	-	-	-	-	536	134				-	-	-	-	-	-	-	-	4,396
3e.0	TOTAL PERIOD 3e COST	-	24	81	435	5 -	2,532	1,375	1,112	5,560	5,560	-	-	-	9,355	-	-	-	1,123,457	3,762	5,460

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

Table C-2 Prairie Island DECON Unit 2 DECON Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035 (Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activit		Decon	Removal		Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
PERIO	D 3f - ISFSI Site Restoration																				
Period 3	f Direct Decommissioning Activities																				
Period 3	f Additional Costs																				
3f.2.1	Demolition and Site Restoration of ISFSI	-	515	-	-	-	-	68	87	670	-	-	670	-	-	-	-	-	-	2,219	80
3f.2	Subtotal Period 3f Additional Costs	-	515	-	-	-	-	68	87	670	-	-	670	-	-	-	-	-	-	2,219	80
Period 3	f Collateral Costs																				
3f.3.1	Small tool allowance	-	3	-	-	-	-	-	0	4	-	-	4	-	-	-	_	-	-	-	-
3f.3	Subtotal Period 3f Collateral Costs	÷	3	-	-	-	-	-	0	4	-	-	4	-	-	-	-	-	-	-	-
Period 3	f Period-Dependent Costs																				
3f.4.2	Property taxes	-	-	-	-	-	-	28	3	31	-	-	31	-	-	-	_	-	-	-	-
3f.4.3	Heavy equipment rental	-	59	-	-	-	-	-	9	68	-	-	68	-	-	-	-	-	-	-	-
3f.4.4	Plant energy budget	-	-	-	-	-	-	6	1	6	-	-	6	-	-	-	-	-	-	-	-
3f.4.5	Fixed Overhead	-	-	-	-	-	-	28	4	32	-	-	32	-	-	-	-	-	-	-	-
3f.4.6	Railroad Track Maintenance	-	-	-	-	-	-	11	2	12	-	-	12	-	-	-	-	-	-	-	-
3f.4.7	Security Staff Cost	-	-	-	-	-	-	89	13		-	-	102	-	-	-	-	-	-	-	1,281
3f.4.8	Utility Staff Cost	-	-	-	-	-	-	55	8	63	-	-	63	-	-	-	-	-	-	-	795
3f.4	Subtotal Period 3f Period-Dependent Costs	-	59	-	-	-	-	216	40	315	-	-	315	-	-	-	-	-	-	-	2,076
3f.0	TOTAL PERIOD 3f COST	-	577	-	-	-	-	284	128	989	-	-	989	-	-	-	-	-	-	2,219	2,156
PERIO	D 3 TOTALS	-	39,847	1,525	435	-	11,212	246,565	35,750	335,334	18,757	250,896	65,681	-	9,355	-	-	1,773	1,468,280	172,370	1,365,615
TOTAL	COST TO DECOMMISSION	13,876	116,246	23,184	8,596	26,793	61,273	614,850	144,013	1,008,829	590,962	345,097	72,770	169,384	184,110	826	673	1,773	17,056,350	976,284	4,044,049

TOTAL COST TO DECOMMISSION WITH 16.65% CONTINGENCY:	\$1,008,829	thousands of 2020 dollars
TOTAL NRC LICENSE TERMINATION COST IS 58.58% OR:	\$590,962	thousands of 2020 dollars
SPENT FUEL MANAGEMENT COST IS 34.21% OR:	\$345,097	thousands of 2020 dollars
NON-NUCLEAR DEMOLITION COST IS 7.21% OR:	\$72,770	thousands of 2020 dollars
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	185,608	Cubic Feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	1,773	Cubic Feet
TOTAL SCRAP METAL REMOVED:	42,328	Tons
TOTAL CRAFT LABOR REQUIREMENTS:	976,284	Man-hours

End Notes: n/a - indicates that this activity not charged as decommissioning expense a - indicates that this activity performed by decommissioning staff 0 - indicates that this value is less than 0.5 but is non-zero A cell containing " - " indicates a zero value

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis Document X01-1775-001, Rev. 0 Appendix D, Page 1 of 21

#### APPENDIX D

#### **DETAILED COST ANALYSIS**

#### **SCENARIO 2: DECON with 60 Year DFS**

	Page
Prairie Island Nuclear Generating Plant, Unit 1	D-2
Prairie Island Nuclear Generating Plant, Unit 2	D-12

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#### Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

## Table D-1 Prairie Island DECON Unit 1 DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage (Thousands of 2020 Dollars)

Second								(Tl	housands	of 2020 Dollar	rs)											
Note   Content		A state Doctor					Processing	Disposal				Lic. Term.	Management	Restoration	Volume		Class B	Class C		Processed		Contractor
Page			Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Wt., Lbs.	Manhours	Manhours				
1.01   1.02   1.		-																				
1.00   Section of Control of Co			_	_	_	_	_	_	167	25	192	192	_	_	_	_	_	_	_	_	_	1 300
1.	1a.1.2 Notif	fication of Cessation of Operations									a											-,
Same Part No. 1989   19																						
1-10   1-10	1a.1.5 Deac	ctivate plant systems & process waste									a											
Table			-		-		-	-					-	-	-	-		-	-	-	-	
10   10   10   10   10   10   10   10	1a.1.8 Perfo	orm detailed rad survey									a											,
11 10 10 10 10 10 10 10 10 10 10 10 10 1			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	
14.11   Micros solid and SA			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	
1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	
1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.			-	-	-	-	-	-					-	-	-	-		-	-	-	-	
Action   Appendix a   Action	1a.1.15 Perfo	orm Site-Specific Cost Study	-	-	-	-	-	-		96	739	739	-	-	-	-	-	-	-	-	-	5,000
18-  17-    Park & Serge purp of field in Serge   14-20   14	1a.1.16 Prep	pare/submit Irradiated Fuel Management Plan	-	-	=	-	-	-	129	19	148	148	=	<u>-</u>	-	-	-	-	-	-	-	1,000
14.17.17   19.00   1	Activity Specific	cations							639	95	797	654		79								4 920
10.11.1.1   10.11.1   10.11.1   10.11.1   10.11.1   10.11.1   10.11.1   10.11.1   10.11.1   10.11.1			-	-	-	-	-	-					-		-	-	-	-	-	-	-	
13.11.71   16.11.72			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	
18.11.F.			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	
1a.1.1.2 Membred concrete	1a.1.17.6 Biolo	ogical shield	-	-	-	-	-	-	64	10	74	74	-	-	-	-	-	-	-	-	-	500
14.11.11   15.11.11			-	-	-	-	-	-					-	- 118	-	-	-	-	-	-	-	
15.17.17   Plant artentines & holdlings	1a.1.17.9 Main	n Turbine	-	-	-	-	-	-	51		59		-	59	-	-	-	-	-	-	-	400
10.1.1.7.1.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2			-	-	-	-	-	-					-		-	-	-	-	-	-	-	
18.1.17   17.0   18.1.17   18.1.17   18.1   17.0   18.1			-	-	-	-	-	-					-		-	-	-	-	-	-	-	
Panning   Site Proporations   18.18   Proporations   2.80   18.19   Proporations   2.80   18.19   Proporations   2.80   18.19   Proporations   2.80			-	-	-	-	-	-					-		-	-	-	-	-	-	-	
Popur dismanting sequence     308   40   315   356									1,001	.20	0,001	1,020		000								01,021
1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.			_	_	-	-	_	_	308	46	355	355	-	_	-	-	_	_	_	_	_	2.400
1.1.21	1a.1.19 Plan	t prep. & temp. svces	-	-	-	-	-	-	3,500	525	4,025	4,025	-	-	-	-	-	-	-	-	-	-
1.1.22   Procure cask-direnes & containers   1.58   24   182   182			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	
Period la Additional Costs   12.675   1.901   14.576   14.576   1.4.576	1a.1.22 Procu	ure casks/liners & containers	-	-	-	-	-	-	158	24	182	182	-	-	-	-	-	-	-	-	-	1,230
1.2.1   1.2.2   1.2.	1a.1 Subt	total Period 1a Activity Costs	=	-	=	-	-	-	15,945	2,392	18,336	17,669	=	668	-	-	-	-	-	-	-	78,157
1.   1.   1.   1.   1.   1.   1.   1.									19 675	1 001	14 570	14 570										
1.4.1   1.4.2   1.4.			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	-
1.49   1.249	Period 1a Collat	teral Costs																				
Period   a Period Dependent Costs			-	-	-	-	-	-						-	-	-	-	-	-	-	-	<del>-</del>
1a.4.1       Insurance       -       -       1,660       166       1,826       -         -									,		,		,									
	1a.4.1 Insur		-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	-
1a.4.4       Heavy quipment rental       753			Ē		-	-	-	-					-	-	-	-	-	-	-	=	÷	-
1a.4.5     Disposal of DAW generated     12     5     50     14     82     82     -     610     12,190     20       1a.4.6     Plant energy budget     -     1,621     243     1,864     -     -     -     -     -       1a.4.7     NRC Fees     -     1,137     114     1,251     -     -     -     -     -     -       1a.4.8     Emergency Planning Fees     -     2,174     217     2,392     -     2,392     -     -     -     -     -     -       1a.4.9     Fixed Overhead     -     -     1,440     216     1,656     1,656     -     -     -     -     -     -       1a.4.10     Spent Fuel Pool O&M     -     -     422     63     486     -     -     -     -     -     -     -       1a.4.11     ISFSI Operating Costs     -     -     64     - </td <td></td> <td></td> <td>-</td> <td></td> <td></td> <td>-</td> <td>-</td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td>-</td>			-			-	-	-					-	-	-	-	-	-	-	-	-	-
1a.4.7       NRC Fees       - 1,137       114       1,251       1,251	1a.4.5 Dispo	osal of DAW generated	-	-		5	-	50		14	82	82	-	-	-	610	-	-	-	12,190	20	-
1a.4.8       Emergency Planning Fees       - 2,174       217       2,392       - 2,392			-	-	-	-	-	-						-	-	-	-		-	-	-	-
1a.4.10     Spent Fuel Pool O&M     -     422     63     486     -     486     - </td <td>1a.4.8 Emer</td> <td>rgency Planning Fees</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>2,174</td> <td>217</td> <td>2,392</td> <td>-</td> <td></td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td>	1a.4.8 Emer	rgency Planning Fees	-	-	-	-	-	-	2,174	217	2,392	-		-	-	-	-	-	-	-	-	-
1a.4.11     ISFSI Operating Costs     - 56     8     64     - 64			-	-	-	-	-	-						-	-	-	-	-	-	-	-	-
1a.4.12     Railroad Track Maintenance			-	-	-	-	-	-						-	-	-	-	-	-	-	-	-
1a.4.14 Utility Staff Cost	1a.4.12 Railr	road Track Maintenance	-	-	-	-	-	-	63		72		-	-	-	-	-	-	-	-	-	100 500
			-	-	-	-	-	-						-	-	-	-	-	-	-	-	
			-	1,367	12	5	-	50					2,942	-	-	610	-	-	-	12,190	20	

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Table D-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(11)	iousanus	of 2020 Dolla	15)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
1a.0	TOTAL PERIOD 1a COST	-	1,367	12	2 5	-	50	77,325	11,263	90,022	85,163	4,191	668	-	610	-	-	-	12,190	20	623,117
PERIO	D 1b - Decommissioning Preparations																				
Period 1	b Direct Decommissioning Activities																				
	Work Procedures																				
	Plant systems	-	-	-	-	-	-	608	91	700	630	-	70	-	-	-	-	-	-	-	4,733
	NSSS Decontamination Flush	-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	•	-	-	1,000
1b.1.1.3 1b.1.1.4		-	-	-	-	-	_	321 174	48 26	369 200	369 50	-	150	-			_		-	-	2,500 1,350
	CRD cooling assembly	-	_	_	-	_	_	129	19	148	148	_	-	_	-	-	_	_	_	-	1,000
1b.1.1.6		-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	_	-	1,000
1b.1.1.7		-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	1,000
1b.1.1.8	Reactor vessel	-	-	-	-	-	-	467	70	537	537	-	-	-	-	-	-	-	-	-	3,630
1b.1.1.9	Facility closeout  Missile shields	-	-	-	-	-	-	154 58	23 9	177 67	89 67	-	89	-	-	-	-	-	-	-	1,200 450
	1 Biological shield	-	-	-	-	-	-	154	23	177	177	-	-	-	-	-	-		-	-	1,200
	2 Steam generators	-	_	_	-	_	_	591	89	680	680	_	-	-	-	_	_	_	_	-	4,600
	Reinforced concrete	-	-	-	-	-	-	129	19	148	74	-	74	-	-	-	-	-	_	-	1,000
	4 Main Turbine	-	-	-	-	-	-	200	30	231	-	-	231	-	-	-	-	-	-	-	1,560
	5 Main Condensers	-	-	-	-	-	-	200	30	231	-	-	231	-	-	-	-	-	-	-	1,560
	6 Auxiliary building 7 Reactor building	=	-	-	-	-	-	351 351	53 53	403 403	363 363	=	40 40	-	-	-	-	-	-	-	2,730 2,730
1b.1.1.1 1b.1.1	Total	-	-	-	-	-	-	4,272	641	4,913	3,989	-	924	-	-	-	-	-		-	33,243
1b.1.2 1b.1	Decon primary loop Subtotal Period 1b Activity Costs	572 572	-	-	-	-	-	4,272	286 927	859 5,772	859 4,848	-	924	-	-	-	-	-	-	1,067 1,067	33,243
Period 1	b Additional Costs																				
1b.2.1	Site Characterization	-	-	-	-	-	-	3,520	1,056	4,576	4,576	-	-	-	-	-	-	-	-	21,020	
1b.2.2	Mixed/Hazardous Waste	-	-	353				-	76	702	702	-	-	6,132		-	-	-	351,977	2,348	
1b.2.3	Asbestos Abatement	-	2,526	3			1,369		996	5,044	5,044	-	-	-	12,843		-	-	166,959	20,907	
1b.2	Subtotal Period 1b Additional Costs	-	2,526	356	3 244	178	1,369	3,520	2,129	10,321	10,321	-	-	6,132	12,843	-	-	-	518,936	44,275	8,332
	b Collateral Costs	1.055							1.50	1 010	1.010										
1b.3.1 1b.3.2	Decon equipment DOC staff relocation expenses	1,055	-	-	-	-	-	1,264	158 190	1,213 1,454	1,213 1,454	-	-	-	-	-	-	-	-	-	-
1b.3.2	Process decommissioning water waste	25		16	3 29	-	- 66		35	1,454	172	-	-	-	152	-	-		9,127	30	-
1b.3.4	Process decommissioning chemical flush waste	2	-	61			3,889		1,009	5,159	5,159	=	-	-	-	588	-	-	62,689	110	
1b.3.5	Small tool allowance	-	36	-	-	-	-	-	5	42	42	=	-	-	-	-	-	-		-	-
1b.3.6	Pipe cutting equipment	-	1,200	-	-	-	-	-	180	1,380	1,380	-	-	-	-	-	-	-	-	-	-
1b.3.7	Decon rig	2,104		-	-	-	-	-	316	2,419	2,419		-	-	-	-	-	-	-	-	-
1b.3.8 1b.3.9	Spent Fuel Capital and Transfer Retention and Severance	-	-	-	-	-	-	163 1,032	25 155	188 1,187	1,187	188	-	-	-	-	-	-	-	-	-
1b.3.10	Prairie Island Indian Community Payments	-	-	-	-	-	-	623	199	623	1,101	623	-	-	-	-	-		-	-	-
1b.3	Subtotal Period 1b Collateral Costs	3,185	1,236	77	7 228	-	3,955		2,072	13,836	13,025	811	-	-	152	588	-	-	71,815	140	-
	b Period-Dependent Costs																				
1b.4.1	Decon supplies	38	-	-	-	-	-		9	47	47	-	-	-	-	-	-	-	-	-	-
1b.4.2	Insurance	-	-	-	-	-	-	828	83	910	910	-	-	-	-	-	-	-	-	-	-
1b.4.3 1b.4.4	Property taxes Health physics supplies	-	475	-	-	-	-	1,806	181 119	1,987 594	1,987 594	-	-	-	-	-	-	-	-	-	-
1b.4.5	Heavy equipment rental	-	375	-	-	-	-	-	56	432	432	-	-	-	-	-	-		-	-	-
1b.4.6	Disposal of DAW generated	-	-	7	7 3	-	29	-	8	48	48	-	-	-	356	-	-	-	7,122	12	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	1,617	243	1,859	1,859	=	-	-	-	-	-	-		-	-
1b.4.8	NRC Fees	-	-	-	-	-	-	323	32	355	355		-	-	-	-	-	-	-	-	-
1b.4.9	Emergency Planning Fees	-	-	-	-	-	-	1,084	108	1,193	-	1,193	-	-	-	-	-	-	-	-	-
1b.4.10 1b.4.11	Fixed Overhead Spent Fuel Pool O&M	-	-	-	-	-	-	718 211	108 32	826 242	826	242	-	-	-	-	-	-	-	-	-
1b.4.11 1b.4.12	ISFSI Operating Costs	-	-	-	-	-	-	28	32 4	32	-	32	-	-	-	-	-	-	-	-	-
1b.4.12	Railroad Track Maintenance	-	-	-	-	-	-	31	5	36	36	-	-	-	-	-	-	_	-	-	=
1b.4.14	Security Staff Cost	-	-	-	-	-	-	4,153	623	4,775	4,775	-	-	-	-	-	-	-	-	-	61,192
1b.4.15		-	-	-	-	-	-	5,846	877	6,723	6,723	-	-	-	-	-	-	-	-	-	63,266
1b.4.16	Utility Staff Cost	- 38	851			-	-	13,505	2,026	15,531	15,531	1 405	-	-	050	-	-	-	- F 100	- 10	211,579
1b.4	Subtotal Period 1b Period-Dependent Costs			7			29		4,513	35,590	34,123	1,467	-	-	356	-	-	-	7,122	12	
1b.0	TOTAL PERIOD 1b COST	3,795	4,613	440	475	178	5,354	41,023	9,641	65,519	62,317	2,278	924	6,132	13,351	588	-	-	597,873	45,493	377,612

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Table D-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

						(111	Ousunus	or 2020 Dona												
Activity Index Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Burial Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 1 TOTALS	3,795	5,980	452	480	178	5,404	118,348	20,903	155,540	147,480	6,468	1,592	6,132	13,961	588	-	-	610,063	45,513	1,000,729
PERIOD 2a - Large Component Removal																				
Period 2a Direct Decommissioning Activities																				
Nuclear Steam Supply System Removal 2a.1.1.1 Reactor Coolant Piping 2a.1.1.2 Pressurizer Relief Tank 2a.1.1.3 Reactor Coolant Pumps & Motors 2a.1.1.4 Pressurizer 2a.1.1.5 Steam Generators 2a.1.1.6 CRDMs/ICIs/Service Structure Removal 2a.1.1.7 Reactor Vessel Internals 2a.1.1.8 Reactor Vessel	54 24 57 - 302 82 94	47 21 68 77 3,307 281 4,861 6,046	10 6 110 503 2,269 218 13,621 2,028		2,409	187 125 463 776 4,001 938 9,015 2,975	- - - - - 307	89 51 186 278 2,681 488 11,878 6,804	406 238 977 1,732 16,437 2,294 40,693 18,982	406 238 977 1,732 16,437 2,294 40,693 18,982	- - - - - - -	- - - - - -	18,672 - - - -	508 338 2,332 2,196 11,316 4,797 501 8,073	- - - - - 125	- - - - - - 673	- - - - - -	35,411 23,594 295,800 185,015 1,689,435 177,400 164,987 576,524	1,421 630 2,049 1,666 11,613 8,104 25,123 25,123	100 938 2,875 - 1,163 1,163
2a.1.1 Totals	613	14,709	18,764	3,714	2,409		614	22,455	81,759	81,759	-	-	18,672	30,062	125	673	-	3,148,166	75,729	6,240
Removal of Major Equipment 2a.1.2 Main Turbine/Generator 2a.1.3 Main Condensers	-	331 2,801	172 109		527 705	377 533	-	283 960	1,752 5,170	1,752 5,170	-	-	2,131 3,800	1,187 1,587	-	-	-	203,265 271,824	4,667 39,151	- -
Cascading Costs from Clean Building Demolition 2a.1.4.1 Reactor 2a.1.4 Totals		794 794	- -			-	- -	119 119	913 913	913 913			-	- -	- -	-	-		7,589 7,589	
Disposal of Plant Systems   2a.1.5.1   Air Removal   2a.1.5.2   Auxiliary Feedwater   2a.1.5.3   Auxiliary Feedwater - RCA   2a.1.5.4   Bleed Steam   2a.1.5.5   Caustic Addition - RCA   2a.1.5.6   Chemical Feed   Chemica		31 46 47 90 38 20 1 1 42 474 235 183 195 34 400 27 0 115 366 478 5 386 70 3,445	0 0 0 4 7	- - -	36 39 1 1 348 537 537 - - - - - - - - - - - - - - - - - - -	234		5 7 17 14 16 3 0 6 71 35 101 1 23 133 15 60 4 0 17 225 225 1 1 58 11 1,048	36 53 102 104 95 23 3 49 545 271 651 10 175 895 39 460 31 1,337 64 444 81 7,023	102 95 3 - 651 - 895 - - 1,482 1,337 - 4,565		36 53	215 233 6	- - - - - - - - - - - - - - - - - - -				8,722 9,453 243 243	452 670 601 1,335 444 304 12 619 6,837 3,420 127 2,215 505 5,881 389 5 1,690 4,956 6,667 75 5,609 1,003 48,794	
2a.1 Subtotal Period 2a Activity Costs	613	23,011	19,092		5.810	19.628	614	25.102	97,819	95,362	-	2.458	37.556	33,533	125	673		4,194,811	182.298	6,240
Period 2a Additional Costs 2a.2.1 Retired RPV Upper Internals Package 2a.2 Subtotal Period 2a Additional Costs		25,011 257 257	387 387	217 217	5,610 - -	1,394 1,394		1,041 1,041	3,296 3,296	3,296 3,296	-	2,400 - -	- - -	376 376	112 112 112		-	50,164 50,164	3,333 3,333	133 133
Period 2a Collateral Costs 2a.3.1 Process decommissioning water waste 2a.3.2 Process decommissioning chemical flush waste 2a.3.3 Small tool allowance 2a.3.4 Spent Fuel Capital and Transfer 2a.3.5 Retention and Severance 2a.3.6 Prairie Island Indian Community Payments 2a.3.7 On-site survey and release of 0.0 tons clean metallic waste	48	239 - - - -	32 - - - - -	58 - - - - -	- - - - - -	130 - - - - - -	1,639 12,780 1,780	68 36 246 1,917	337 274 1,885 14,697 1,780	337 - 247 - 14,697	1,885 1,780	- 27 - -	- - - - -	299 - - - - - -	- - - - -		- - - - -	17,968 - - - - -	58 - - - - -	- - - - - -

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Table D-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(111	ousunus	or 2020 Dona	15)											
Ī					_	Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
2a.3	Subtotal Period 2a Collateral Costs	48	239	32	58	-	130	16,198	2,267	18,972	15,281	3,664	27	-	299	-	-	-	17,968	58	-
Period 2	a Period-Dependent Costs																				
2a.4.1	Decon supplies	107	-	-	-	-	-	-	27	134	134	-	-	-	-	-	-	-	-	-	-
2a.4.2 2a.4.3	Insurance Property taxes	-	-	-	-	-	-	690 5,009	69 501	759 5,510	759 5,510	-	-	-	-	-	-	-	-	-	-
2a.4.4	Health physics supplies	=	1,950	-	_	-	-	-	487	2,437	2,437	-	-	_	-	-	-	-	_	-	-
2a.4.5	Heavy equipment rental	-	3,565	-	-	-	-	-	535	4,100	4,100	-	-	-	-	-	-	-	-	-	-
2a.4.6 2a.4.7	Disposal of DAW generated Plant energy budget	=	-	73	30	-	303	2,194	88 329	493 2,523	493 2,523	-	-	-	3,681	-	-	-	73,619	120	-
2a.4.7 2a.4.8	NRC Fees	-	-	-	-	-	-	842	84	926	926	-	-		-		-		-	-	-
2a.4.9	Emergency Planning Fees	=	-	-	-	-	-	2,647	265	2,912	-	2,912	-	-	-	-	-	-	-	-	-
2a.4.10	Fixed Overhead Spent Fuel Pool O&M	-	-	-	-	-	-	1,695 602	254 90	1,949 692	1,949	692	-	-	-	-	-	-	-	-	-
2a.4.11 2a.4.12	ISFSI Operating Costs	-	-	-	-	-	-	80	12	92		92	-	-	-	-	-	-	-	-	-
2a.4.13	Railroad Track Maintenance	=	-	-	-	-	-	318	48	366	366	-	-	-	-	-	-	-	-	-	-
2a.4.14	Remedial Actions Surveys	-	-	-	-	-	-	1,596	239	1,835	1,835	-	-	-	-	-	-	-	-	-	150 500
2a.4.15 2a.4.16	Security Staff Cost DOC Staff Cost	-	-	-	-	-	-	11,727 $20,663$	1,759 3,099	13,486 23,763	13,486 23,763	-	-	-	-		-		-	-	172,726 225,210
2a.4.17	Utility Staff Cost	=	-	-	-	-	-	26,905	4,036	30,941	30,941	-	-	-	-	-	-	-	-	-	417,453
2a.4	Subtotal Period 2a Period-Dependent Costs	107	5,515	73	30	-	303	74,968	11,922	92,918	89,223	3,696	-	-	3,681	-	-	-	73,619	120	815,389
2a.0	TOTAL PERIOD 2a COST	768	29,021	19,584	4,254	5,810	21,456	91,780	40,333	213,006	203,161	7,360	2,485	37,556	37,889	237	673	-	4,336,562	185,810	821,762
PERIO	D 2b - Site Decontamination																				
Period 2	b Direct Decommissioning Activities																				
	of Plant Systems																				
2b.1.1.1 2b.1.1.2		-	2 0	0	0	1	-	-	1 0	3	3	-	- 0	3	-	-	-	-	140	29	-
2b.1.1.3		-	5	-	-	-	-	-	1	5	-	-	5	-	-	-	-	-	-	65	-
2b.1.1.4	Chemical & Volume Control	1,120	1,389	89	90		973	-	1,286	5,700	5,700	-	-	4,498	2,846	-	-	-	366,565	34,533	-
2b.1.1.5 2b.1.1.6		-	858 74	25	91	2,079	-	-	543 11	3,597 85	3,597	-	85	12,427	-	-	-	-	504,675	11,242 1,086	-
2b.1.1.7		-	304	7	25	569	-	-	166	1,070	1,070	-	-	3,400	-	-	-		138,090	3,971	-
2b.1.1.8		-	30	0	1	18	-	-	10	59	59	-	-	105	-	-	-	-	4,278	401	-
2b.1.1.9	Containment Spray - RCA Containment Ventilation	-	93 255	$\frac{2}{24}$	6 51		248	-	46 260	293 1,667	293 1,667	-	-	868 4,951	737	•	-	-	35,249 247,952	1,217 3,668	-
	Cooling Water	-	163	-	-	- 020	-	-	24	187	1,007	-	187	4,551	-	-	-	-	247,552	2,396	-
2b.1.1.12	2 Cooling Water - RCA	-	658	16	57	1,293	-	-	368	2,392	2,392	-	-	7,728	-	-	-	-	313,832	8,594	-
	3 D1 Emergency Diesel 4 D2 Emergency Diesel	-	50 36	-	-	-	-	-	8 5	58 41	-	-	58 41	-	-	-	-	-	-	730 522	-
	5 Diesel Rooms Ventilation	-	9	-	-	-	-	-	1	11	-	-	11	-	-	-	-		-	135	-
2b.1.1.16	3 Electrical - Clean	-	1,905	-	-	-	-	-	286	2,191	-	-	2,191	-	-	-	-	-	-	26,981	-
	7 Electrical - Contaminated	-	611	7	20		32	-	228	1,321	1,321	-	-	2,527	95	-	-	-	108,690	8,377	-
	8 Electrical - Decontaminated 9 Fuel Handling	-	3,787 121	48 6	173 11		73	-	1,569 74	9,518 436	9,518 436	-	-	23,551 908	218	-	-	-	956,401 50,723	49,378 1,784	-
2b.1.1.20	Fuel Oil	-	121	-	-	-	-	-	18	140	-	-	140	-	-	-	-	-	-	1,697	-
	1 HVAC - Clean	=	120	-	-	-		-	18	138	-	-	138	-	-	-	-	-	-	1,891	-
	2 HVAC - Contaminated 3 Incore Instrumentation	- 0	374 28	9	26 2		41 19	-	190 14	1,186 74	1,186 74	-	-	3,261 60	123 57	-	-	-	140,257 6,058	5,032 425	-
	4 Misc Drains & Vents	-	233	15	13		176	-	115	618	618	-	-	390	514	-	-	-	49,062	3,091	-
	5 Reactor Coolant	153	311	21	18		265	-	234	1,060	1,060	-	-	344	777		-	-	64,085	6,470	-
	6 Reactor Hot Sampling 7 Reactor Makeup	149	136 73	12	7	11	118	-	142 11	576 84	576	-	84	66	342	-	-	-	25,063	3,946 1,042	-
	Reactor Vessel	9	21	1	0	4	5	-	12	52	52	-	- 04	26	14	-	-		2,000	425	-
	Residual Heat Removal	357	419	85	86	484	1,105	-	654	3,190	3,190	-	-	2,895	3,252	-	-	-	326,425	7,621	-
	O Safeguards Chilled Water O Safety Injection	-	18 893	42	73	1,136	393	-	3 507	20 3,044	3,044	-	20	6,788	1,156	•	-	-	349,908	259 12,561	-
	Safety Injection 2 Sampling	-	60	42	3		393 37	-	26	3,044	3,044	-	-	6,788 59	1,156	-	-	-	9,420	811	-
2b.1.1.33	3 Shield Bldg Ventilation	-	140	14	26	360	165	-	135	839	839	=	-	2,152	491	-	-	-	118,583	2,030	-
	4 Station & Instrument Air 5 Station & Instrument Air PCA	-	20 81	. 1	- 2	- 56	-	-	3 29	23 169	169	-	23	332	-	-	-	-	13,496	300 1,053	-
	5 Station & Instrument Air - RCA 5 Turbine Bldg Traps & Drains	-	81 50	- 1	- 2	- -	-	-	29 8	169 58	169	-	58	332	-	-	-	-	13,496	1,053 767	-
2b.1.1.37	7 Unit Coolers	-	42	=	-	-	-	-	6	49	-	-	49	-	-	-	-	-	-	611	-
	8 Unit Coolers - RCA	-	55	0	2		0.05	-	20	115	115	-	-	230	10 500	-	-	-	9,348	683	-
2b.1.1	Totals	1,789	13,544	429	786	12,979	3,651	-	7,032	40,209	37,119	-	3,091	77,571	10,728	-	-	-	3,840,299	205,829	-

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Table D-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(111	ousanus	or 2020 Dona	13)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Volumes		Burial/		Utility and
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet		Craft Manhours	Contractor Manhours
2b.1.2	Scaffolding in support of decommissioning	-	1,163		2	32	5	-	297	1,503	1,503	-	-	173	15		-	-	8,731	7,960	-
Decontar	nination of Site Buildings																				
2b.1.3.1	Reactor	1,215	2,807			373	13,624	-	4,981	24,476	24,476	-	-	2,230	83,429	-	-	-	3,633,417	50,950	-
2b.1.3.2 2b.1.3	Backwash Waste Receiving Tank Totals	1,215	28 2,835		17 1,253	373	97 13,721	-	34 5,015	179 24,655	179 24,655	-	-	2,230	929 84,358	-	-	-	43,896 3,677,313	301 51,251	-
2b.1.4 2b.1.5	Prepare/submit License Termination Plan Receive NRC approval of termination plan	-	-	-	-	-	-	526	79	605 a	605		-	-	-	-	-	-	-	-	4,096
2b.1	Subtotal Period 2b Activity Costs	3,004	17,542	675	2,041	13,384	17,377	526	12,423	66,973	63,882	-	3,091	79,974	95,101	-	-	-	7,526,343	265,040	4,096
Period 2l	o Additional Costs																				
2b.2.1	Operational Equipment	-	-	11	36	606	-	-	97	751	751	=	-	5,880	-	-	-	-	147,000	16	
2b.2.2 2b.2.3	Excavation of Underground Services	-	1,175	-	-	-	-	225	328 652	1,728 5,000	1,728 5,000	-	-	-	-	-	-	-	-	7,411	-
2b.2.3 2b.2	Security Modifications Subtotal Period 2b Additional Costs	-	1,175	11	36	606	-	4,348 4,573	1,077	7,478	7,478	-	-	5,880	-	-	-	-	147,000	7,427	-
Pariod 91	o Collateral Costs																				
2b.3.1	Process decommissioning water waste	108	-	74	132	-	298	-	156	768	768	-	-	-	684	-	-	-	41,053	133	=
2b.3.2	Process decommissioning chemical flush waste	2	-	90	296	-	677	-	224	1,289	1,289	-	-	-	875	-	-	-	93,252	164	-
2b.3.3 2b.3.4	Small tool allowance Spent Fuel Capital and Transfer	-	315	-	-	-	-	6,924	47 1,039	362 7,963	362	7,963	-	-	-	-	-	-	-	-	-
2b.3.4 2b.3.5	Retention and Severance	-	-	-	-	-	-	6,141	921	7,063	7,063	1,965	-	-	-	-	-	-		-	-
2b.3.6	Prairie Island Indian Community Payments	-	-	-	-	-	-	1,348	-	1,348	-	1,348	-	-		-	-	-	-	-	-
2b.3.7	On-site survey and release of 0.0 tons clean metallic waste		-		-	-	-	<del>-</del>			- <del>-</del>		-	-	-	-	-	-			-
2b.3	Subtotal Period 2b Collateral Costs	110	315	164	428	-	975	14,414	2,387	18,793	9,482	9,311	-	-	1,559	-	-	-	134,305	297	=
	Period-Dependent Costs																				
2b.4.1	Decon supplies	511	-	-	-	-	-	- 523	128	639 575	639 575	-	-	-	-	-	-	-	-	-	-
2b.4.2 2b.4.3	Insurance Property taxes	-	-	-	-	-	-	3,435	52 344	3,779	3,779	-	-	-	-	-	-	-	-	-	-
2b.4.4	Health physics supplies	-	2,140	-	-	-	-	-	535	2,675	2,675	-	-	-	-	-	-	-	-	-	-
2b.4.5	Heavy equipment rental	-	2,774		-	-	-	-	416	3,190	3,190	-	-	-	-	-	-	-	-	-	-
2b.4.6	Disposal of DAW generated	-	-	70	28	-	290	1.010	84	472	472	-	-	-	3,521	-	-	-	70,425	115	-
2b.4.7 2b.4.8	Plant energy budget NRC Fees	-	-	-	-	-	-	1,313 638	197 64	1,509 701	1,509 701	-	-	-	-		-	-	-	-	-
2b.4.9	Emergency Planning Fees	-	-	-	-	-	-	2,006	201	2,207	-	2,207	-	-	-	-	-	-	-	-	-
2b.4.10	Fixed Overhead	-	-	-	-	-	-	1,284	193	1,477	1,477	-	-	-	-	-	-	-	-	-	-
2b.4.11 2b.4.12	Spent Fuel Pool O&M Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	456 229	68 34	524 264	264	524	-	-	-	-	-	-	-	-	-
2b.4.12 2b.4.13	ISFSI Operating Costs	-		-	-	-		60	9	69	204	69	-	-	-	-	-	-	-	-	-
2b.4.14	Railroad Track Maintenance	-	-	-	-	-	-	67	10	78	78	-	-	-	-	-	-	-	-	-	-
2b.4.15	Remedial Actions Surveys	-	-	-	-	-	-	1,209	181	1,391	1,391	-	-	-	-	-	-	-	-	-	-
2b.4.16 2b.4.17	Security Staff Cost DOC Staff Cost	-	-	-	-	-	-	8,259 10,738	1,239 1,611	9,497 12,348	9,497 12,348	-	-	-	-	-	-	-	-	-	121,244 121,244
2b.4.18	Utility Staff Cost	-	-	-	-	-	-	13,928	2,089	16,017	16,017	-	-	-	-	-	-	-	-	-	225,649
2b.4	Subtotal Period 2b Period-Dependent Costs	511	4,914	70	28	-	290	44,145	7,454	57,412	54,612	2,800	-	-	3,521	-	-	-	70,425	115	468,137
2b.0	TOTAL PERIOD 2b COST	3,626	23,946	920	2,533	13,990	18,642	63,658	23,341	150,657	135,455	12,111	3,091	85,854	100,182	-	-	-	7,878,073	272,879	472,233
PERIOI	O 2c - Spent fuel delay prior to SFP decon																				
Period 2	Direct Decommissioning Activities																				
	Collateral Costs							F1.0F:	<b>=</b> 00-	¥0.00=		¥0.00=									
2c.3.1 2c.3.2	Spent Fuel Capital and Transfer Retention and Severance	-	-	-	-	-	-	51,274 $3,512$	7,691 527	58,965 4,039	4,039	58,965	-	-	-	-	-	-	-	-	-
2c.3.2	Prairie Island Indian Community Payments		-	-	-	-		1,526	- 527	1,526	4,035	1,526	-	-	-	-	-	-	-		-
2c.3	Subtotal Period 2c Collateral Costs	-	-	-	-	-	-	56,312	8,218	64,530	4,039	60,491	-	-	-	-	-	-	-	-	-
Period 2d	Period-Dependent Costs																				
2c.4.1	Insurance	-	-	-	-	-	-	592	59	651	651	-	-	-	-	-	-	-	-	-	-
2c.4.2	Property taxes	-	-	-	-	-	-	3,512	351	3,863	3,863	-	-	-	-	-	-	-	-	-	-
2c.4.3 2c.4.4	Health physics supplies Disposal of DAW generated	-	263	- 9	- 4	-	38	-	66 11	328 61	328 61	-	-	-	457	-	-	-	9,141	15	-
2c.4.4 2c.4.5	Plant energy budget		-	-	-	-	-	1,486	223	1,709	1,709	-	-	-	- 401	-	-	-		-	-
2c.4.6	NRC Fees	-	-	-	-	-	-	687	69	756	756	-	-	-	-	-	-	-	-	-	-

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Table D-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

Activity Index Activity Description Decon Cost Cost Cost Cost Cost Cost Cost Cost	Craft Manhours Utility and Contractor Manhours
Activity   Activity Description   Decon   Removal   Decon   Cost   Cos	Craft Contractor Manhours
Period 2c Period-Dependent Costs (continued)   2c.4.7	137,246 - 19,062 15 156,308
2c.4.7     Emergency Planning Fees     -     -     2,271     227     2,498     -     2,498       2c.4.8     Fixed Overhead     -     -     1,454     218     1,672     1,672     -     -     -       2c.4.9     Spent Fuel Pool O&M     -     -     516     77     593     -     593     -     -     -       2c.4.10     Liquid Radwaste Processing Equipment/Services     -     260     39     298     298     -     -     -     -     -     -       2c.4.11     ISFSI Operating Costs     -     68     10     79     -     79     -     -     -       2c.4.12     Railroad Track Maintenance     -     76     11     88     88     -     -     -     -     -	- 19,062 15 156,308 15 156,308
2c.4.7     Emergency Planning Fees     -     -     2,271     227     2,498     -     2,498       2c.4.8     Fixed Overhead     -     -     1,454     218     1,672     1,672     -     -     -       2c.4.9     Spent Fuel Pool O&M     -     -     516     77     593     -     593     -     -     -       2c.4.10     Liquid Radwaste Processing Equipment/Services     -     260     39     298     298     -     -     -     -     -     -       2c.4.11     ISFSI Operating Costs     -     68     10     79     -     79     -     -     -       2c.4.12     Railroad Track Maintenance     -     76     11     88     88     -     -     -     -     -	- 19,062 15 156,308 15 156,308
2c.4.8     Fixed Overhead     1,454     218     1,672     1,672	- 19,062 15 156,308 15 156,308
2c.4.10     Liquid Radwaste Processing Equipment/Services     -     -     -     -     -     260     39     298     298     -     -     -     -     -     -     -       2c.4.11     ISFSI Operating Costs     -     -     -     -     68     10     79     -     79     -	- 19,062 15 156,308 15 156,308
2c.4.11     ISFSI Operating Costs	- 19,062 15 156,308 15 156,308
2c.4.12 Railroad Track Maintenance	- 19,062 15 156,308 15 156,308
	- 19,062 15 156,308 15 156,308
	- 19,062 15 156,308 15 156,308
2c.4.14 Utility Staff Cost 1,195 179 1,375 1,375	15 156,308
2c.4 Subtotal Period 2c Period-Dependent Costs - 263 9 4 - 38 21,465 2,943 24,721 21,552 3,170 457 9,141	,
$2c.0  \text{TOTAL PERIOD 2c COST} \qquad \qquad -  263 \qquad 9 \qquad 4 \qquad -  38  77,777 \qquad 11,161  89,252  25,591 \qquad 63,661 \qquad -  -  457  -  -   9,141 \\$	576 -
PERIOD 2d - Decontamination Following Wet Fuel Storage	576 -
Period 2d Direct Decommissioning Activities	576 -
2d.1.1 Remove spent fuel racks 347 35 86 41 - 703 - 373 1,585 1,585 2,092 132,919	
Disposal of Plant Systems	
2d.1.2.1 Electrical · Contaminated · Fuel Pool · 152 2 5 103 8 · 56 325 325 · · · 615 23 · · · 26,449	2,077 -
2d.1.2.2 Electrical Decontaminated Fuel Pool 947 12 43 986 - 392 2,380 2,380 - 5,893 - 239,327	12,340 -
2d.1.2.3 HVAC · Contaminated · Fuel Pool - 160 4 11 234 18 - 82 508 508 1,398 53 60,110 2d.1.2.4 Safeguards Chilled Water · RCA - 85 1 4 83 34 207 207 495 20,100	2,157 - 1,019 -
2d.1.2.4 Sarguarus Chineu water NCA	7,613
2d.1.2.6 Station & Instrument Air - RCA Fuel Pool - 20 0 1 14 7 42 42 83 3,374	263 -
2d.1.2 Totals 303 1,721 52 96 1,554 476 - 954 5,157 5,157 - 9,290 1,401 467,176	25,468
2d.1.4 Scaffolding in support of decommissioning - 233 1 0 6 1 - 59 301 301 35 3 1,746	1,592
2d.1 Subtotal Period 2d Activity Costs 650 1,989 139 138 1,561 1,180 - 1,386 7,042 7,042 9,325 3,496 601,841	27,637 -
Period 2d Additional Costs	
2d.2.1 License Termination Survey Planning 1,037 311 1,348 1,348	- 6,240
2d.2 Subtotal Period 2d Additional Costs 1,037 311 1,348 1,348	- 6,240
Period 2d Collateral Costs	
2d.3.1 Process decommissioning water waste 30 - 21 38 - 86 - 44 220 220 197 11,793	38 -
2d.3.2 Process decommissioning chemical flush waste 1 - 34 110 - 251 - 83 478 478 - 324 - 34,576	61 -
2d.3.3 Small tool allowance - 37 6 42 42 2d.3.4 Decommissioning Equipment Disposition 130 67 1,112 178 - 234 1,722 1,722 6,000 529 303,608	1.47
2d.3.4 Decommissioning Equipment Disposition 130 67 1,112 178 - 234 1,722 1,722 6,000 529 303,608 2d.3.5 Prairie Island Indian Community Payments 975 - 975 - 975	147 -
2d.3. Subtotal Period 2d Collateral Costs 31 37 185 215 1,112 514 975 367 3,437 2,462 975 - 6,000 1,050 349,977	246
Period 2d Period Dependent Costs         2d.4.1 Decon supplies       59       -	_
2d.4.2 Insurance 378 38 416 416	
2d.4.3 Property taxes 2,004 200 2,204	
2d.4.4 Health physics supplies - 575 · · · - 144 719 719 · · · · · · · · · · · · · · · · · · ·	
2d.4.5 Heavy equipment rental 2,007 301 2,308 2,308	
2d.4.6 Disposal of DAW generated - 16 7 - 68 - 20 111 111 830 16,609	27 -
2d.4.7 Plant energy budget 506 76 582 582 2d.4.8 NRC Fees 439 44 483 483	
2d.4.5   Mic Fees	
2d.4.0 Fixed Overhead 929 139 1.068 1.068	_
2d.4.11 Liquid Radwaste Processing Equipment/Services	-
2d.4.12 ISFSI Operating Costs 44 7 50 50	•
2d.4.13 Railroad Track Maintenance	-
2d.4.14 Remedial Actions Surveys	
2d.4.15 Security Staff Cost 5,782 867 6,649 4,694 1,955	- 84,454 - 70,248
2d.4.16 DUC Start Cost	- 126,681
2d.4 Subtotal Period 2d Period-Dependent Costs 59 2,582 16 7 - 68 25,896 4,220 32,848 30,323 2,525 830 16,609	27 281,377
2d.0 TOTAL PERIOD 2d COST 740 4,608 340 360 2,673 1,763 27,908 6,284 44,675 41,175 3,501 - 15,325 5,377 968,427	27,910 287,617

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Table D-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(Th	ousands	of 2020 Dollar	rs)											
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 2f - License Terr	mination																				
Period 2f Direct Decommiss 2f.1.1 ORISE confirmat 2f.1.2 Terminate licens 2f.1 Subtotal Period 2	tory survey se	-	-	-	-	-	-	166 166	50 50	216 a 216	216 216	-	-	-	-	-	-	-	-	-	-
Period 2f Additional Costs 2f.2.1 License Termina 2f.2 Subtotal Period 2	tion Survey 2f Additional Costs	-	-	-		-		3,199 3,199	960 960	4,159 4,159	4,159 4,159	-	-		-		-	-	-	40,531 40,531	3,120 3,120
	tion expenses dian Community Payments 2f Collateral Costs	- - -	- - -	- - -	- - -	- - -	- - -	1,264 934 2,198	190 - 190	1,454 934 2,388	1,454 - 1,454	934 934	- -	- - -	- - -		- - -	- - -	- - -	- - -	- - -
Period 2f Period-Dependent 2f.4.1 Insurance 2f.4.2 Property taxes 2f.4.3 Health physics s	upplies	- - -	- - 501	- - -	- - -	- - -	- - - -	362 1,771	36 177 125	398 1,948 626	398 1,948 626	- - -	- - -	- - -	- - - -	- - -	- - -	- - -			- - -
2f.4.4 Disposal of DAW 2f.4.5 Plant energy bud 2f.4.6 NRC Fees 2f.4.7 Emergency Plant 2f.4.8 Fixed Overhead	ning Fees	- - - - -	- - - -	- - - -	3 - - - -		28 - - -	243 422 55 890	8 36 42 6 133	45 279 465 61 1,023	45 279 465 - 1,023	61	- - - -	- - - -	334 - - - -		- - - -	- - - -	6,685 - - - -	11 - - - -	- - -
2f.4.9 ISFSI Operating 2f.4.10 Railroad Track N 2f.4.11 Security Staff Co 2f.4.12 DOC Staff Cost 2f.4.13 Utility Staff Cost	Maintenance ost t	- - - - -	- - - -	- - - -	- - - -	- - - -		42 47 5,538 4,238 4,011	6 7 831 636 602	48 54 6,369 4,874 4,613	54 4,497 4,874 4,175	48 - 1,873 - 438	- - -	- - - -	- - - -	- - - -	- - - -	- - -		- - - -	80,898 46,283 59,507
2f.4 Subtotal Period 2 2f.0 TOTAL PERIOD	2f Period-Dependent Costs	-	501 501	7	3	-	28 28	17,620 23,183	2,646 3,845	20,803 27,566	18,384 24,212	2,420 3,354	-	-	334 334	-	-	-	6,685 6,685	11 40,542	
PERIOD 2 TOTALS		5,134	58,338	20,860				284,307	84,964	525,155	429,593	89,987	5,576	138,734		237	673	_	13,198,890	527,156	1,927,726
PERIOD 3b - Site Restora	ation																				
Period 3b Direct Decommiss	sioning Activities																				
Demolition of Remaining Si 3b.1.1.1 Reactor 3b.1.1.2 Condensate Stor. 3b.1.1.3 Structures below 3b.1.1.4 Turbine 3b.1.1.5 Turbine Pedestai 3b.1.1 Totals	age Tank Foundation 73' below grade		4,644 3 1,651 2,139 365 8,803		- - - - -	- - - - -		- - - -	697 0 248 321 55 1,320	5,341 4 1,899 2,460 420 10,123			5,341 4 1,899 2,460 420 10,123		- - - - -	- - - - -		- - - -		44,669 16 8,411 21,985 1,857 76,939	-
Site Closeout Activities 3b.1.2 Grade & landsca 3b.1.3 Final report to N 3b.1 Subtotal Period 3	IRC	- - -	448 - 9,251	- - -	- - -		- - -	200 200	67 30 1,418	515 231 10,869	231 231	- - -	515 - 10,639	- - -	- - -	- - -	- - -	- - -		921 - 77,859	1,560 1,560
Period 3b Additional Costs           3b.2.1         Clean Concrete I           3b.2.2         Intake Strucutre           3b.2.3         Construction Del           3b.2.4         Backfill           3b.2         Subtotal Period 3	Cofferdam	: : :	2,242 623 - 3,011 5,875	- - - -			- - - -	5 - 10 - 15	337 93 2 452 883	2,583 716 12 3,462 6,773	- - - -	- - - -	2,583 716 12 3,462 6,773	- - - -	- - - -	- - - -	- - - -		- - - -	8,386 5,168 - 2,904 16,458	-
Period 3b Collateral Costs 3b.3.1 Small tool allows 3b.3.2 Prairie Island In		- - -	120 - 120		- - -			2,649 2,649	18 -	138 2,649 2,787		2,649 2,649	138	- - -			- - -		:	- -	- - -
Period 3b Period-Dependent 3b.4.1 Insurance 3b.4.2 Property taxes	t Costs	- -	- -	- -	- -	- -	- -	513 4,167	51 417	565 4,583	565 -	4,583	- -	- -	- -	- -	- -	- -	- -	-	- -

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Table D-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(Tł	housands	s of 2020 Dolla	rs)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Volumes		Burial /		Utility and
Activit; Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs			Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A	Class B	Class C Cu. Feet	GTCC Cu. Foot	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
	* • •	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Ou. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., LDS.	Mannours	Mannours
Period 3 3b.4.3	b Period-Dependent Costs (continued) Heavy equipment rental		7,144					_	1,072	8,215		_	8,215								
3b.4.4	Plant energy budget	-		-	-	-	-	344		395	-	395	0,210	-	-	-	-	-		-	-
3b.4.5	NRC ISFSI Fees	-	-	-	-	-	-	218	22	239	-	239	-	-	-	-	-	-	_	-	-
3b.4.6	Emergency Planning Fees	-	-	-	-	-	-	157		173	-	173	-	-	-	-	-	-	-	-	-
3b.4.7	Fixed Overhead	-	-	-	-	-	-	1,024		1,178	397	781	-	-	-	-	-	-	-	-	-
3b.4.8 3b.4.9	ISFSI Operating Costs Railroad Track Maintenance	-	-	-	-	-	-	119 361	18 54	136 416	153	136 263	-	-	-	-	-	-	-	-	-
3b.4.10	Security Staff Cost	-	_	-	_	-	_	4,616		5,308	-	5,308	-	_	_	_	_	_	_	-	57,340
3b.4.11	DOC Staff Cost	-	-	-	-	-	-	10,921	1,638	12,559	-	-	12,559	-	-	-	-	-	-	-	116,885
3b.4.12	Utility Staff Cost	•		-	-	-	-	5,004		5,755	-	1,237	4,517	-	-	-	-	-	-	-	74,431
3b.4	Subtotal Period 3b Period-Dependent Costs	<del>-</del>	7,144	-	-	-	-	27,444	4,935	39,523	1,114	13,117	25,292	-	-	-	-	-	-	-	248,656
3b.0	TOTAL PERIOD 3b COST	-	22,390	-	-	-	-	30,308	7,255	59,952	1,345	15,766	42,842	-	-	-	-	-	-	94,317	250,216
PERIO	D 3c - Fuel Storage Operations/Shipping																				
Period 3	c Direct Decommissioning Activities																				
	c Collateral Costs								. =												
3c.3.1 3c.3.2	Spent Fuel Capital and Transfer Prairie Island Indian Community Payments	•	-	-	-	-	-	18,191 44,363		20,919 44,363	-	20,919 44,363	-	-	-	-	-	-	-	-	-
3c.3	Subtotal Period 3c Collateral Costs	-	-	-	-	-	-	62,554	2,729	65,283	-	65,283	-	-	-	-	-	-	-	-	-
Dowind 9	c Period-Dependent Costs																				
3c.4.1	Insurance	-	_	_	-	_	_	8,599	860	9,459	-	9,459	-	_	_	_	_	-	_	_	_
3c.4.2	Property taxes	-	-	-	-	-	-	49,245		54,169	-	54,169	-	-	-	-	-	-	_	-	-
3c.4.3	Plant energy budget	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-
3c.4.4	NRC ISFSI Fees	-	-	-	-	-	-	5,140		5,653	-	5,653	-	-	-	-	-	-	-	-	-
3c.4.5 3c.4.6	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	2,633 5,787	263 868	2,896 6,655	-	2,896 6,655	-	-	-	-	-	-	-	-	-
3c.4.7	ISFSI Operating Costs	-	-	-	-	-	-	1,988		2,286	-	2,286	-	-	-	-	-	-		-	-
3c.4.8	Railroad Track Maintenance	-	-	-	-	-	-	2,220		2,554	-	2,554	-	-	-	-	-	-	-	-	-
3c.4.9	Security Staff Cost	-	-	-	-	-	-	77,306		88,902	-	88,902	-	-	-	-	-	-	-	-	960,328
3c.4.10	Utility Staff Cost Subtotal Period 3c Period-Dependent Costs	-	-	-	-	-	-	18,035 170,952	2,705 22,362	20,740 193,314	-	20,740 193,314	-	-	-	-	-	-	-	-	249,316 1,209,643
3c.4	-	-	-	-	-	-	-	170,952	22,362	193,314	-	193,314	-	-	-	-	-	-	-	-	
3c.0	TOTAL PERIOD 3c COST	-	-	-	-	-	-	233,506	25,091	258,597	-	258,597	-	-	-	-	-	-	-	-	1,209,643
PERIO	D 3d - GTCC shipping																				
Period 3	d Direct Decommissioning Activities																				
	Steam Supply System Removal			1 4 4 4			0.000		1 000	11.505	11.505							1.550	944.000		
3d.1.1.1 3d.1.1	Vessel & Internals GTCC Disposal Totals	-	-	1,444 1,444		-	8,680 8,680		1,663 1,663	11,787 11,787	11,787 11,787	-	-	-	-	-	-	1,773 1,773	344,823 344,823	-	-
3d.1	Subtotal Period 3d Activity Costs	-	-	1,444		-	8,680		1,663	11,787	11,787	-	-	-	-	-	-	1,773	344,823	-	-
Period 3	d Collateral Costs																				
3d.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	28	4	32	-	32	-	-	-	-	-	-	-	-	-
3d.3.2	Prairie Island Indian Community Payments	-	-	-	-	=	-	48	-	48	-	48	-	-	-	-	-	-	-	-	-
3 <b>d</b> .3	Subtotal Period 3d Collateral Costs	-	-	-	-	-	-	76	4	80	-	80	-	-	-	-	-	-	-	-	-
	d Period-Dependent Costs																				
3d.4.1	Insurance	ē	-	-	-	-	-	9	1	10	10	Ē	÷	-	-	-	-	-	-	=	÷
3d.4.2 3d.4.4	Property taxes NRC ISFSI Fees	-	-	-	-	-	-	53 4	5	58 4	58	4	-	-	-	-	-	-	-	-	-
3d.4.4	Emergency Planning Fees	-	-	-	-	-	-	3	0	3	-	3	-		-	-	-	-		-	-
3d.4.6	Fixed Overhead	-	-	-	-	-	-	6	1	7	7	-	-	-	-	-	-	-	-	-	-
3d.4.7	Railroad Track Maintenance	-	-	-	-	-	-	2	0	3	3		-	-	-	-	-	-	-	-	-
3d.4.8 3d.4.9	Security Staff Cost Utility Staff Cost	-	-	-	-	-	-	83 19		96 22	96 22		-	-	-	-	-	-	-	-	1,037 269
3d.4.9 3d.4	Subtotal Period 3d Period-Dependent Costs	-	-	-	-	-	-	181	24	204	197	7	-	-	-	-	-	-	-	-	1,306
3d.0	TOTAL PERIOD 3d COST	-	-	1,444		-	8,680			12,071	11,984	87	-	-	-	-	-	1,773	344,823	-	1,306
							,		* 1									,			•

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Table D-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(	o usumus	or 2020 Dona												
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Rurial	Volumes		Burial /		Utility and
Activit	v	Decon	Removal	Packaging	Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index		Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
PERIO	O 3e - ISFSI Decontamination																				
Period 3	e Direct Decommissioning Activities																				
Period 3 3e.2.1	e Additional Costs License Termination ISFSI		24	81	435		2,532	839	978	4,890	4,890				9,355	_			1,123,457	3,762	1,065
3e.2.1	Subtotal Period 3e Additional Costs	-	24				2,532	839	978	4,890	4,890	-	-	-	9,355	-	-	-	1,123,457	3,762	1,065
Period 3	e Period-Dependent Costs																				
3e.4.1	Insurance	-	-	-	-	-	-	93	23	116	116	-	-	-	-	-	-	-	-	-	-
3e.4.2	Property taxes	-	-	-	-	-	-	56	14	69	69	-	-	-	-	-	-	-	-	-	-
3e.4.3	Plant energy budget	-	-	-	-	-	-	11	3	13	13	-	-	-	-	-	-	-	-	-	-
3e.4.4	Fixed Overhead Railroad Track Maintenance	=	-	-	-	-	-	54 21	14 5	68 26	68 26	-	-	-	-	-	-	-	-	-	-
3e.4.5 3e.4.6	Security Staff Cost	-	-	-	-	-	-	174	43	217	26 217	-	-	-	-	-	-	-	-	-	2.500
3e.4.7	Utility Staff Cost	-	-	-	-	-	-	129	32	161	161	-	-	-	-	-	-	-	-	-	1,896
3e.4	Subtotal Period 3e Period-Dependent Costs	-	-	-	-	-	-	536	134	670	670	-	-	-	-	-	-	-	-	-	4,396
3e.0	TOTAL PERIOD 3e COST	-	24	81	435	-	2,532	1,375	1,112	5,560	5,560	-	-	-	9,355	-	-	-	1,123,457	3,762	5,460
PERIO	O 3f - ISFSI Site Restoration																				
Period 3	f Direct Decommissioning Activities																				
Period 3	f Additional Costs																				
3f.2.1	Demolition and Site Restoration of ISFSI	-	515	-	-	-	-	68	87	670	-	-	670	-	-	-	-	-	-	2,219	80
3f.2	Subtotal Period 3f Additional Costs	-	515	-	-	-	-	68	87	670	-	-	670	-	-	-	-	-	-	2,219	80
Period 3	f Collateral Costs																				
3f.3.1	Small tool allowance	-	3	-	-	-	-	-	0	4	-	-	4	-	-	-	-	-	-	-	-
3f.3	Subtotal Period 3f Collateral Costs	-	3	-	-	-	-	-	0	4	-	-	4	-	-	-	-	-	-	-	-
	f Period-Dependent Costs																				
3f.4.2	Property taxes	-	-	-	-	-	-	28	3	31	-	-	31	-	-	-	-	-	-	-	-
3f.4.3	Heavy equipment rental	-	59	-	-	-	-	-	9	68	-	-	68	-	-	-	-	-	-	-	-
3f.4.4	Plant energy budget Fixed Overhead	=	-	-	-	-	-	6 28	1	6 32	-	-	6 32	-	-	-	-	-	-	-	-
3f.4.5 3f.4.6	Railroad Track Maintenance	-	-	-	-	-	-	28 11	2	32 12	-	-	32 12	-	-	-	-	-	-	-	-
3f.4.6	Security Staff Cost	-	-	-	-	-	-	89	13	102	-	-	102	-	-	-	-	-	-	-	1,281
3f.4.8	Utility Staff Cost	- -	-	-	-	-	-	55	8	63	-	-	63	-	-		-	-	-	-	795
3f.4	Subtotal Period 3f Period-Dependent Costs	-	59	-	-	-	-	216	40	315	-	-	315	-	-	-	-	-	-	-	2,076
3f.0	TOTAL PERIOD 3f COST	-	577	-	-	-	-	284	128	989	-	-	989	-	-	-	-	-	-	2,219	2,156
PERIO	O 3 TOTALS	-	22,992	1,525	435	-	11,212	265,729	35,276	337,169	18,889	274,449	43,831	-	9,355	-	-	1,773	1,468,280	100,298	1,468,781
TOTAL	COST TO DECOMMISSION	8,929	87,309	22,838	8,068	22,651	58,542	668,385	141,143	1,017,865	595,962	370,904	50,998	144,866	167,555	826	673	1,773	15,277,230	672,967	4,397,236

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Xcel Energy

Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

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 Processed Volume
 Burial Volumes
 Burial / Processed

 Cu. Feet
 Class B
 Class C
 GTCC
 Processed

 Cu. Feet
 Cu. Feet
 Cu. Feet
 Cu. Feet
 Cu. Feet
 Wt., Lbs.

Spent Fuel Site Management Restoration

Total Lic. Term.

#### Table D-1 Prairie Island DECON Unit 1 DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage (Thousands of 2020 Dollars)

Activity		Decon	Removal	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	
									_
TOTAL COST TO	O DECOMMISSION WITH 16.1% CONTINGENCY	:			\$1,017,865	thousands of	2020 dollars	3	
TOTAL NRC LIG	CENSE TERMINATION COST IS 58.55% OR:				\$595,962	thousands of	2020 dollars	3	
SPENT FUEL M	ANAGEMENT COST IS 36.44% OR:				\$370,904	thousands of	2020 dollars	;	
NON-NUCLEAR	DEMOLITION COST IS 5.01% OR:				\$50,998	thousands of	2020 dollars	3	
TOTAL LOW-LE	EVEL RADIOACTIVE WASTE VOLUME BURIED	(EXCLUDIN	G GTCC):		169,054	Cubic Feet			
TOTAL GREATI	ER THAN CLASS C RADWASTE VOLUME GENE	RATED:			1,773	Cubic Feet			
TOTAL SCRAP	METAL REMOVED:				32,925	Tons			
TOTAL CRAFT	LABOR REQUIREMENTS:				672,967	Man-hours			1

End Notes: n/a - indicates that this activity not charged as decommissioning expense a - indicates that this activity performed by decommissioning staff 0 - indicates that this value is less than 0.5 but is non-zero A cell containing " - " indicates a zero value

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### Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

# Table D-2 Prairie Island DECON Unit 2 DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage (Thousands of 2020 Dollars)

							(111	o asamas o	or 2020 Domars	3)											
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A	Class B	Volumes Class C	GTCC	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
	hutdown through Transition	Cost	COST	0000	COSCS	COOLS	COSES	Costs	contingency	Costs	0000	Costs	Costs	o un T cot	0417000	04.7000	04.7000	04.1000	1101, 2351	Mamours	Mamour
Period 1a Direct	Decommissioning Activities																				
	are preliminary decommissioning cost	-	-	-	-	-	-	71	11	82	82	-	-	-	-	-	-	-	-	-	556
	cation of Cessation of Operations ve fuel & source material									a n/a											
1a.1.4 Notific	cation of Permanent Defueling									a											
	ivate plant systems & process waste are and submit PSDAR							110	16	a 126	126										855
	w plant dwgs & specs.	-	-	-	-	-	-	253	38	291	291	-	-	-	-	-	-	-	-		1,967
	rm detailed rad survey									a											
	nate by-product inventory product description	-	-	-	-	-	-	55 55	8	63 63	63 63	-	-	-	-	-	-	-	-	-	428 428
	led by-product inventory	-	-	-	-	-		71	11	82	82	-	-	-	-	-	-	-	-	-	550
	e major work sequence rm SER and EA	-	-	-	-	-	-	412	62	474	474	-	-	-	-	-	-	-	-	-	3,20′ 1,326
	rm SER and EA ure/submit Defueled Technical Specifications	-	-	-	-	-	-	170 412	26 62	196 474	196 474	-	-	-	-	-	-	-	-	-	3,207
1a.1.15 Perfor	rm Site-Specific Cost Study	-	-	-	-	-	-	275	41	316	316	-	-	-	-	-	-	-	-	-	2,138
1a.1.16 Prepa	ure/submit Irradiated Fuel Management Plan	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
Activity Specifica 1a.1.17.1 Plant	ations & temporary facilities	-	-	-	-	_	-	270	41	311	280	-	31	-	-	-	-	-	-	-	2,104
1a.1.17.2 Plant	systems	-	-	-	-	-	-	229	34	263	237	-	26	-	-	-	-	-	-	-	1,782
1a.1.17.3 NSSS 1a.1.17.4 Reacto	Decontamination Flush	-	-	-	-	-	-	27 390	4 59	32 449	32 449	-	-	-	-	-	-	-	-	-	214 3,036
1a.1.17.4 Reacto		-		-	-	-		357	54	411	411	-	-	-	-	-		-	-	-	2,779
1a.1.17.6 Biolog		-	-	-	-	-	-	27	4	32	32	-	-	-	-	-	-	-	-	-	214
1a.1.17.7 Steam 1a.1.17.8 Reinfo		-	-	-	-	-	-	171 88	26 13	197 101	197 51	-	- 51	-	-	-	-	-	-	-	1,334 684
1a.1.17.9 Main		-	-	-	-	-	-	22	3	25	-	-	25	-	-	-	-	-	-		171
1a.1.17.10 Main		-	-	-	-	-	-	22	3	25	-	-	25	-	-	-	-	-	-	-	171
1a.1.17.11 Plant 1a.1.17.12 Waste	structures & buildings	-	-	-	-	-	-	171 253	26 38	197 291	99 291	-	99	-	-	-	-	-	-	-	1,334 1,967
	ty & site closeout	-	-	-		-	-	49	7	57	28	-	28	-	-	-	-	-	-	-	385
1a.1.17 Total		-	-	-	-	-	-	2,079	312	2,391	2,105	-	286	-	-	-	-	-	-	-	16,175
Planning & Site																					
	re dismantling sequence prep. & temp. svces	-	-	-		-	-	132 3,500	20 525	152 4,025	152 4,025	-	-	-	-	-	-	-	-	-	1,026
1a.1.20 Design	n water clean-up system	-	-	-	-	-	-	77	12	88	88	-	-	-	-	-	-	-	-	-	599
	ng/Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,400 68	360	2,760	2,760	-	-	-	-	-	-	-	-	-	- 526
	re casks/liners & containers tal Period 1a Activity Costs	-	-	-	-	-	-	10,195	$10 \\ 1,529$	78 $11,724$	78 11,439	-	286	-	-	-	-	-	-	-	33,420
Period 1a Additio																					
	Fuel Pool Isolation Ital Period 1a Additional Costs	-	-	-	-	-		8,450 8,450	1,268 1,268	9,718 9,718	9,718 9,718	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	6,450	1,200	9,716	9,710	•	-	-	-	-	-	-	-	-	-
Period 1a Collate 1a.3.1 Spent	eral Costs Fuel Capital and Transfer							1,330	199	1,529	_	1,529									
1a.3.2 Reten	tion and Severance	-	-	-	-	-	-	8,394	1,259	9,653	9,653	-	-	-	-	-	-	-	-	-	-
	ie Island Indian Community Payments	-	-	-	-	-	-	1,249	-	1,249	-	1,249	-	-	-	-	-	-	-	-	-
	tal Period 1a Collateral Costs	-	-	-	-	-	-	10,973	1,459	12,432	9,653	2,779	-	-	-	-	-	-	-	-	-
Period 1a Period- 1a.4.1 Insura		_						1,660	166	1,826	1,826	_			_						
1a.4.2 Proper	erty taxes	-	-	-	-	-	-	3,623	362	3,985	3,985	-	-	-	-	-	-	-	-	-	-
1a.4.3 Health	h physics supplies	-	578	-	-	-	-	-	144	722	722	-	-	-	-	-	-	-	-	-	-
	y equipment rental sal of DAW generated	-	753 -	11	- 5		47	-	113 13	866 76	866 76	-	-	-	- 565	-	-	-	11,299	18	-
1a.4.6 Plant	energy budget	-	-	-	-	-	-	1,621	243	1,864	1,864	-	-	-	-	-	-	-		-	-
1a.4.7 NRC I		-	-	-	-	-	-	638	64	702	702	- 0.000	-	-	-	-	-	-	-	-	-
	gency Planning Fees Overhead	-	-	-	-	-	-	2,174 1,440	217 216	2,392 1,656	1,656	2,392	-	-	-	-	-	-	-	-	-
1a.4.10 Spent	Fuel Pool O&M	-	-	-	-	-	-	422	63	486	-	486	-	-	-	-	-	-	-	-	-
1a.4.11 ISFSI	Operating Costs	-	-	-	-	-	-	56	8	64	-	64	-	-	-	-	-	-	-	-	-

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Table D-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(111)	ousanus (	oi 2020 Dollars	3)											
Activity	y	Decon	Removal	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Total	Total	NRC Lic. Term.	Spent Fuel Management	Site Restoration	Processed Volume	Class A	Burial Class B	Volumes Class C	GTCC	Burial / Processed	Craft	Utility and Contractor
Index		Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet		Cu. Feet			Manhours	Manhours
Period 1a	a Period-Dependent Costs (continued)																				
1a.4.12	Railroad Track Maintenance	-	-	-	-	-	-	63	9	72	72	-	-	-	-	-	-	-	-	-	-
1a.4.13 1a.4.14		-	-	-	-	-		8,328 21,681	1,249 3,252	9,577 24,933	9,577 24,933	-	-	-	-	-	-	-	-	-	122,720 345,280
1a.4.14	Subtotal Period 1a Period-Dependent Costs	-	1,331	11	5	-	47		6,122	49,221	46,279	2,942	-	-	565	-	-	-	11,299	18	
1a.0	TOTAL PERIOD 1a COST	-	1,331	11	5	-	47	71,324	10,377	83,095	77,089	5,720	286	-	565	-	-	-	11,299	18	501,420
PERIOI	D 1b - Decommissioning Preparations																				
Period 11	b Direct Decommissioning Activities																				
	Work Procedures Plant systems							260	39	299	269		30								2,024
	NSSS Decontamination Flush	-		-	-	-		55	8	63	63	-	-		-	-	-	-	-		428
1b.1.1.3		-	-	-	-	-	-	137	21	158	158	-	-	-	-	-	-	-	-	-	1,069
	Remaining buildings CRD cooling assembly	-	-	-	-	-	-	74 55	11 8	85 63	21 63	-	64		-	-	-	-	-	-	577 428
1b.1.1.6	CRD housings & ICI tubes	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
1b.1.1.7 1b.1.1.8	Incore instrumentation Reactor vessel	-	-	-	=	-	-	55 199	8 30	63 229	63 229	-	-	-	-	-	-	-	-	-	428
	Facility closeout	-	-	-	-	-	-	66	10	76	38	-	38	-	-	-	-	-	-	-	1,552 513
	) Missile shields	-	-	-	-	-	-	25	4	28	28	-	-	-	-	-	-	-	-	-	192
	1 Biological shield 2 Steam generators	-		-	-	-		66 253	10 38	76 291	76 291	-	-		-	-	-	-	-	-	513 1,967
	Reinforced concrete	-	-	-	-	-	-	55	8	63	32	-	32	-	-	-	-	-	-	-	428
	Main Turbine	-	-	-	-	-	-	86	13	99	-	-	99	-	-	-	-	-	-	-	667 667
	5 Main Condensers 6 Auxiliary building	-		-	-	-		86 150	13 23	99 173	155	-	99 17		-	-	-	-	-		1,167
1b.1.1.17	7 Reactor building	-	-	-	-	-	-	150	23	173	155	-	17		-	-	-	-	-	-	1,167
1b.1.1	Total	-	-	-	-	-	-	1,827	274	2,101	1,706	-	395	-	-	-	-	-	-	-	14,215
1b.1.2 1b.1	Decon primary loop Subtotal Period 1b Activity Costs	572 572		-	-	-	-	1,827	286 560	859 2,959	$859 \\ 2,564$	-	- 395	-	-	-	-	-	-	1,067 1,067	14,215
Period 11	b Additional Costs																				
1b.2.1	Site Characterization	-	-	-	-	-	-	1,505	451	1,956	1,956	-	-	-	-	-	-	-	-	8,988	3,563
1b.2.2 1b.2.3	Mixed/Hazardous Waste Asbestos Abatement	-	2,526	353 3			1,369	-	76 996	702 5,044	702 5,044	- -	-	6,132	12,843	-	-	-	351,977 166,959	2,348 20,907	-
1b.2	Subtotal Period 1b Additional Costs	-	2,526	356		178	1,369		1,524	7,702	7,702	-	-	6,132		-	-	-	518,936	32,243	3,563
Period 11 1b.3.1	b Collateral Costs Decon equipment	1,055	_	_	_	_	_	_	158	1,213	1,213	_	_	_	_	_	_	_	_	-	_
1b.3.2	DOC staff relocation expenses	· -	-	-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-
1b.3.3 1b.3.4	Process decommissioning water waste Process decommissioning chemical flush waste	25 2		16 61	29 199	-	66 3,889		35 1,009	172 5,159	172 5,159	-	-	-	152	- 588	-	-	9,127 62,689	30 110	-
1b.3.4 1b.3.5	Small tool allowance	-	36	-	-	-	3,003	-	5	42	42	-	-		-	-	-	-	- 02,009	-	-
1b.3.6	Pipe cutting equipment	-	1,200	-	-	-	-	-	180	1,380	1,380	-	-	-	-	-	-	-	-	-	-
1b.3.7 1b.3.8	Decon rig Spent Fuel Capital and Transfer	2,104	-	-	-	-	-	399	316 60	2,419 459	2,419	459	-	-	-	-	-	-	-	-	-
1b.3.9	Retention and Severance	-	-	-	-	-	-	4,017	603	4,620	4,620	-	-	-	-	-	-	-	-	-	-
1b.3.10 1b.3	Prairie Island Indian Community Payments Subtotal Period 1b Collateral Costs	3.185	1,236	- 77	228	-	3,955	623 6.303	2,555	623 17,540	16,458	623 1.082	-	-	152	- 588	-	-	71,815	140	-
	b Period-Dependent Costs	-,	-,				-,	-,	_,,	,	,	-,							,		
1b.4.1	Decon supplies	38	-	-	-	-	-	-	9	47	47	-	-	-	-	-	-	-	-	-	-
1b.4.2 1b.4.3	Insurance	-	-	-	=	-	-	828 1,713	83 171	910	910 1,884	-	-	-	-	-	-	-	-	-	=
1b.4.3 1b.4.4	Property taxes Health physics supplies	-	449	-	-	-	-	1,713	111	1,884 561	1,884 561	-	-	-	-	-	-	-	-	-	-
1b.4.5	Heavy equipment rental	-	375			-	-	-	56	432	432	-	-	-	-	-	-	-		-	-
1b.4.6 1b.4.7	Disposal of DAW generated Plant energy budget	-	-	6	3	-	27	1,617	8 243	43 1,859	43 1,859	-	-	-	324	-	-	-	6,473	11	-
1b.4.8	NRC Fees	-	-	-	-	-		196	20	216	216	-	-		-	-	-	-	-	-	-
1b.4.9	Emergency Planning Fees	-	-	-	-	-	-	1,084	108	1,193	-	1,193	-	-	-	-	-	-	-	-	-
1b.4.10 1b.4.11	Fixed Overhead Spent Fuel Pool O&M	-	-		-	-	-	718 211	108 32	826 242	826	242	-	-	-	-	-	-	-	-	-
1b.4.12	ISFSI Operating Costs	-	-	-	-	-	-	28	4	32	-	32	-	-	-	-	-	-	-	-	-
1b.4.13	Railroad Track Maintenance	•	-	-	-	-	-	31	5	36	36	-	-	-	-	-	-	-	-	-	-

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Table D-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

(Thousands of 2020 Dollars)																					
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Burial Volumes		Burial/		Utility and
Activity		Decon	Removal	Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
	Dependent Costs (continued)																				
	ity Staff Cost	-	-	-	-	-	-	4,153	623	4,775	4,775	-	-	-	-	-	-	-	-	-	61,19
	Staff Cost y Staff Cost	-	-	-	-	-	-	4,182 10,811	627 1,622	4,810 12,432	4,810 12,432	-	-	-	-	-	-	-	-		46,67 172,16
	tal Period 1b Period-Dependent Costs	38	825	6	3	-	27	25,571	3,830	30,299	28,832	1,467	-	-	324	-	-	-	6,473	11	
1b.0 TOTA	L PERIOD 1b COST	3,795	4,586	440	475	178	5,351	35,206	8,470	58,501	55,557	2,549	395	6,132	13,319	588	-	_	597,225	33,460	297,80
PERIOD 1 TOT.		3,795		451	479	178			18,847	141,595	132,646	8,269	681	6,132		588	_	_	608,524	33,478	
	arge Component Removal	0,.00	0,017	101	110	110	0,000	100,001	10,011	111,000	102,010	0,200	001	0,102	10,001	000			000,021	33,110	100,22
	Decommissioning Activities																				
	_																				
Nuclear Steam St 2a.1.1.1 Reacto	upply System Removal or Coolant Piping	54	47	10	18	-	187	_	89	406	406	-	-	_	508	_	_	_	35,411	1,421	-
	urizer Relief Tank	24		6	12		125	-	51	238	238	-	-	-	338	-	-	-	23,594	630	-
	or Coolant Pumps & Motors	57	68	110	93	-	463	-	186	977	977	=	-	-	2,332		-	-	295,800	2,049	
2a.1.1.4 Pressu		-	77	503	97		776		278	1,732	1,732	-	-		2,196		-	-	185,015	1,666	
	Generators	-	3,307	2,269	1,770	2,409	4,001	-	2,681	16,437	16,437	-	-	18,672			-	-	1,689,435	11,613	
	Ms/ICIs/Service Structure Removal or Vessel Internals	302 82		218 13,621	66 929	-	938 9,015	307	488 11,878	2,294 40,693	2,294 40,693	-	-	-	4,797 501		673	-	177,400 164,987	8,104 25,123	
	or Vessel	94		2,028	728	-	2,975	307	6,804	18,982	18,982	-	-	-	8,073		619	-	576,524	25,123	
2a.1.1 Totals		613		18,764	3,714	2,409		614	22,455	81,759	81,759	-	-	18,672			673	-	3,148,166	75,729	
Removal of Major	r Equipment																				
	Turbine/Generator	-	331	172	64	527	377	-	283	1,752	1,752	-	-	2,131			-	-	203,265	4,667	-
2a.1.3 Main G	Condensers	-	2,801	109	62	705	533	-	960	5,170	5,170	-	-	3,800	1,587	-	-	-	271,824	39,151	-
	from Clean Building Demolition																				
2a.1.4.1 Reacto		-	794	-	-	-	-	-	119	913	913	-	-	-	-	-	-	-	-	7,589	
2a.1.4.2 Auxilia		-	221	-	-	-	-	-	33	254	254	-	-	-	-	-	-	-	-	1,309	
2a.1.4.3 Radwa 2a.1.4 Totals		-	9 1,023	-	-	-	-	-	1 154	10 1,177	10 1,177	-	-	-	-	-	-	-	-	65 8,963	
			-,							-,	-,									-,	
Disposal of Plant 2a.1.5.1 Admin	Systems n Bldg Ventilation		6						1	7			7							90	
2a.1.5.2 Air Re			29	-	-	-		-	4	33		-	33	-	-	-		-	-	422	
	ary Feedwater	_	46	_	_	_	-	-	7	53	-	-	53		_	-	-	-	-	676	
	ary Feedwater - RCA	-	38	0	1	30	-	-	14	84	84	-	-	178	-	-	-	-	7,214	486	
	Steam	-	90	-	-	-	-	-	13	103	-	=	103		-	-	-	-	-	1,331	-
	ic Addition - RCA	-	40	0	2	40	-	-	16	99	99	-		240	-	-	-	-	9,761	468	
	ical Feed	-	17	- 0	- 0	-	-	-	3	20 7		-	20		-	-	-	-	-	261	
	ical Feed - RCA lating Water	-	3 27	0	0	3	-	-	1 4	32	7	-	32	16	-	-	-	-	634	31 401	
2a.1.5.10 Conde		-	525	-	-	-	-	-	79	603	-	-	603		-	-	-	-	-	7,537	
2a.1.5.11 Conde		_	208	-	-	_	_	-	31	239	-	=	239		_	-	-	-	-	2,987	
2a.1.5.12 Conde	ensate Polishing - RCA	-	38	1	4	81	-	-	22	145	145	-	-	483	-	-	-	-	19,616	493	-
2a.1.5.13 Electro		-	10	-	-	-	-	-	1	11	-	-	11		-	-	-	-	-	143	
	nal Circulating Water	-	26	-	-	-	-	-	4	30	-	-	30		-	-	-	-		385	
	nal Circulating Water - RCA	-	72	1	5	121	-	-	37	237	237	-	140	721	-	-	-	-	29,284	938	
2a.1.5.16 Feedw 2a.1.5.17 Feedw		-	127 248	- 8	31	694	-	-	19 171	146 1,152	1,152	-	146	4,147	-	-	-	-	168,414	1,840 3,377	
2a.1.5.17 Feedw 2a.1.5.18 Gland		-	34		- 31	- 054	-	-	5	39	1,152	-	39		-	-	-	-	100,414	504	
2a.1.5.19 Heater		_	384	_	_	_	_	-	58	441	-	_	441		_	_	-	_	_	5,638	
2a.1.5.20 Hypob	oromous Acid Feed	-	6	-	-	-	-	-	1	7	-	-	7	-	-	-	-	-	-	86	-
	promous Acid Feed - RCA	-	1	0	0	0	-	-	0	2	2	-	-	2	-	-	-	-	100	12	
	nal Circ Water & CDSR	-	25	-	-	-	-	-	4	29	-	-	29		-	-	-	-	-	366	
	Gen/Exciter/Transformer	-	0	-	-	-	-	-	0		-	-	0		-	-	-	-	-	5	
2a.1.5.24 Main S		-	101	-	-	- 001	-	-	15	116	1 505	-	116		-	-	-	-	900 700	1,482	
2a.1.5.25 Main S	Steam - RCA rable Spare Snubbers	-	380 6	11 0	38	864 2	-	-	231 2	1,525 10	1,525 10	-	-	5,166 12		-	-	-	209,799 490	5,146 82	
2a.1.5.26 Repair 2a.1.5.27 Steam		-	2	-	-	- 2	-	-	0	2	- 10	-	2	12	-	-	-	-	490	82 32	
2a.1.5.27 Steam 2a.1.5.28 Steam		-	4	0	0	4	-	-	2	10	10	-		24	_	-	-	-	966	47	
	Generator Blowdown	-	416	21	27	319	215	-	212		1,210	-	_	1,906		-	-	-	118,130	5,778	
	Generators		5						1	6	,		6	,					-,	75	

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Table D-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(The	ousands o	of 2020 Dollar	s)											
Activit; Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Disposal	of Plant Systems (continued)																				
	1 Turbine & Moisture Separators	-	377	-	-	-	-	-	57	434	-	-	434	-	-	-	-	-	-	5,472	-
	2 Turbine Oil Purification	-	53		-	-	-	-	8	61	-	-	61	-	-	-	-	-	-	757	-
2a.1.5.33		-	453 20		1	- 10	-	-	68 8	521 49	49	-	521	- 115	-	-	-	-	4.050	6,677	-
2a.1.5.34 2a.1.5	4 Water Treatment - RCA Totals	-	3,817		108	$\begin{array}{c} 19 \\ 2,177 \end{array}$	215	-	1,100	7,461	4,528	•	2,933	115 13,010	631	-	-	-	4,652 569,060	252 54,280	-
2a.1.6	Scaffolding in support of decommissioning	-	3,020	22	10	188	30	-	794	4,064	4,064	-	-	1,012	89	-	-	-	51,216	26,270	-
2a.1	Subtotal Period 2a Activity Costs	613	25,702	19,110	3,959	6,005	19,635	614	25,745	101,384	98,450	-	2,933	38,625	33,556	125	673	-	4,243,531	209,060	6,240
Period 2	a Additional Costs																				
2a.2.1	Retired RPV Upper Internals Package	-	257	387	217	-	1,394	-	1,041	3,296	3,296	-	-	-	376	112		-	50,164	3,333	133
2a.2	Subtotal Period 2a Additional Costs	-	257	387	217	-	1,394	-	1,041	3,296	3,296	-	-	-	376	112	-	-	50,164	3,333	133
	a Collateral Costs Process decommissioning water waste	49		33	60		134		70	347	347				308				18,487	60	
2a.3.1 2a.3.2	Process decommissioning water waste Process decommissioning chemical flush waste	49	-	99	60	-	154	-	70	347	347	-	-	-	308	-	-	-	10,401	60	-
2a.3.2 2a.3.3	Small tool allowance	-	269	-	-	-	-		40	309	278	-	31	-	-		-	-	-	-	-
2a.3.4	Spent Fuel Capital and Transfer	_	-	-	-	-	-	8,593	1,289	9,882		9,882		_	-	-	-	-	_	-	_
2a.3.5	Retention and Severance	-	-	-	-	-	-	8,215	1,232	9,447	9,447	· -	-	-	-	-	-	-	-	-	-
2a.3.6	Prairie Island Indian Community Payments	-	-	-	-	-	-	1,780	-	1,780	-	1,780		-	-	-	-	-	-	-	-
2a.3	Subtotal Period 2a Collateral Costs	49	269	33	60	-	134	18,588	2,632	21,765	10,072	11,662	31	÷	308	-	-	-	18,487	60	Ē
Period 2	a Period-Dependent Costs																				
2a.4.1	Decon supplies	107	-	-	-	-	-	-	27	134	134	-	-	-	-	-	-	-	-	-	-
2a.4.2	Insurance	-	-	-	-	-	-	690	69	759	759	-	-	-	-	-	-	-	-	-	-
2a.4.3	Property taxes	-	-	-	-	-	-	4,548	455			-	-	-	-	-	-	-	-	-	-
2a.4.4	Health physics supplies	-	2,103		-	-	-	-	526 535	2,629	2,629 4.100	-	-	-	-	-	-	-	-	-	-
2a.4.5 2a.4.6	Heavy equipment rental Disposal of DAW generated	-	3,565	86	35	-	358	-	103	4,100 582	4,100 582	-	-	-	4,345	-	-	-	86,891	142	-
2a.4.7	Plant energy budget	-	-	-	-	-	-	2.194	329	2,523	2.523	-	_	-	4,545	-	-	_		142	-
2a.4.8	NRC Fees	_	-	_	-	-	-	526	53	578		-	_	-	-	-	-	_	_	-	-
2a.4.9	Emergency Planning Fees	-	-	-	-	-	-	2,647	265	2,912		2,912	-	-	-	-	-	-	-	-	-
2a.4.10	Fixed Overhead	-	-	-	-	-	-	1,695	254	1,949	1,949	-	-	-	-	-	-	-	-	-	-
2a.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	602	90	692	-	692		-	-	-	-	-	-	-	-
2a.4.12	ISFSI Operating Costs Railroad Track Maintenance	-	-	-	-	-	-	80 318	12 48	92 366	366	92	-	-	-	-	-	-	-	-	-
2a.4.13 2a.4.14	Remedial Actions Surveys	-	-	-	-	-	-	1.596	48 239	1,835	1,835	-	-	-	-	-	-	-	-	-	-
2a.4.14 2a.4.15	Security Staff Cost		-	-	-	-	-	10.900	1,635	12,534	12.534	-	-	-	-	-	-	-	-	-	160,018
2a.4.16	DOC Staff Cost	_	-	_	-	-	-	20,663	3,099	23,763	23,763	-	_	-	-	-	-	_	_	-	225,210
2a.4.17	Utility Staff Cost	_	-	-	-	-	-	27,056	4,058			-	-	-	-	-	-	_	_	-	419,049
2a.4	Subtotal Period 2a Period-Dependent Costs	107	5,668	86	35	-	358	73,514	11,797	91,565	87,870	3,696	-	-	4,345	-	-	-	86,891	142	804,276
2a.0	TOTAL PERIOD 2a COST	770	31,895	19,616	4,270	6,005	21,522	92,716	41,215	218,009	199,687	15,358	2,964	38,625	38,584	237	673	-	4,399,073	212,595	810,649
PERIO	D 2b - Site Decontamination																				
Period 2	b Direct Decommissioning Activities																				
	of Plant Systems																				
2b.1.1.1		-	25	1	1	26	3	-	11	66	66	-	-	153	9	-	-	-	6,803	363	-
2b.1.1.2		-	69		6	116	13		39	246		-	-	692	39	-	-	-	30,595	1,013	-
2b.1.1.3 2b.1.1.4	Aux Bldg Special Ventilation Battery Rm Special Ventilation	·	14 2		1	12	2	-	6	34	34	=	2	70	6	-	-	-	3,234	197 24	=
2b.1.1.4 2b.1.1.5		. 0			0	- 0	3	_	2	10		-		3	9	-	-	-	700	50	-
2b.1.1.6		749			57	394	677	_	853	3,736		-	_	2,356	1,977	-	-	_	223,753	23,197	-
2b.1.1.7		-	1	-	-	-	-	-	0	1	-	-	1	-	-,0.1	-	-	-		20,137	-
2b.1.1.8	Component Cooling - RCA	-	647	25	88	2,007	-	-	479	3,246	3,246	-	-	11,996	-	-	-	-	487,169	8,583	-
2b.1.1.9		-	35		-	-	-	-	5	40		-	40	-	-	-	-	-	-	502	-
	O Containment Cooling - RCA	-	302		20	459	-	-	148			-	-	2,743	-	-	-	-	111,390	3,949	-
2b.1.1.11		-	36		1	24	-	-	13			-	-	141	-	-	-	-	5,742	494	-
	2 Containment Spray - RCA 3 Containment Ventilation	-	194 235		11 49	243	243	-	87 248	538		-	-	1,453	722	-	-	-	59,019	2,617	-
	Containment Ventilation Control/Relay/Cmptr Rm Vent	-	235 31	23 1	49	790 44	243 7	-	248 17	1,587 102	1,587 102	-	-	4,721 260	20	-	-	-	237,643 11,878	3,375 454	-
	5 Cooling Water	-	159		-	- 44	. '		24			-	183	260	- 40	-	-	-	11,010	2,344	-
	6 Cooling Water - RCA	-	476		62	1,412	-	-	342			-	-	8,442	-	-	-	-	342,822	6,311	-
	7 Cranes/Hoists/Elevators - RCA	-	3	0	1	17	-	-	4	25		-	-	103	-	-	-	-	4,184	48	-

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Table D-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(1110	ousanus c	of 2020 Dollars	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity		Decon	Removal	Packaging	Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Disposal of	f Plant Systems (continued)																				
	D3 Emergency Diesel	-	10	-	-	-	-	-	2	12	-	-	12	-	-	-	-	-	-	141	-
2b.1.1.19	D4 Emergency Diesel	-	10	-	-	-	-	-	2	12	-	-	12	-	-	-	-	-	-	141	-
2b.1.1.20	D5 Emergency Diesel	-	0	-	-	-	-	-	0	0	-	-	0	-	-	-	-	-	-	5	-
	Electrical - Clean	-	1,714		-	-	-	-	257	1,972	-	-	1,972	-	-	-	-	-	-	24,276	-
	Electrical - Contaminated	-	475	5	16	334	25	-	178	1,034	1,034	-	-	1,997	75	-	-	-	85,887	6,503	-
	Electrical - Decontaminated	-	2,955		138	3,138	-	-	1,234	7,503	7,503	-	-	18,753		-	-	-	761,569	38,423	-
	Filter Rm Ventilation	-	5	0	0	4	0	-	2	11	11	-	-	24	1	-	-	-	1,017	69	-
	Fire Protection & Detection Fire Protection & Detection - RCA	-	204 246	- 4	13	306	-	-	31 110	235 679	679	-	235	1,828	-	-	-	-	74,245	3,009 3,134	-
	Fuel Handling	-	74		2	34	17	-	28	156	156	-	-	200	49	-	-	-	11,273	1,101	-
2b.1.1.28			1			-	- 1		0	130	-	_	1	200	40			_	- 11,275	1,101	
	HVAC - Clean	_	151	_	_	_	_	_	23	174	_	_	174	_	_	_	_	_	_	2,373	_
	HVAC - Contaminated	-	1,231	29	87	1,798	136	-	627	3.908	3,908	_	-	10,745	405	_	-	_	462,103	16,579	_
2b.1.1.31		-	322		-	-	-	-	48	370	-	-	370	-	-	-	-	_	-	4,804	-
	Heating - RCA	-	337	4	14	319	-	-	135	809	809	-	-	1,907	-	-	-	-	77,458	4,086	-
2b.1.1.33	Hot Lab & Sample Rm Ventilation	-	20	0	1	18	1	-	8	48	48	-	-	107	4	-	-	-	4,622	285	-
	Incore Instrumentation	0	30	1	2	10	20	-	14	77	77	-	-	60	58	-	-	-	6,143	458	-
	Misc Drains & Vents	-	234	12	12	77	145	-	109	590	590	-	-	458	426	-	-	-	46,079	3,180	-
	Misc Lab & Service Areas Vent	-	129		8	62	84	-	65	356	356	-	-	370	244	-	-	-	30,899	1,713	-
	Miscellaneous Gas	-	72		- ,	-	-	-	11	83	-	-	83	-	-	-	-	-	-	1,073	-
	Miscellaneous Gas - RCA	-	134	1	4	100	-	-	49	289	289	-	-	600	-	-	-	-	24,378	1,636	-
	Radiation Monitoring	-	7	- ,	-	-	-	-	1	9	-	-	9	- 010	-	-	-	-	10.000	111	-
	Radiation Monitoring - RCA Reactor Coolant	163	65 236		2 16	53 38	249	-	25 213	145 937	145 937	-	-	316 229	730	-	-	-	12,826 56,440	782 5,517	-
	Reactor Hot Sampling	140	126		7	9	108	-	132	533	533	-	-	54	312	-	-	-	22,678	3,686	-
	Reactor Makeup	140	41		,	9	100	-	6	47	-	-	47	- 54	512	-	-	-	22,010	583	-
	Reactor Makeup - RCA	-	41	0	0	5		-	2	11	11	-	41	28	-	-	-	-	1,148	47	-
	Reactor Vessel	9	18	-	0	4	5	-	11	47	47	<u>-</u>	_	22	14	_	-		1,816	385	-
	Residual Heat Removal	348	393		86	477	1,102	-	641	3,132	3,132	_	-	2,853	3,244	_	-	_	324,232	7,112	-
	Safeguards Chilled Water		5	-	-		´-	-	1	6		-	6	-	- ,	-	-	-	- /-	75	-
2b.1.1.48	Safety Injection	-	874	42	72	1,117	395	-	500	3,000	3,000	-	-	6,676	1,161	-	-	-	345,708	12,284	-
2b.1.1.49	Sampling	-	52	3	2	6	32	-	23	119	119	-	-	37	93	-	-	-	7,628	714	-
	Service Bldg & New Cmptr Vent	-	0	-	-	-	-	-	0	0	-	-	0	-	-	-	-	-	-	6	-
	Shield Bldg Ventilation	-	120	13	25	339	163	-	127	787	787	-	-	2,028	484	-	-	-	113,139	1,743	-
	Station & Instrument Air	-	161		-		-	-	24	185	<u>.</u>	-	185		-	-	-	-		2,424	-
	Station & Instrument Air - RCA	-	299	3	12	272	-	-	118	704	704	-	-	1,625	-	-	-	-	65,986	3,638	-
	Turbine Bldg Traps & Drains	-	30		- ,	-	-	-	5	35	-	-	35	-	-	-	-	-		462	-
	Turbine Bldg Traps & Drains - RCA Turbine Bldg Ventilation	-	30 46		1	30	-	-	12 7	73 53	73	-	- 53	180	-	-	-	-	7,321	344 655	-
	Unit Coolers	-	23		-	-	-	-	3	26	-	-	26	-	-	-	-	-	-	332	-
	Unit Coolers - RCA		56	0	2	39	-		20	117	117	_	20	232	-			_	9,413	690	
	Waste Gas Disposal	553	479	43	45	410	464	-	585	2,581	2,581	-	-	2.453	1,358	_	-	_	187,339	14,308	-
	Waste Liquid Disposal	1,436	1,800	116	100	612	1,234	-	1,595	6,893	6,893	-	-	3,655	3,594	_	-	-	381,754	44,485	-
	Waste Solid Disposal	115	145		11	65	134	-	140	622	622	-	-	389	393	-	-	-	41,177	3,481	-
2b.1.1	Totals	3,515	16,542	596	980	15,220	5,264	-	9,399	51,516	48,072	-	3,444	90,963	15,429	-	-	-	4,689,210	270,390	-
2b.1.2	Scaffolding in support of decommissioning	-	3,775	27	13	235	37	-	993	5,081	5,081	-	÷	1,265	112	-	-	-	64,020	32,837	-
Decontami	ination of Site Buildings																				
	Reactor	1.215	2,808	240	1.236	373	13.625	_	4.981	24,479	24,479	_	_	2,230	83,434	-	-	_	3.633.771	50,962	-
	Auxiliary	1,292	422		117	177	648	-	960	3,639	3,639	-	-	1,060	6,118	-	-	-	332,495	23,821	-
	Backwash Waste Receiving Tank	-	28		17	-	97	-	34	179	179	-	-	-	929	-	-	-	43,896	301	-
	Drum Transfer & Truck Loading Enclosure	18	9	1	3	3	14	-	16	63	63	-	-	19	135	-	-	-	7,118	369	-
	LLRW Storage Enclosure	123	54		17	6	96	-	103	403	403	-	-	38	920	-	-	-	44,971	2,426	-
	Radwaste	55	24		8	7	43	-	47	185	185	-	-	42	412	-	-	-	21,136	1,083	-
	Resin Disposal	16	12		3	14		-	17	76	76	-	-	83	124	-	-	-	9,271	383	-
2b.1.3	Totals	2,720	3,357	271	1,400	581	14,537	-	6,158	29,024	29,024	-	-	3,471	92,071	-	-	-	4,092,658	79,343	-
	Prepare/submit License Termination Plan	-	-	-	-	-	-	225	34	259	259	-	-	-	-	-	-	-	-	-	1,751
2b.1.5	Receive NRC approval of termination plan									а											
2b.1	Subtotal Period 2b Activity Costs	6,235	23,674	895	2,393	16,035	19,839	225	16,584	85,879	82,435	-	3,444	95,700	107,611	-	-		8,845,887	382,570	1,751

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Table D-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(The	ousands o	f 2020 Dollar	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity		Decon		Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C		Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Period 2b	Additional Costs																				
	Operational Equipment	-	-	11	36	606	-	-	97	751	751	-	-	5,880	-	-	-	-	147,000	16	-
	Excavation of Underground Services	-	1,175	-	-	-	-	225	328	1,728	1,728	-	-	-	-	-	-	-	-	7,411	-
	Security Modifications Subtotal Period 2b Additional Costs	-	1,175	- 11	36	606	-	4,348 4,573	652 1,077	5,000 7,478	5,000 7,478	-	-	5,880	-	-	-	-	147,000	7,427	-
			,					,	,,,,,,	.,	.,			-,					.,		
	Collateral Costs Process decommissioning water waste	166	_	113	203	_	456	_	239	1,176	1,176	_	_	_	1,047	_	_	_	62,844	204	_
	Process decommissioning chemical flush waste	3		119	390	_	893	-	295	1,699	1,699	-	-	-	1,154		-	-	122,948	216	_
	Small tool allowance	-	446	-	-	-	-	-	67	513	513	-	-	-	-	-	-	-	-	-	-
	Spent Fuel Capital and Transfer	-	-	-	-	-	-	49,678	7,452		-	57,129	-	-	-	-	-	-	-	-	-
	Retention and Severance	-	-	-	-	-	-	2,839	426		3,265	-	-	-	-	-	-	-	-	-	-
	Prairie Island Indian Community Payments	-	-	-	-	-	-	1,348	-	1,348	-	1,348	-	-	-	-	-	-	-	-	-
2b.3	Subtotal Period 2b Collateral Costs	169	446	232	592	-	1,349	53,866	8,478	65,132	6,654	58,478	-	-	2,201	-	-	-	185,792	420	-
	Period-Dependent Costs																				
	Decon supplies	1,219		-	-	-	-	-	305	1,524	1,524	-	-	-	-	-	-	-	-	-	-
	Insurance	-	-	-	-	-	-	523	52		575	-	-	-	-	-	-	-	-	-	-
	Property taxes Health physics supplies	-	2,866	-	-	-	-	3,075	308 716		3,383 3,582	-	-	-	-	-	-	-	-	-	-
	Heavy equipment rental	-	2,774	-	-	-		-	416		3,190	-	-	-	-	-	-	-	-	-	-
	Disposal of DAW generated	-	2,774	103	42	-	429	_	124	698	698	-	-	-	5,209	-	-	-	104,172	170	-
	Plant energy budget	_	_	-		-	-	1,313	197	1,509	1,509	_	-	_	-,	_	_	_		-	-
	NRC Fees	-	-	-	-	-	-	398	40	438	438	-	-	-	-	-	-	-	-	-	-
2b.4.9	Emergency Planning Fees	-	-	-	-	-	-	2,006	201	2,207	-	2,207	-	-	-	-	-	-	-	-	-
	Fixed Overhead	-	-	-	-	-	-	1,284	193		1,477	-	-	-	-	-	-	-	-	-	-
	Spent Fuel Pool O&M	-	-	-	-	-	-	456	68	524	-	524	-	-	-	-	-	-	-	-	-
	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	229	34		264	-	-	-	-	-	-	-	-	-	-
	ISFSI Operating Costs	-	-	-	-	-	-	60	9	69	-	69	-	-	-	-	-	-	-	-	-
	Railroad Track Maintenance Remedial Actions Surveys	-	-	-	-	-	-	67 1,209	10 181	78 1,391	78 1,391	-	-	-	-	-	-	-	-	-	-
	Security Staff Cost	-	-	-	-	-	-	8,259	1,239	9,497	9,497	-	-	-	-	-	-	-	-	-	121,24
	DOC Staff Cost	-	-	-	-	-		15,117	2,268	17,385	17,385	-	-	-		-	-	-	-	-	163,90
	Utility Staff Cost	_	-	-	-	-	-	19,642	2,946		22,588	_	-	_	-	-	_	-	_	-	304,23
	Subtotal Period 2b Period-Dependent Costs	1,219	5,640	103	42	-	429	53,639	9,307	70,380	67,579	2,800	-	-	5,209	-	-	-	104,172	170	
2b.0	TOTAL PERIOD 2b COST	7,623	30,935	1,242	3,063	16,641	21,617	112,303	35,446	228,869	164,147	61,278	3,444	101,580	115,021	-	-	-	9,282,851	390,587	591,132
PERIOD 2	2d - Decontamination Following Wet Fuel Storage																				
Period 2d I	Direct Decommissioning Activities																				
	Remove spent fuel racks	347	35	86	41	-	703	-	373	1,585	1,585	-	-	-	2,092	-	-	-	132,919	576	-
Disposal of	f Plant Systems																				
	Electrical - Contaminated - Fuel Pool	-	203	2	7	145	11	-	77	445	445	-	-	864		-	-	-	37,167	2,783	-
	Electrical - Decontaminated - Fuel Pool	-	1,269	17	59	1,350	-	-	530	3,225	3,225	-	-	8,069		-	-	-	327,668	16,495	-
	Fire Protection & Detection - RCA Fuel P	-	37	1	2	48	-	-	17		105	-	-	286		-	-	-	11,622	476	
	HVAC - Contaminated - Fuel Pool	-	553	13	39	808	61	-	282		1,756	-	-	4,828		-	-	-	207,612	7,448	-
	Safeguards Chilled Water - RCA	-	5	0	0	4		-	2		11	-	-	26		-	-	-	1,045	51	-
	Spent Fuel Pool Cooling	32		3	2	6	37	-	36		152	-	-	39			-	-	8,481	882	
	Spent Fuel Pool Normal Ventilation Totals	32	27 2,130	1 36	2 112	44 2,405	4 113	-	15 958	93 5,786	93 5,786	-	-	265 14,376			-	-	11,505 605,100	394 28,530	-
			,			,														,	
	ination of Site Buildings	1.000	1 100	10	45	10.1	105		010	0.541	0.741			0.415	1.050				100 055	00.404	
	Fuel Handling of Aux Building Totals	1,029 1,029		13 13	45 45	404 404	195 195	-	916 916		3,741 3,741	-	-	2,417 2,417			-	-	177,755 177,755	30,404 30,404	-
		,										•					-	-			
2d.1.4	Scaffolding in support of decommissioning	-	755	5	3	47	7	-	199	1,016	1,016	-	-	253	22	-	-	-	12,804	6,567	-
2d.1	Subtotal Period 2d Activity Costs	1,408	4,058	141	202	2,857	1,018	-	2,445	12,128	12,128	-	-	17,046	4,099	-	-	-	928,579	66,078	-
	Additional Costs							1.005	011	1.040	1.040										0.04
	License Termination Survey Planning	-	-	-	-	-	-	1,037	311	1,348	1,348	-	-	-	-	-	-	-	-	-	6,240
2d.2	Subtotal Period 2d Additional Costs	-	-	-	-	-	-	1,037	311	1,348	1,348	-	-	-	-	-	-	-	-	-	6,240

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Table D-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

Part								(The	ousanas o	of 2020 Dollar	s)											
Part							Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Rurial	Volumes		Rurial/		Utility and
Second Content	Activity		Decon	Removal	Packaging	Transport			Other	Total	Total					Class A			GTCC		Craft	
March   Marc	Index	Activity Description	Cost	Cost			Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
March   Marc	Dowind 9	d Callataral Casta																				
1			45	-	31	56	-	126	-	65	323	323	_	-	_	288	_	_	_	17.293	56	_
Section   Sect							-		-				=	-	-		-	-	_			-
Second Second Memory Improved Second Memory Improved Memory Mem			-	83	-	-	-	-	-				-	-	-	-	-	-	-	-	-	-
Second   Process   Proce			-	-	130	67	1,112	178	-	234		1,722	-	-	6,000	529	-	-	-	303,608	147	-
Part				-	-	-										-	-	-	-	-		-
Act   Act	2d.3	Subtotal Period 2d Collateral Costs	45	83	162	128	1,112	314	975	316	3,135	2,160	975	-	6,000	831	-	-	-	322,324	206	-
Second																						
Part			236		-	-	-	-					-	-	-	-	-	-	-	-	-	-
Math plays a coupling			-		-	-	-	-					-	-	-	-	-	-	-	-	-	-
May representation   1807   1			-		-	-	-	-	,				-	-	-	-	-	-		-	-	-
Mayor   Mayo			-		-	-	-	-					-	-	-	-	-	-		-	-	-
Mathematic State   1			-	-	40	16	-	165	-		268	268	-	-	-	2,002	-	-	_	40,031	65	-
Section			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	-
Mail			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	-
			-	-	-	-	-	-					64	-	-	-	-	-	-	-	-	-
A 1   A 1			-	-	-	-	-	-					-	-	-	-	-	-		-	-	-
Act   A continue			_	-	-	-	-	-					50	-	-	-	-	-		-	-	-
Act   1			-	-	-	-	-	-		7				-	-	-	-	-	_	-	-	-
Part			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	-
1			-	-	-	-	-	-					1,955	-	-	-	-	-	-	-		
Second   Period   P			-	-	-	-	-							-	-	-	-	-	-	-		
Proof of Transfer Control of Transfer Contro			996	9 901	- 10	10	-							-	-	9.009	-	-	-	40.021		
Prior   Prio	2u.4	Subtotal Teriod 2d Teriod-Dependent Costs	230	2,801	40	10	-	100	20,754	4,550	33,321	30,790	2,020	-	-	2,002	-	-	-	40,031	05	201,377
Principal   Description   Principal   Pr	2d.0	TOTAL PERIOD 2d COST	1,689	6,941	343	346	3,969	1,496	27,746	7,403	49,932	46,432	3,501	-	23,046	6,931	-	-	-	1,290,933	66,348	287,617
Part   State   Part	PERIO	O 2f - License Termination																				
Part   State   Part	Period 2	f Direct Decommissioning Activities																				
Second   S			-	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-
Period   Additional Costs																						
Section   Sect	2f.1	Subtotal Period 2f Activity Costs	-	-	-	-	-	•	166	50	216	216	-	-	-	-	-	-	-	-	-	-
Period 2f Collateral Costs	Period 2	f Additional Costs																				
Period 27 Collateral Costs		License Termination Survey	-	-	-	-	-	-					-	-	-	-	-	-	-	-		
1	2f.2	Subtotal Period 2f Additional Costs	-	-	-	-	-	-	7,041	2,112	9,154	9,154	-	-	-	-	-	-	-	-	100,895	3,120
Paris   Island Indian Community Payments   1	Period 2	f Collateral Costs																				
Substact   Period			-	-	-	-	-	-		190		1,454	-	-	-	-	-	-	-	-	-	-
Period 2F Period-Dependent Costs			-	-	-	-	-	-						-	-	-	-	-	-	-		
1	2f.3	Subtotal Period 2f Collateral Costs	-	-	-	-	-	-	2,198	190	2,388	1,454	934	-	-	-	-	-	-	-	-	-
Property taxes																						
Health physics supplies   710			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	-
2f.4.4       Disposal of DAW generated       7       3       28       -       8       45       45       -       334       6,685       11       -         2f.4.5       Plant energy budget       -       -       243       36       279       279       -			-		-	-	-	-					-	-	-	-	-	-	-	-	-	-
2f.4.5       Plant energy budget       2f.4.5       Plant energy budget       2f.4.7       2f.9       2f.9 <th< td=""><td></td><td></td><td>-</td><td>710</td><td></td><td>-</td><td>-</td><td>- 00</td><td>-</td><td></td><td></td><td></td><td>-</td><td>-</td><td>-</td><td>994</td><td>-</td><td>-</td><td>-</td><td>0.005</td><td>- 11</td><td>-</td></th<>			-	710		-	-	- 00	-				-	-	-	994	-	-	-	0.005	- 11	-
2f.46       NRC Fees       . <t< td=""><td></td><td></td><td>-</td><td>-</td><td>,</td><td>3</td><td>-</td><td>28</td><td>243</td><td></td><td></td><td></td><td>-</td><td>-</td><td>-</td><td>334</td><td>-</td><td>-</td><td></td><td>6,680</td><td>- 11</td><td>-</td></t<>			-	-	,	3	-	28	243				-	-	-	334	-	-		6,680	- 11	-
2f.4.7       Emergency Planning Fees       -       55       6       61       -       61       -			_	-	-	-	-	-					_	_	_	_		_	_	-	-	-
2f.4.8 Fixed Overhead			-	-	-	-	-	-					61	-	-	-	-	-	-	-	-	-
2f.4.10 Railroad Track Maintenance	2f.4.8	Fixed Overhead	-	-	-	-	-	-	890		1,023	1,023	-	-	-	-	-	-	-	-	-	=
2f.4.11 Security Staff Cost			-	-	-	-	-	-		· ·			48	-	-	-	-	-	-	-	-	-
2f.4.12 DOC Staff Cost			-	-	-	-	-	-					1.050	-	-	-	-	-	-	-	-	
2f.4.13 Utility Staff Cost			-	-	-	-	-	-						-	-	-	-	-	-	-		
2f.4 Subtotal Period Dependent Costs - 710 7 3 - 28 17,461 2,682 20,890 18,470 2,420 - 334 6,685 11 186,687 2f.0 TOTAL PERIOD 2f COST - 710 7 3 - 28 26,867 5,034 32,648 29,294 3,354 334 6,685 100,906 189,807			-	-	-	-	-	-						-	-		-	-	-	-		
			-			3	-							-	-	334	-	-	-			
PERIOD 2 TOTALS 10,081 70,482 21,208 7,682 26,615 44,663 259,631 89,097 529,458 439,560 83,490 6,408 163,252 160,871 237 673 - 14,979,540 770,436 1,879,206	2f.0	TOTAL PERIOD 2f COST	-	710	7	3	-	28	26,867	5,034	32,648	29,294	3,354	-	-	334	-	-	-	6,685	100,906	189,807
	PERIO	O 2 TOTALS	10,081	70,482	21,208	7,682	26,615	44,663	259,631	89,097	529,458	439,560	83,490	6,408	163,252	160,871	237	673	-	14,979,540	770,436	1,879,206

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Table D-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(Th	ousands o	of 2020 Dollars	s)											
						Off-Site	LLRW				NRC	Court Ford	G!4	D		D	Volumes		D 1 /		TI(11)
Activity		Decon	Removal	Packaging	Transport		Disposal	Other	Total	Total	Lic. Term.	Spent Fuel Management	Site Restoration	Processed Volume	Class A	Class B		GTCC	Burial / Processed	Craft	Utility and Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet			Cu. Feet			Manhours	Manhours
PERIOD 3b - Site	e Restoration																				
Period 3b Direct D	Decommissioning Activities																				
Demolition of Rem	naining Site Buildings																				
3b.1.1.1 Reactor		-	4,645	-	-	-	-	-	697	5,342	-	-	5,342	-	-	-	-	-	-	44,679	-
3b.1.1.2 Auxilian		-	1,993	-	-	-	-	-	299	2,291	-	-	2,291	-	-	-	-	-	-	11,902	-
	sate Storage Tank Foundation	-	7		-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	33	-
	action Warehouse & Fab Shop	-	130		-	-	-	-	19	149	-	-	149	-	-	-	-	-	-	1,405	-
	Emergency Generator	-	14		-	-	-	-	2	16	-	-	16	-	-	-	-	-	-	84	-
	Fransfer & Truck Loading Enclosure	-	20		-	-	-	-	3	24 7	-	-	24	-	-	-	-	-	-	221	-
	en House	-	6 128		-	-	-	-	1 19	147	-	-	7 147	-	-	-	-	-	-	47 853	-
	Storage Enclosure cructures 2017	-	2,617		-	-	-	-	393	3,009	-	-	3,009	-	-	-	-	-	-	22,582	-
3b.1.1.10 Radwas			176						26	202	_	_	202			_		_		1,400	
3b.1.1.11 Resin D		_	14		-	-	_	_	2	16	-	_	16	-	-	_	-	_	-	120	-
	res below 3' below grade	_	1,785		-	-	_	_	268	2,052	_	_	2,052	_	-	_	_	_	_	9,238	-
	c Acid Tank Enclosure	-	3		-	-	_	_	0	4	-	-	4	-	-	-	_	-	-	35	-
3b.1.1.14 Turbine	е	-	2,140	-	-	-	-	-	321	2,461	-	-	2,461	-	-	-	-	-	-	21,997	-
3b.1.1.15 Turbine	e Pedestal	-	365	-	-	-	-	-	55	420	-	-	420	-	-	-	-	-	-	1,857	-
3b.1.1.16 Wareho	ouse #2	-	24	-	-	-	-	-	4	27	-	-	27	-	-	-	-	-	-	213	-
	Neutralizing Tank House	-	7		-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	56	-
3b.1.1.18 Waste 0		-	9		-	-	-	-	1	10	-	-	10	-	-	-	-	-	-	70	-
3b.1.1.19 Water T		-	324		-	-	-	-	49	373	-	-	373	-	-	-	-	-	-	2,690	-
	andling of Aux Building	-	1,095		-	-	-	-	164	1,259	-	-	1,259	-	-	-	-	-	-	8,240	-
3b.1.1 Totals		-	15,501		-	-	-	-	2,325	17,826	-	-	17,826	-	-	-	-	-	-	127,723	-
Site Closeout Activ																					
3b.1.2 Remove		-	1,330		-	-	-	-	200	1,530	-	-	1,530	-	-	-	-	-	-	6,495	-
	& landscape site	-	448	-	-	-	-	-	67	515	-	-	515	-	-	-	-	-	-	921	-
	eport to NRC	-	-	-	-	-	-	86	13	99	99		-	-	-	-	-	-	-	-	667
3b.1 Subtota	al Period 3b Activity Costs	-	17,279	-	-	-	-	86	2,605	19,969	99	ē	19,871	-	-	-	-	-	-	135,138	667
Period 3b Addition																					
	Concrete Disposal	-	4,912		-	-	-	10	738	5,660	-	-	5,660	-	-	-	-	-	-	18,372	-
	Structure Cofferdam	-	442	-	-	-	-		66	508	-	-	508	-	-	-	-	-	-	3,552	-
	action Debris	-	-	-	-	-	-	2,150	323	2,473	-	-	2,473	-	-	-	-	-	-		-
3b.2.4 Backfill		-	9,257		-	-	-	- 0.100	1,388	10,645	-	-	10,645	-	-	-	-	-	-	9,327	-
3b.2 Subtota	al Period 3b Additional Costs	-	14,610	-	-	-	-	2,160	2,516	19,286	-	-	19,286	-	-	-	-	-	-	31,251	-
Period 3b Collatera																					
	ool allowance	-	212		-	-	-		32	244	-	- 0.040	244	-	-	-	-	-	-	-	-
	Island Indian Community Payments al Period 3b Collateral Costs	-	-	-	-	-	-	2,649	32	2,649	-	2,649	-	-	-	-	-	-	-	-	-
3b.3 Subtota	al Period 36 Collateral Costs	-	212	-	-	-	-	2,649	32	2,892	-	2,649	244	-	-	-	-	-	-	-	-
Period 3b Period-D	Dependent Costs																				
3b.4.1 Insuran		-	-	-	-	-	-	513	51	565	565	-	-	-	-	-	-	-	-	-	-
3b.4.2 Propert		-	-	-	-	-	-	4,167	417	4,583	-	4,583	-	-	-	-	-	-	-	-	-
	equipment rental	-	7,144	-	-	-	-		1,072	8,215	-	-	8,215	-	-	-	-	-	-	-	-
	nergy budget	-	-	-	-	-	-	344	52	395	-	395	-	-	-	-	-	-	-	-	-
	SFSI Fees	-	-	-	-	-	-	218	22	239	-	239	-	-	-	-	-	-	-	-	-
	ency Planning Fees Overhead	-	-	-	-	-	-	157 1,024	16 154	173 1,178	397	173 781	-	-	-	-	-	-	-	-	-
	Overnead Operating Costs	-	-	-	-	-	-	1,024	18	1,178	397	136	-	-	-	-	-	-	-	-	-
	d Track Maintenance	-	-	-	-	-	-	361	54	416	153		-	-	-	-	-	-	-	-	-
	y Staff Cost	-	-	-	-	-	-	4,616	692	5,308	-	5,308	-	_	-		-	-	-	-	57,340
3b.4.11 DOC St		_	_	-	_	_	-	10,921	1,638	12,559	_	-	12.559	_	_		_	_	_	-	116,885
	Staff Cost	-	-	-	-	-	-	5,004	751	5,755	-	1,237	4,517	-	-	-	-	-	-	-	74,431
	al Period 3b Period-Dependent Costs	-	7,144	-	-	-	-	27,444	4,935	39,523	1,114		25,292	-	-	-	-	-	-	-	248,656
3b.0 TOTAL	PERIOD 3b COST		39,245			-	_	32,338	10,087	81,671	1,213	15,766	64,692							166,388	249,323
50.0 101AL	1 1 111 OD 30 OO31	-	59,245	-	-	-	-	54,558	10,087	01,011	1,413	19,766	64,692	-	-	-	-	-	-	100,008	449,543

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Table D-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(Th	ousands o	of 2020 Dollar	s)											
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A	Class B	Volumes Class C Cu. Feet	GTCC Cu. Foot	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
		Cost	Cost	Costs	Costs	Costs	Costs	Costs	contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	cu. Feet	Cu. Peet	Wt., Ebs.	Mannours	Mannours
	Fuel Storage Operations/Shipping																				
	tt Decommissioning Activities																				
Period 3c Collat 3c.3.1 Sper	teral Costs nt Fuel Capital and Transfer	_	_	_	_	_	_	18,191	2,729	20,919	_	20,919	_	_	_	_	_	_	_	_	_
3c.3.2 Prair	rie Island Indian Community Payments	-	-	-	-	-	-	44,363	-	44,363	-	44,363	-	-	-	-	-	-	-	-	-
3c.3 Subt	total Period 3c Collateral Costs	-	=	-	=	-	-	62,554	2,729	65,283	-	65,283	-	-	-	-	-	-	-	-	-
	d-Dependent Costs											0.470									
	rrance perty taxes	-	-	-	-	-	-	8,599 49,245	860 4,924	9,459 54,169	-	9,459 54,169		-	-	-	-	-	-	-	-
3c.4.4 NRC	C ISFSI Fees	-	-	-	-	-	-	5,140	514	5,653	-	5,653	-	-	-	-	-	-	-	-	-
	ergency Planning Fees ed Overhead	-	-	-	-	-	-	2,633 5,787	263 868	2,896 6,655	-	2,896 6,655		-	-	-	-	-	-	-	-
3c.4.7 ISFS	SI Operating Costs	-	-	-	-	-	-	1,988	298	2,286	-	2,286	-	-	-	-		-	-	-	-
	road Track Maintenance urity Staff Cost	-	-	-	-	-	-	2,220 77,306	333 11,596	2,554 88,902	-	2,554 88,902		-	-	-	-	-	-	-	960,32
	ity Staff Cost	-	-	-	-	-	-	18,035	2,705	20,740	-	20,740		-	-	-		-	-	-	249,31
3c.4 Subt	total Period 3c Period-Dependent Costs	-	-	-	-	-	-	170,952	22,362	193,314	-	193,314	-	-	-	-	-	-	-	-	1,209,64
3c.0 TOT	TAL PERIOD 3c COST	-	-	-	-	-	-	233,506	25,091	258,597	-	258,597	-	-	-	-	-	-	-	-	1,209,64
PERIOD 3d - 0	GTCC shipping																				
Period 3d Direc	et Decommissioning Activities																				
	Supply System Removal																				
	sel & Internals GTCC Disposal	-	-	1,444	-	-	8,680	-	1,663	11,787	11,787	-	-	-	-	-	-	1,773	344,823	-	-
3d.1.1 Tota 3d.1 Subt	total Period 3d Activity Costs	-	-	1,444 1,444	-	-	8,680 8,680		1,663 1,663	11,787 11,787	11,787 11,787	-	-	-	-	-	-	1,773 1,773	344,823 344,823	-	-
Period 3d Colla	iteral Costs																				
	nt Fuel Capital and Transfer rie Island Indian Community Payments	-	-	-	-	-	-	28 48	4	32 48	-	32 48		-	-	-	-	-	-		-
	total Period 3d Collateral Costs	-	-	-	-	-	-	46 76				80		-	-	-	-	-	-	-	-
Period 3d Perio	od-Dependent Costs																				
	urance	-	-	-	-	-	-	9 53	1	10 58		-	-	-	-	-	-	-	-	-	-
	perty taxes C ISFSI Fees	-		-		-	-	4	5 0		- 90	4	-			-		-			-
3d.4.5 Eme	ergency Planning Fees	-	-	-	-	-	-	3	0			3	-	-	-	-	-	-	-	-	-
	ed Overhead road Track Maintenance	-	-	-	-	-	-	6 2	1 0	7 3	7 3	- -	-	-	-	-	-	-	-	-	-
3d.4.8 Secu	urity Staff Cost	-	-	-	-	-	-	83	13	96	96	-	-	-	-	-	-	-	-	-	1,03
	ity Staff Cost total Period 3d Period-Dependent Costs	-	-	-	-	-	-	19 181	3 24	22 204	22 197	7	-	-	-	-	-	-	-	-	26 1,30
3d.0 TOT	CAL PERIOD 3d COST	-	-	1,444	-	-	8,680	256	1,691	12,071	11,984	87	-	-	-	-	-	1,773	344,823	-	1,30
PERIOD 3e - I	ISFSI Decontamination																				
Period 3e Direc	et Decommissioning Activities																				
Period 3e Addit	tional Costs																				
	nse Termination ISFSI total Period 3e Additional Costs	-	24 24		435 435		2,532 2,532	839 839	978 978	4,890 4,890	4,890 4,890	-	-	-	9,355 9,355		-	-	1,123,457 1,123,457	3,762 3,762	
	d-Dependent Costs						,. ,-			,	,				-,				, -,	-,	,
3e.4.1 Insu	urance	-	-	-	-	-	-	93	23	116		-	-	-	-	-	-	-	-	-	-
	perty taxes nt energy budget	-	-	-	-	-	-	56 11	14 3			-	-	-	-	-	-	-	-	-	-
3e.4.4 Fixe	ed Overhead	-	-	-	-	-	-	54	14	68	68	-	-	-	-	-	-	-	-	-	-
	road Track Maintenance arity Staff Cost	-	-	-	-	-	-	21 174	5 43		26 217	-	-	-	-	-	-	-	-	-	2,50
	irity Staff Cost	-	-	-	-	-	-	174	43 32		161	-	-	-	-	-	-	-	-	-	1,89
3e.4 Subt	total Period 3e Period-Dependent Costs	-	-	-	-	-	-	536	134	670	670	-	-	-	-	-	_	-	-	-	4,39

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

#### Table D-2 Prairie Island DECON Unit 2 DECON Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage (Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial/		Utility and
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
3e.0	TOTAL PERIOD 3e COST	-	24	81	435	-	2,532	1,375	1,112	5,560	5,560	-	-	-	9,355	-	-	-	1,123,457	3,762	5,460
PERIO	D 3f - ISFSI Site Restoration																				
Period ?	3f Direct Decommissioning Activities																				
Period 3	3f Additional Costs Demolition and Site Restoration of ISFSI	_	515	_	_	_	_	68	87	670	_	_	670	_	_	-	<u>.</u>	_	_	2,219	80
3f.2	Subtotal Period 3f Additional Costs	-	515	-	-	-	-	68	87	670	-	-	670	-	-	-	-	-	-	2,219	80
	3f Collateral Costs Small tool allowance		0																		
3f.3.1 3f.3	Small tool allowance Subtotal Period 3f Collateral Costs	-	3	-	-	-	-	-	0	4	-	-	4	-	-	-	-	-	-	-	-
	3f Period-Dependent Costs																				
3f.4.2	Property taxes	-	59	-	-	-	-	28	3	31	-	-	31 68	-	-	-	-	-	-	-	-
3f.4.3 3f.4.4	Heavy equipment rental Plant energy budget	-	99	-	-	-	-	- 6	9	68	-	-	68	-	-	-	-	-	-	-	-
3f.4.5	Fixed Overhead	-	-	_	-	-	-	28	4	32	_	-	32	-	_	-	_	_	_	-	-
3f.4.6	Railroad Track Maintenance	-	-	-	-	-	-	11	2	12	-	-	12	-	-	-	-	-	-	-	-
3f.4.7	Security Staff Cost	-	-	-	-	-	-	89	13	102	-	-	102	-	-	-	-	-	-	-	1,281
3f.4.8	Utility Staff Cost	-		-	-	-	-	55	8	63	-	-	63	-	-	-	-	-	-	-	795
3f.4	Subtotal Period 3f Period-Dependent Costs	-	59	-	-	-	-	216	40	315	-	-	315	-	-	-	-	-	-	-	2,076
3f.0	TOTAL PERIOD 3f COST	-	577	-	-	-	-	284	128	989	-	-	989	-	-	-	-	-	-	2,219	2,156
PERIO	D 3 TOTALS	-	39,847	1,525	435	-	11,212	267,760	38,109	358,887	18,757	274,449	65,681	-	9,355	-	-	1,773	1,468,280	172,370	1,467,888
TOTAL	COST TO DECOMMISSION	13,876	116,246	23,184	8,596	26,793	61,273	633,922	146,053	1,029,941	590,962	366,208	72,770	169,384	184,110	826	673	1,773	17,056,350	976,284	4,146,322

TOTAL COST TO DECOMMISSION WITH 16.52% CONTINGENCY:	\$1,029,941	thousands of 2020 dollars
TOTAL NRC LICENSE TERMINATION COST IS 57.38% OR:	\$590,962	thousands of 2020 dollars
SPENT FUEL MANAGEMENT COST IS 35.56% OR:	\$366,208	thousands of 2020 dollars
NON-NUCLEAR DEMOLITION COST IS 7.07% OR:	\$72,770	thousands of 2020 dollars
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	185,608	Cubic Feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	1,773	Cubic Feet
TOTAL SCRAP METAL REMOVED:	42,328	Tons
TOTAL CRAFT LABOR REQUIREMENTS:	976,284	Man-hours

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#### APPENDIX E

#### **DETAILED COST ANALYSIS**

#### **SCENARIO 3: DECON with 100 Year DFS**

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Prairie Island Nuclear Generating Plant, Unit 1	E-2
Prairie Island Nuclear Generating Plant, Unit 2	E-11

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#### Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

# Table E-1 Prairie Island DECON Unit 1 DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage (Thousands of 2020 Dollars)

							(T	housands	of 2020 Dollar	·s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
PERIOI	) 1a - Shutdown through Transition																				
Period 1	a Direct Decommissioning Activities																				
1a.1.1	Prepare preliminary decommissioning cost	-	-	-	-	-	-	167	25	192	192	-	-	-	-	-	-	-	-	-	1,300
1a.1.2 1a.1.3	Notification of Cessation of Operations Remove fuel & source material									a n/a											
1a.1.4	Notification of Permanent Defueling									a											
1a.1.5 1a.1.6	Deactivate plant systems & process waste Prepare and submit PSDAR							257	39	a 296	296										2,000
1a.1.6 1a.1.7	Review plant dwgs & specs.	-	-	-	-	-	-	591	89	680	680	-	-	-	-	-	-	-	-	-	4,600
1a.1.8	Perform detailed rad survey									a											
1a.1.9 1a.1.10	Estimate by-product inventory End product description	-	-	-	-	-		129 129	19 19	148 148	148 148	-	-		-	-		-		-	1,000 1,000
1a.1.11	Detailed by-product inventory	-	-	-	-	-	-	167	25	192	192	-	-	-	-	-	-	-	-	-	1,300
1a.1.12 1a.1.13	Define major work sequence Perform SER and EA	-	-	-	-	-	-	964 398	145 60	1,108 458	1,108 458	-	-	-	-	-	-	-	-	-	7,500 3,100
1a.1.13	Prepare/submit Defueled Technical Specifications	-	-	-	-	-	-	964	145	1,108	1,108	-	-		-			-		-	7,500
1a.1.15	Perform Site-Specific Cost Study	-	-	-	-	-	-	643	96	739	739	-	-	-	-	-	-	-	-	-	5,000
1a.1.16	Prepare/submit Irradiated Fuel Management Plan	-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	1,000
	Specifications Plant & temporary facilities	_	_	_		_	_	632	95	727	654	_	73	_	_	_	_		_	_	4,920
	Plant systems	-	-	-	-	-	-	536	80	616	554	-	62	-	-	-	-	-	-	-	4,167
	NSSS Decontamination Flush	-	-	-	-	-	-	64	10	74	74	-	-	-	-	-	-	-	-	-	500
	Reactor internals Reactor vessel	-		-	-	-	-	912 835	137 125	1,049 961	1,049 961	-	-		-		-	-	-	-	7,100 6,500
	Biological shield	-	-	-	-	-	-	64	10	74	74	-	-	-	-	-	-	-	-	-	500
	Steam generators	-	-	=	-	÷	-	401	60	461	461	÷	-	-	-	-	-	-	-	-	3,120
	Reinforced concrete  Main Turbine	-	-	-	-	-	-	206 51	31 8	236 59	118	-	118 59		-	-		-		-	1,600 400
1a.1.17.1	0 Main Condensers	-	-	-	-	-	-	51	8	59	-	-	59	-	-	-	-	-	-	-	400
	1 Plant structures & buildings	-	-	-	-	-	-	401 591	60 89	461 680	231 680	-	231	-	-	-	-	-	-	-	3,120 4,600
	2 Waste management 3 Facility & site closeout	-		-	-	-	-	116	17	133	67	- -	67			-	-		-	-	900
1a.1.17		-	-	-	-	-	-	4,861	729	5,591	4,923	-	668	-	-	-	-	-	-	-	37,827
	g & Site Preparations																				
1a.1.18 1a.1.19	Prepare dismantling sequence Plant prep. & temp. svces	-	-	-	-	-	-	308 3,500	46 525	355 4,025	355 $4,025$	-	-	-	-	-	-	-	-	-	2,400
1a.1.10	Design water clean-up system	-		-	-	-	-	180	27	207	207	-	-		-	-	-	-	-	-	1,400
1a.1.21	Rigging/Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,400	360	2,760	2,760	-	-	-	-	-	-	-	-	-	-
1a.1.22 1a.1	Procure casks/liners & containers Subtotal Period 1a Activity Costs	-	-	-		-	-	158 15,945	24 2,392	182 18,336	182 17,669	-	668	-	-	-	-	-	-	-	1,230 78,157
Period 1	a Additional Costs																				
1a.2.1	Spent Fuel Pool Isolation	-	-	-	-	-	-	12,675	1,901	14,576	14,576	-	-	-	-	-	-	-	-	-	-
1a.2	Subtotal Period 1a Additional Costs	-	-	-	-	-	-	12,675	1,901	14,576	14,576	-	-	-	-	-	-	-	-	-	-
	a Collateral Costs							1 0 40		1 0 40		1 0 4 0									
1a.3.1 1a.3	Prairie Island Indian Community Payments Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	1,249 1,249	-	1,249 1,249	-	1,249 1,249		-	-	-	-	-	-	-	-
Period 1a	a Period-Dependent Costs																				
1a.4.1	Insurance	-	-	-	-	-	-	1,660	166	1,826 3,985	1,826 3,985	-	-	-	-	-	-	-	-	-	-
1a.4.2 1a.4.3	Property taxes Health physics supplies	-	614		-	-	-	3,623	362 153	3,985 767	3,985 767	-	-		-	-	-	-	-	-	-
1a.4.4	Heavy equipment rental	-	753		-	-	-	-	113	866	866	-	-	-	-	-	-	-	-	-	-
1a.4.5	Disposal of DAW generated	-	-	12	2 5	-	50	1,621	14	82 1,864	82 1,864	-	-	-	610	-	-	-	12,190	20	-
1a.4.6 1a.4.7	Plant energy budget NRC Fees	-	-	-		-	-	1,621	243 114	1,864	1,864	-	-	-	-	-		-		-	-
1a.4.8	Emergency Planning Fees	-	-	-		-	-	2,174	217	2,392	-	2,392	-	-	-	-	-	-	-	-	-
1a.4.9 1a.4.10	Fixed Overhead Spent Fuel Pool O&M	-	-	-	-	-	-	1,440 422	216 63	1,656 486	1,656	486	-	-	-	-	-	-	-		-
1a.4.10	ISFSI Operating Costs	-	-	-		-	-	56	8	64	-	64		-	-	-	-	-	-	-	-
1a.4.12	Railroad Track Maintenance	-	-	-	-	-	-	63	9	72	72	-	-	-	-	-	-	-	-	-	100 700
1a.4.13 1a.4.14	Security Staff Cost Utility Staff Cost	-	-	-		-	-	8,328 26,931	1,249 4,040	9,577 30,971	9,577 30,971	-	-	-	-	-	-	-	-	-	122,720 422,240
1a.4	Subtotal Period 1a Period-Dependent Costs	-	1,367	12	2 5	-	50		6,970	55,860	52,918	2,942	-	-	610	-	-	-	12,190		

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Table E-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(11	iousunus	oi 2020 Dollai	10,											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial/		Utility and
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
1a.0	TOTAL PERIOD 1a COST	-	1,367	15	2 5	-	50	77,325	11,263	90,022	85,163	4,191	668	-	610	-	-	-	12,190	20	623,117
PERIO	D 1b - Decommissioning Preparations																				
Period 1	b Direct Decommissioning Activities																				
Detailed	l Work Procedures																				
	Plant systems	=	-	-	-	-	-	608	91	700	630	-	70	-	-	-	-	-	-	-	4,733
1b.1.1.2	NSSS Decontamination Flush	=	-	-	-	-	-	129	19		148	-	-	-	-	-	-	-	-	-	1,000
	Reactor internals	=	-	-	-	-	-	321	48		369	-	-	-	-	-	-	-	-	-	2,500
	Remaining buildings CRD cooling assembly	-	-	-	-	-	-	174 129	26 19		50 148	-	150	-	-	-	-	-	-	-	1,350 1,000
1b.1.1.6			-	-	-	-	-	129	19		148	-	-	-	-	-	-		-	-	1,000
1b.1.1.7		=	-	-	-	-	-	129	19		148	-	-	-	-	-	-	-	-	-	1,000
1b.1.1.8		=	-	-	-	-	-	467	70		537	-	-	-	-	-	-	-	-	-	3,630
	Facility closeout	-	-	-	-	-	-	154	23		89	-	89	-	-	-	-	-	-	-	1,200
	0 Missile shields	-	-	-	-	-	-	58	9	67	67	-	-	-	-	-	-	-	-	-	450
	1 Biological shield 2 Steam generators	-	-	-	-	-	-	154 591	23 89		177 680	-	-	-	-	-	-	-	-	-	1,200 4,600
	3 Reinforced concrete	-	-	-	-	-	-	129	19		74	-	74	-		-	-	-	-	-	1,000
	4 Main Turbine	=	-	-	-	-	-	200	30		-	-	231	-	-	-	-	-	-	-	1,560
	5 Main Condensers	-	-	-	-	-	-	200	30		-	-	231	-	-	-	-	-	-	-	1,560
	6 Auxiliary building	=	-	-	-	-	-	351	53		363	-	40	-	-	-	-	-	-	-	2,730
1b.1.1.1' 1b.1.1	7 Reactor building Total	-	-	-	-	-	-	351 4,272	53 641		363 3,989	-	40 924	-	-	-	-	•	-	-	2,730 33,243
10.1.1	Total	-	-	-	-	-	-	4,212	641	4,915	5,969	-	924	-	-	-	-	-	-	-	55,245
1b.1.2	Decon primary loop	572		-	-	-	-		286		859	-		-	-	-	-	-	-	1,067	
1b.1	Subtotal Period 1b Activity Costs	572	-	-	-	-	-	4,272	927	5,772	4,848	-	924	-	-	-	-	-	-	1,067	33,243
	b Additional Costs																				
1b.2.1	Site Characterization	=	-	-		-	-	3,520	1,056		4,576	-	-		-	-	-	-		21,020	8,332
1b.2.2	Mixed/Hazardous Waste	-		355				-	76		702	-	-	6,132		-	-	-	351,977	2,348	-
1b.2.3 1b.2	Asbestos Abatement Subtotal Period 1b Additional Costs	- -	2,526 2,526				1,369 1,369		996 2,129		5,044 $10,321$	-	-	6,132	12,843 12,843		-	-	166,959 518,936	20,907 $44,275$	8,332
Period 1	b Collateral Costs																				
1b.3.1	Decon equipment	1,055		_	_	-	-	_	158	1,213	1,213	-	-	-	_	-	-	_	-	-	-
1b.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,264	190		1,454	-	-	-	-	-	-	-	-	-	-
1b.3.3	Process decommissioning water waste	25		16			66	-	35		172	-	-	-	152		-	-	9,127	30	-
1b.3.4	Process decommissioning chemical flush waste	2		6:	1 199	-	3,889	-	1,009		5,159	-	-	-	-	588	-	-	62,689	110	-
1b.3.5 1b.3.6	Small tool allowance Pipe cutting equipment	-	36 1,200		-	-	-	-	5 180	42 1,380	42 1,380	-	-	-	-	-	-	-	-	-	-
1b.3.7	Decon rig	2,104		-	-	-	-	-	316		2,419	-	-	-	-	-	-	-	-	-	-
1b.3.8	Spent Fuel Capital and Transfer	_,_,_	-	-	-	-	-	163	25		-,	188	-	-	-	-	-	-	-	-	-
1b.3.9	Retention and Severance	=	-	-	-	-	-	1,032	155		1,187	-	-	-	-	-	-	-	-	-	-
1b.3.10	Prairie Island Indian Community Payments	-				-	-	623		623		623	-	-	-	-	-	-		-	-
1b.3	Subtotal Period 1b Collateral Costs	3,185	1,236	7	7 228	-	3,955	3,082	2,072	13,836	13,025	811	-	-	152	588	-	-	71,815	140	-
	b Period-Dependent Costs																				
1b.4.1	Decon supplies	38		-	-	-	-		9	47	47	-	-	-	-	-	-	-	-	-	-
1b.4.2	Insurance	-	-	-	-	-	-	828	83		910	-	-	-	-	-	-	-	-	-	-
1b.4.3 1b.4.4	Property taxes Health physics supplies	- -	475	<del>-</del>	-	-		1,806	181 119		1,987 594	-	-	-	-	-	-	-	-	-	-
1b.4.4	Heavy equipment rental	-	375		-	-	-	_	56		432	-	-	-		-	-	-	-	-	-
1b.4.6	Disposal of DAW generated	-	-		7 3	-	29	-	8	48	48	-	-	-	356	-	-	-	7,122	12	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	1,617	243		1,859	-	-	-	-	-	-	-	-	-	-
1b.4.8	NRC Fees	-	-	-	-	-	-	323	32		355	-	-	-	-	-	-	-	-	-	-
1b.4.9 1b.4.10	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	1,084 718	108 108		826	1,193	-	-	-	-	-	-	-	-	-
1b.4.10 1b.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	211	32		826	242	-	-	-	-	-	-	-	-	-
1b.4.11	ISFSI Operating Costs	-	-	-	-	-	-	28	4		-	32	-	-	-	-	-	-	-	-	-
1b.4.13	Railroad Track Maintenance	-	-	-	-	-	-	31	5	36	36	-	-	-	-	-	-	-	-	-	-
1b.4.14	Security Staff Cost	-	-	-	-	-	-	4,153	623		4,775	-	-	-	-	-	-	-	-	-	61,192
1b.4.15		-	-	-	-	-	-	5,846	877		6,723	-	-	-	-	-	-	-	-	-	63,266
1b.4.16 1b.4	Utility Staff Cost Subtotal Period 1b Period-Dependent Costs	38	851	- ,	7 3	-	29	13,505 30,149	2,026 4,513		15,531 34,123	1,467	-	-	356	-	-	-	7,122	12	211,579 336,037
	-																				
1b.0	TOTAL PERIOD 1b COST	3,795	4,613	440	0 475	178	5,354	41,023	9,641	65,519	62,317	2,278	924	6,132	13,351	588	-	-	597,873	45,493	377,612

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Table E-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

						(11	lousanus	oi 2020 Dollai												
Activity	Decon		Packaging		Off-Site Processing	LLRW Disposal	Other	Total	Total	NRC Lic. Term.	Spent Fuel Management	Site Restoration	Processed Volume	Class A	Class B	Volumes Class C	GTCC	Burial / Processed	Craft	Utility and Contractor
Index Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet		Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
PERIOD 1 TOTALS	3,795	5,980	452	480	178	5,404	118,348	20,903	155,540	147,480	6,468	1,592	6,132	13,961	588	-	-	610,063	45,513	1,000,729
PERIOD 2a - Large Component Removal																				
Period 2a Direct Decommissioning Activities																				
Nuclear Steam Supply System Removal 2a.1.1.1 Reactor Coolant Piping	E 4	47	10	18		187		89	406	406				508				95 411	1,421	
2a.1.1.1 Reactor Coolant Fighing 2a.1.1.2 Pressurizer Relief Tank	54 24	21	6	12	-	125	-	51	238	238	-	-	-	338		-		35,411 23,594	630	-
2a.1.1.3 Reactor Coolant Pumps & Motors	57	68	110	93	-	463	-	186	977	977	_	_	-	2,332	_	_	_	295,800	2,049	100
2a.1.1.4 Pressurizer	-	77	503	97	-	776	-	278	1,732	1,732	-	-	-	2,196	-	-	-	185,015	1,666	938
2a.1.1.5 Steam Generators	-	3,307	2,269	1,770	2,409	4,001	-	2,681	16,437	16,437	-	-	18,672	11,316	-	-	-	1,689,435	11,613	2,875
2a.1.1.6 CRDMs/ICIs/Service Structure Removal	302	281	218	66	-	938	-	488	2,294	2,294	-	-	-	4,797	-	-	-	177,400	8,104	-
2a.1.1.7 Reactor Vessel Internals 2a.1.1.8 Reactor Vessel	82 94	4,861 6,046	13,621 2,028	929 728	-	9,015 2,975	307 307	11,878 6,804	40,693 18,982	40,693 18,982	-	-	-	501 8,073	125	673	-	164,987 576,524	25,123 25,123	1,163 1,163
2a.1.1.6 Reactor vesser 2a.1.1 Totals	613	14,709	18,764	3,714	2,409	18,480	614	22,455	81,759	81,759	-	-	18,672	30,062	125	673		3,148,166	75,729	6,240
Removal of Major Equipment																				
2a.1.2 Main Turbine/Generator	-	331	172	64	527	377	-	283	1,752	1,752	-	-	2,131	1,187	-	-	-	203,265	4,667	-
2a.1.3 Main Condensers	-	2,801	109	62	705	533	-	960	5,170	5,170	-	-	3,800	1,587	-	-	-	271,824	39,151	-
Cascading Costs from Clean Building Demolition 2a.1.4.1 Reactor		794						119	913	913									7,589	-
2a.1.4 Totals	-	794	-	-	-	-	-	119	913	913	-	-	-	-	-	-	-	-	7,589	-
Disposal of Plant Systems																				
2a.1.5.1 Air Removal	-	31	-	-	-	-	-	5	36	-	-	36	-	-	-	-	-	-	452	-
2a.1.5.2 Auxiliary Feedwater	-	46	-	-	-	-	-	7	53	-	-	53	-	-	-	-	-	-	670	-
2a.1.5.3 Auxiliary Feedwater - RCA 2a.1.5.4 Bleed Steam	=	47 90	0	2	36	-	-	17 14	102 104	102	-	104	215	-	-	-	-	8,722	601 1,335	-
2a.1.5.5 Caustic Addition - RCA	-	38	- 0	- 2	39	-	-	16	95	95	-	104	233	-	-	-	-	9,453	1,555	-
2a.1.5.6 Chemical Feed	-	20	-		-	-	-	3	23	-	_	23	-	_	_	-	_	-	304	-
2a.1.5.7 Chemical Feed - RCA	-	1	0	0	1	-	-	0	3	3	-	-	6	-	-	-	-	243	12	-
2a.1.5.8 Circulating Water	-	42	-	-	-	-	-	6	49	-	-	49	-	-	-	-	-	-	619	-
2a.1.5.9 Condensate	-	474	-	-	-	-	-	71	545	-	-	545	-	-	-	-	-	-	6,837	-
2a.1.5.10 Condensate Polishing 2a.1.5.11 Condensate Polishing - RCA	-	235 183	4	15	348	-	_	35 101	271 651	651	-	271	2,078	-	_	-		84,395	3,420 2,329	-
2a.1.5.12 Electro-hydraulic	-	9		-	-	_	-	1	10	-	_	10	2,010	-	_	_	_	-	127	_
2a.1.5.13 Feedwater	-	153	-	-	-	-	-	23	175	-	-	175	-	-	-	-	-	-	2,215	-
2a.1.5.14 Feedwater - RCA	-	195	7	24	537	-	-	133	895	895	-	-	3,208	-	-	-	-	130,294	2,651	-
2a.1.5.15 Gland Seal	-	34	-	-	-	-	-	5	39	-	-	39	-	-	-	-	-	-	505	-
2a.1.5.16 Heater Drain 2a.1.5.17 Internal Circ Water & CDSR	-	400 27	-	_	-	-	_	60 4	460 31	-	-	460 31	-	-	_	-		-	5,881 389	-
2a.1.5.18 Main Gen/Exciter/Transformer	-	0	-	-	-	_	-	0	0	_	_	0	-	-	_	_	_	-	5	_
2a.1.5.19 Main Steam	-	115	-	-	-	-	-	17	133	-	-	133	-		-	-	-	-	1,690	-
2a.1.5.20 Main Steam - RCA	-	366	10	37	844		-	225	1,482	1,482	-	-	5,044	-	-	-	-	204,825	4,956	-
2a.1.5.21 Steam Generator Blowdown	-	478 5	22	29	340	234	-	235	1,337	1,337	-	- 6	2,031	686	-	-	-	126,640	6,667	-
2a.1.5.22 Steam Generators 2a.1.5.23 Turbine & Moisture Separators	-	386	-	-	-	-	-	1 58	6 444	-	-	444	-		-	-	-	-	75 5,609	-
2a.1.5.24 Turbine & Moisture Separators  2a.1.5.24 Turbine Oil Purification	-	70	-	-	-	-	-	11	81	-	-	81	-	-	-	-		-	1,003	-
2a.1.5 Totals	-	3,445	44	108	2,144	234	-	1,048	7,023	4,565	-	2,458	12,815	686	-	-	-	564,572	48,794	-
2a.1.6 Scaffolding in support of decommissioning	-	930	3	1	26	4	-	238	1,202	1,202	-	-	138	12	-	-	-	6,985	6,368	-
2a.1 Subtotal Period 2a Activity Costs	613	23,011	19,092	3,950	5,810	19,628	614	25,102	97,819	95,362	-	2,458	37,556	33,533	125	673	-	4,194,811	182,298	6,240
Period 2a Additional Costs			0.5-	a:=					0.05											
2a.2.1 Retired RPV Upper Internals Package 2a.2 Subtotal Period 2a Additional Costs	-	257 257	387 387	217 217	-	1,394 1,394	-	1,041 1,041	3,296 3,296	3,296 3,296	-	-	-	376 376	112 112		-	50,164 50,164	3,333 3,333	133 133
Period 2a Collateral Costs																				
2a.3.1 Process decommissioning water waste	48	-	32	58	-	130	-	68	337	337	-	-	-	299	-	-	-	17,968	58	-
2a.3.3 Small tool allowance	-	239	-	-	-	-	1 000	36	274	247	1.00=	27	-	-	-	-	-	-	-	-
2a.3.4 Spent Fuel Capital and Transfer 2a.3.5 Retention and Severance	-	-	-	-	-	-	1,639 12,780	246 1,917	1,885 14,697	14,697	1,885	-	-	-	-	-	-	-	-	-
2a.3.6 Prairie Island Indian Community Payments	-	-	-	-	-	-	1,780	1,917	1,780	14,697	1,780	-	-	-	-	-	-	-	-	-
2a.3.7 On-site survey and release of 0.0 tons clean metallic waste	-	-	-	-	-	-	-,	-	-	-	-,100	-	-	-	-	-	-	-	-	-
2a.3 Subtotal Period 2a Collateral Costs	48	239	32	58	-	130	16,198	2,267	18,972	15,281	3,664	27	-	299	-	-	-	17,968	58	-

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Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							`		01 2020 Dona												
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
	•								g,										,		
Period 2a 2a.4.1	a Period-Dependent Costs Decon supplies	107						_	27	134	134										
2a.4.1 2a.4.2	Insurance	-	-	-	-	-	-	690	69	759	759	-	-	-	-	-		-	-	-	-
2a.4.3	Property taxes	-	-	-	-	-	-	5,009	501	5,510	5,510	-	-	-	-	-	-	-	-	-	-
2a.4.4	Health physics supplies	-	1,950	-	-	-	-	-	487	2,437	2,437	-	-	-	-	-	-	-	-	-	-
2a.4.5 2a.4.6	Heavy equipment rental Disposal of DAW generated	•	3,565	73	30	-	303	-	535 88	4,100 493	4,100 493	-	-	-	3,681	-	-	-	73,619	120	-
2a.4.6 2a.4.7	Plant energy budget	-	-	- 13	-	-	-	2,194	329	2,523	2,523	-	-	-	5,001	-	-	-	75,615	120	-
2a.4.8	NRC Fees	-	-	-	-	-	-	842	84	926	926	-	-	-	-	-	-	-	-	-	-
2a.4.9	Emergency Planning Fees	-	-	-	-	-	-	2,647	265	2,912		2,912	-	-	-	-	-	-	-	-	-
2a.4.10 2a.4.11	Fixed Overhead Spent Fuel Pool O&M	-	-	-	-	-	-	1,695 602	254 90	1,949 692	1,949	692	-	-	-	-	-	-	-	-	-
2a.4.11 2a.4.12	ISFSI Operating Costs	-	-	-	-	-	-	80	12	92	-	92	-	-	-	-	-	-	-	-	-
2a.4.13	Railroad Track Maintenance	-	-	-	-	-	-	318	48	366	366		-	-	-	-	-	-	-	-	-
2a.4.14	Remedial Actions Surveys	-	-	-	-	-	-	1,596	239	1,835	1,835	-	-	-	-	-	-	-	-	-	-
2a.4.15	Security Staff Cost	-	-	-	-	-	-	11,727	1,759	13,486	13,486	-	-	-	-	-	-	-	-	-	172,726
2a.4.16 2a.4.17	DOC Staff Cost Utility Staff Cost	-	-	-	-	-	_	20,663 26,905	3,099 4,036	23,763 30,941	23,763 30,941	-	-	-	_	-	-	-	-	-	225,210 417,453
2a.4.17	Subtotal Period 2a Period-Dependent Costs	107	5,515	73	30	-	303	74,968	11,922	92,918	89,223	3,696	-	-	3,681	-	-	-	73,619	120	815,389
2a.0	TOTAL PERIOD 2a COST	768	29,021	19,584	4,254	5,810	21,456	91,780	40,333	213,006	203,161	7,360	2,485	37,556		237	673		4,336,562	185,810	821,762
		700	25,021	15,564	4,204	5,610	21,490	51,700	40,333	213,000	203,101	7,300	2,460	37,330	31,000	231	075	-	4,550,562	100,010	021,702
PERIOD	2b - Site Decontamination																				
Period 2b	Direct Decommissioning Activities																				
	of Plant Systems																				
	Aux Bldg Normal Ventilation	-	2	0		1	-	-	1	3	3	-	-	3	-	-	-	-	140	29	-
2b.1.1.2 2b.1.1.3	Battery Rm Special Ventilation Buildings Maintenance	-	0	-	-	-	-	-	0	0	-	-	0	-	-	-	-	-	-	6 65	-
2b.1.1.3 2b.1.1.4	Chemical & Volume Control	1,120	1,389	89	90	753	973	-	1,286	5,700	5,700	-	- -	4,498	2,846	-	-	-	366,565	34,533	
2b.1.1.5		-,	858	25	91			-	543	3,597	3,597	-	-	12,427	-,	-	-	-	504,675	11,242	
2b.1.1.6	Containment Cooling	-	74	-	-	-	-	-	11	85	-	-	85	-	-	-	-	-	-	1,086	-
2b.1.1.7	Containment Cooling - RCA	-	304 30	7	25			-	166 10	1,070 59	1,070 59	-	-	3,400		-	-	-	138,090 4,278	3,971 401	-
2b.1.1.8 2b.1.1.9	Containment Hydrogen Control - RCA Containment Spray - RCA	-	93	2	6	18 145		-	46	293	293	-	-	105 868	_	-	-	-	4,278 35,249	1.217	-
	Containment Ventilation	-	255	24	51			-	260	1,667	1,667	-	-	4,951	737	-	-	-	247,952	3,668	-
	Cooling Water	-	163	-	-	-	-	-	24	187	-	-	187	-	-	-	-	-	· -	2,396	-
	Cooling Water - RCA	-	658	16	57	1,293	-	-	368 8	2,392	2,392	-	-	7,728	-	-	-	-	313,832	8,594	-
	D1 Emergency Diesel D2 Emergency Diesel	-	50 36	-	-	-	_	-	8 5	58 41	-	-	58 41	-	_	-	-	-	-	730 522	
	Diesel Rooms Ventilation	-	9	-	-	-	_	-	1	11	_	-	11	_	_	-	-	_	_	135	
	Electrical - Clean	-	1,905	-	-	-	-	-	286	2,191	-	-	2,191	-	-	-	-	-	-	26,981	-
	Electrical - Contaminated	=	611	7	20			-	228	1,321	1,321	-	-	2,527	95	-	-	-	108,690	8,377	-
	Electrical - Decontaminated Fuel Handling	•	3,787 121	48 6	173 11			-	1,569 74	9,518 436	9,518 436	-	-	23,551 908	218	-	-	-	956,401 50,723	49,378 1,784	-
	Fuel Oil	-	121	-		- 102	-	-	18	140	-	-	140	-	-	-	-	-		1,697	-
2b.1.1.21	HVAC - Clean	-	120	-	-	-	-	-	18	138	-	-	138	-	-	-	-	-	-	1,891	-
	HVAC - Contaminated		374	9	26			-	190	1,186	1,186	-	-	3,261	123	-	-	-	140,257	5,032	
	Incore Instrumentation Misc Drains & Vents	0	28 233	1 15	2 13	10		-	14 115	74 618	74 618	-	-	60 390	57 514	-	-	-	6,058 49,062	425 3,091	-
	Reactor Coolant	153	311	21	18			-	234	1,060	1,060	-	-	390 344		-	-	-	49,062 64,085	6,470	-
2b.1.1.26	Reactor Hot Sampling	149	136	12		11		-	142	576	576	-	-	66		-	-	-	25,063	3,946	-
	Reactor Makeup	-	73					-	11	84	-	-	84			-	-	-	-	1,042	
	Reactor Vessel Residual Heat Removal	9 357	21 419	1 85	0 86		5 1,105	-	12 654	52 3,190	52 3,190	-	-	26 2,895	14 3,252	-	-	-	2,000 326,425	425 7,621	-
	Safeguards Chilled Water	əə <i>1</i>	18	- 69	- 86	484	1,100	-	654 3	3,190	3,190 -	-	20	4,090	3,252	-	-	-	520,425 -	259	-
2b.1.1.31	Safety Injection	-	893	42	73	1,136		-	507	3,044	3,044	-	-	6,788	1,156	-	-	-	349,908	12,561	
	Sampling	-	60	4	3			-	26	140	140	-	-	59		-	-	-	9,420	811	-
	Shield Bldg Ventilation	-	140 20	14	26	360	165	-	135 3	839 23	839	-	- 23	2,152	491	-	-	-	118,583	2,030 300	
	Station & Instrument Air Station & Instrument Air - RCA	-	20 81	1	2	56	-	-	29	169	169	-	- 23	332	-	-	-	-	13,496	1,053	
	Turbine Bldg Traps & Drains	-	50	- 1		-	-	-	8	58	-	-	58	-	-	-	-	-	-	767	-
2b.1.1.37	Unit Coolers	-	42	-	-	-	-	-	6	49	-	-	49		-	-	-	-	-	611	
	Unit Coolers - RCA	1.500	10 544	0	2			-	20	115	115	=	- 0.001	230	10.700	-	-	-	9,348	683	
2b.1.1	Totals	1,789	13,544	429				-	7,032	40,209	37,119	-	3,091	77,571	10,728	-	-	-	3,840,299	205,829	
2b.1.2	Scaffolding in support of decommissioning	-	1,163	4	2	32	5	-	297	1,503	1,503	-	-	173	15	-	-	-	8,731	7,960	-

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Table E-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(Tł	ousands	of 2020 Dollar	rs)											
_						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activit	ty	Decon	Removal	Packaging	Transport		Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B		GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Deconta	amination of Site Buildings																				
2b.1.3.1	Reactor	1,215	2,807	240			13,624	-	4,981	24,476	24,476	-	-	2,230	83,429		-	-	3,633,417	50,950	
2b.1.3.2 2b.1.3	Backwash Waste Receiving Tank Totals	1,215	28 2,835	3 243			97 13,721	-	34 5,015	179 24,655	179 24,655	-	-	2,230	929 84,358		-	-	43,896 3,677,313	301 51,251	
20.1.3	Totals	1,210	2,000	243	1,200	373	10,721	-	5,015	24,000	24,655	-	-	2,230	04,550	-	-	-	3,677,313	51,251	-
2b.1.4 2b.1.5	Prepare/submit License Termination Plan Receive NRC approval of termination plan	-	-	-	-	-	-	526	79	605 a	605	-	-	-	-	-	-	-	-	-	4,096
2b.1	Subtotal Period 2b Activity Costs	3,004	17,542	675	2,041	13,384	17,377	526	12,423	66,973	63,882	-	3,091	79,974	95,101	-	-	-	7,526,343	265,040	4,096
Poriod 9	2b Additional Costs																				
2b.2.1	Operational Equipment	-	_	11	36	606	-	-	97	751	751	-	-	5,880	-	-	_	-	147,000	16	-
2b.2.2	Excavation of Underground Services	-	1,175	-	-	-	-	225	328	1,728	1,728	-	-	-	-	-	-	-	-	7,411	
2b.2.3 2b.2	Security Modifications Subtotal Period 2b Additional Costs	-	1,175	11	36	606	-	4,348 4,573	652 1,077	5,000 7,478	5,000 7,478	-	-	5,880	-	-	-	-	147,000	7,427	- -
			1,110	- 11	50	000		4,010	1,077	1,410	1,410			0,000					147,000	1,121	
Period 2 2b.3.1	2b Collateral Costs	108		74	132		298		156	768	768				684				41,053	133	
2b.3.1 2b.3.2	Process decommissioning water waste Process decommissioning chemical flush waste	108	-	90			298 677	-	224	1,289	1,289	-	-	-	875		-	-	93,252	164	
2b.3.3	Small tool allowance	-	315	-	-	-	-	-	47	362	362	-	-	-	-	-	-	-	-	-	-
2b.3.4	Spent Fuel Capital and Transfer	-	-	-	-	-	-	10,782	1,617	12,400	-	12,400	-	-	-	-	-	-	-	-	-
2b.3.5 2b.3.6	Retention and Severance Prairie Island Indian Community Payments	-	-	-	-	-	-	6,141 1,348	921	7,063 1,348	7,063	1,348	-	-	-	-	-	-	-	-	-
2b.3	Subtotal Period 2b Collateral Costs	110	315	164		-	975	18,272	2,965	23,230	9,482	13,748		-	1,559	-	-	-	134,305	297	-
Period 2	2b Period-Dependent Costs																				
2b.4.1	Decon supplies	511	-	-	-	-	-	-	128	639	639	-	-	-	-	-	-	-	-	-	-
2b.4.2	Insurance	-	-	-	-	-	-	523	52	575	575	-	-	-	-	-	-	-	-	-	-
2b.4.3 2b.4.4	Property taxes Health physics supplies	-	2,140	-	-	-	_	3,435	344 535	3,779 2,675	3,779 2,675	-	-	-	-	-	-	-	_	-	-
2b.4.5	Heavy equipment rental	-	2,774	-	-	-	-	-	416	3,190	3,190	-	-	-	-	-	-	-	-	-	-
2b.4.6	Disposal of DAW generated	-	-	70	28	-	290	-	84	472	472	-	-	-	3,521	-	-	-	70,425	115	-
2b.4.7	Plant energy budget NRC Fees	-	-	-	-	-	-	1,313 638	197 64	1,509 701	1,509	-	-	-	-	-	-	-	-	-	-
2b.4.8 2b.4.9	Emergency Planning Fees	-	-	-	-	-	-	2.006	201	2,207	701	2,207	-	-	-	-	-		-	-	-
2b.4.10	Fixed Overhead	-	-	-	-	-	-	1,284	193	1,477	1,477	-	-	-	-	-	-	-	-	-	-
2b.4.11		-	-	-	-	-	-	456	68	524	-	524	-	-	-	-	-	-	-	-	-
2b.4.12 2b.4.13		-	-	-	-	-	-	229 60	34 9	264 69	264	- 69	-	-	-	-	-	-	-	-	-
2b.4.13 2b.4.14		-		-	-	-	-	67	10	78	78	-	-	-	-	-		-	-	-	-
2b.4.15		-	-	-	-	-	-	1,209	181	1,391	1,391	-	-	-	-	-	-	-	-	-	-
2b.4.16		-	-	-	-	-	-	8,259	1,239	9,497	9,497	-	-	-	-	-	-	-	-	-	121,244
2b.4.17 2b.4.18		-	-	-	-	-	-	10,738 13,928	1,611 2,089	12,348 16,017	12,348 16,017	-	-	-	-	-	-	-	-	-	121,244 225,649
2b.4.16	Subtotal Period 2b Period-Dependent Costs	511	4,914	70	28	-	290	44,145	7,454	57,412	54,612	2,800	-	-	3,521	-	-	-	70,425	115	
2b.0	TOTAL PERIOD 2b COST	3,626	23,946	920	2,533	13,990	18,642	67,516	23,920	155,093	135,455	16,548	3,091	85,854	100,182	-	-	-	7,878,073	272,879	472,233
PERIO	D 2c - Spent fuel delay prior to SFP decon																				
Period 2	2c Direct Decommissioning Activities																				
	2c Collateral Costs																				
2c.3.1	Spent Fuel Capital and Transfer Retention and Severance	-	-	-	-	-	-	53,816 3,512	8,072	61,889 4,039	4,039	61,889	-	-	-	-	-	-	-	-	-
2c.3.2 2c.3.3	Prairie Island Indian Community Payments	-	-	-	-	-	-	1,526	527	1,526	4,059	1,526	-	-	-	-	-	-	-	-	-
2c.3	Subtotal Period 2c Collateral Costs	-	-	-	-	-	-	58,855	8,599	67,455	4,039	63,415		-	-	-	-	-	-	-	-
Period 2	2c Period-Dependent Costs																				
2c.4.1	Insurance	-	-	-	-	-	-	592	59	651	651	-	-	-	-	-	-	-	-	-	-
2c.4.2 2c.4.3	Property taxes Health physics supplies	-	263	-	-	-	-	3,512	351 66	3,863 328	3,863 328	-	-	-	-	-	-	-	-	-	-
2c.4.3 2c.4.4	Disposal of DAW generated	-	403 -	9	4	- -	38	-	11	528 61	528 61	-	-		457	-	-	-	9,141	15	
2c.4.5	Plant energy budget	-	-	-	-	-	-	1,486	223	1,709	1,709	-	-	-	-	-	-	-	-	-	-
2c.4.6	NRC Fees	-	-	-	-	-	-	687	69	756	756	-	-	-	-	-	-	-	-	-	-
2c.4.7 2c.4.8	Emergency Planning Fees Fixed Overhead	<del>-</del>	-	-	-	<del>-</del>	-	2,271 1,454	227 218	2,498 1,672	1,672	2,498	-	-	-	-	-	-	-	-	-
2c.4.9	Spent Fuel Pool O&M	-	-		-	-	-	516	77	593	1,072	593	-	-	-	-	-	-	-		-

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Table E-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(11	nousanus	oi 2020 Dollai	13)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet		Craft Manhours	Contractor Manhours
Period 2c	Period-Dependent Costs (continued)																				
2c.4.10	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	260	39	298	298	=	-	-	-	-	-	-	-	-	-
2c.4.11	ISFSI Operating Costs Railroad Track Maintenance	-	-	-	-	-	-	68 76	10	79 88	- 88	79	-	-	-	-	-	-	-	-	-
2c.4.12 2c.4.13	Security Staff Cost	-		-	-	-	-	9,348	11 1,402		10,751	-	-	-	-	-		-	-	-	137,246
2c.4.14	Utility Staff Cost	-	-	-	-	-	-	1,195	179	1,375	1,375	-	-	-	-	-	-	-	-	-	19,062
2c.4	Subtotal Period 2c Period-Dependent Costs	-	263	9	4	-	38	21,465	2,943	24,721	21,552	3,170	-	-	457	-	-	-	9,141	15	156,308
2c.0	TOTAL PERIOD 2c COST	-	263	9	4	-	38	80,320	11,543	92,176	25,591	66,585	-	-	457	-	-	-	9,141	15	156,308
PERIOD	2d - Decontamination Following Wet Fuel Storage																				
Period 2d 2d.1.1	Direct Decommissioning Activities Remove spent fuel racks	347	35	86	41	-	703	-	373	1,585	1,585	-	-	÷	2,092	-	-	-	132,919	576	-
	of Plant Systems																				
2d.1.2.1	Electrical - Contaminated - Fuel Pool	-	152		5	103		-	56	325	325	-	-	615		-	-	-	26,449	2,077	-
2d.1.2.2 2d.1.2.3	Electrical - Decontaminated - Fuel Pool HVAC - Contaminated - Fuel Pool	-	947 160			986 234		-	392 82	2,380 508	2,380 508	-	-	5,893 1,398		-	-	-	239,327 60,110	12,340 2,157	-
2d.1.2.4	Safeguards Chilled Water - RCA	-	85		4				34	207	207	-	_	495		-	-	-	20,100	1,019	-
2d.1.2.5	Spent Fuel Pool Cooling	303	357	34		135	450	-	382	1,693	1,693	-	-	806	1,325	-	-	-	117,816	7,613	
2d.1.2.6	Station & Instrument Air - RCA Fuel Pool	-	20			14		-	7	42	42	-	-	83		-	-	-	3,374	263	-
2d.1.2	Totals	303	,			1,554			954	5,157	5,157	-	-	9,290		-	-	-	467,176	25,468	
2d.1.4	Scaffolding in support of decommissioning	-	233	1	0	6	1	-	59	301	301	-	-	35	3	-	-	-	1,746	1,592	-
2d.1	Subtotal Period 2d Activity Costs	650	1,989	139	138	1,561	1,180	-	1,386	7,042	7,042	-	-	9,325	3,496	-	-	-	601,841	27,637	-
	Additional Costs																				
2d.2.1 2d.2	License Termination Survey Planning Subtotal Period 2d Additional Costs	-	-	-	-	-	-	1,037 1,037	311 311	1,348 1,348	1,348 1,348	-	-	-	-	-	-	-	-	-	6,240 6,240
	Collateral Costs																				
2d.3.1	Process decommissioning water waste	30		21		-	86	-	44	220	220	-	-	-	197	-	-	-	11,793	38	-
2d.3.2 2d.3.3	Process decommissioning chemical flush waste Small tool allowance	1	37	34	110	-	251	-	83 6		478 42	=	-	-	324	-	-	-	34,576	61	-
2d.3.4	Decommissioning Equipment Disposition	-	-	130	67	1,112	178	-	234	1,722	1,722	-	-	6,000	529	-	-	-	303,608	147	-
2d.3.5	Prairie Island Indian Community Payments	-	-	-	-	-	-	975	-	975	-	975	-	-	-	-	-	-	-	-	-
2d.3	Subtotal Period 2d Collateral Costs	31	37	185	215	1,112	514	975	367	3,437	2,462	975	-	6,000	1,050	-	-	-	349,977	246	-
Period 2d 2d.4.1	Period-Dependent Costs Decon supplies	59							15	73	73										
2d.4.1	Insurance	-	_	-	-	-	-	378	38	416	416	-	-	_	-	-	-	-	-	-	-
2d.4.3	Property taxes	-	-	-	-	-	-	2,004	200	2,204	2,204	-	-	-	-	-	-	-	-	-	-
2d.4.4	Health physics supplies	-	575		-	-	-	-	144	719	719	-	-	-	-	-	-	-	-	-	-
2d.4.5 2d.4.6	Heavy equipment rental Disposal of DAW generated	-	2,007	16	- 7	-	- 68	-	301 20	2,308 111	2,308 111	-	-	-	830	-	-	-	16,609	27	-
2d.4.6 2d.4.7	Plant energy budget	-	-	16	,	-	- 00	506	76		582	-	-	-	650	-	-		16,609	21	-
2d.4.8	NRC Fees	-	-	-	-	-	-	439	44	483	483	-	-	-	-	-	-	-	-	-	-
2d.4.9	Emergency Planning Fees	-	-	-	-	-	-	58	6		-	64	-	-	-	-	-	-	-	-	-
2d.4.10	Fixed Overhead	-	-	-	-	-	-	929	139		1,068	-	-	-	-	-	-	-	-	-	-
2d.4.11	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	332	50 7	381 50	381	-	-	-	-	-	-	-	-	-	-
2d.4.12 2d.4.13	ISFSI Operating Costs Railroad Track Maintenance	-	-	-	-	-	-	44 49	7	50 56	- 56	50	-	-	-	-	-	-	-	-	-
2d.4.14	Remedial Actions Surveys	-	-	-	-	-	-	875	131	1.006	1.006	-	-	-	-	-	-		-	-	-
2d.4.15	Security Staff Cost	-	_	-	-	-	-	5,782	867	6,649	4,694	1,955	-	-	-	-	-	-	-	-	84,454
2d.4.16	DOC Staff Cost	-	-	-	-	-	-	6,401	960	7,361	7,361	-	-	-	-	-	-	-	-	-	70,243
2d.4.17 2d.4	Utility Staff Cost Subtotal Period 2d Period-Dependent Costs	- 59	2,582	16	7	-	- 68	8,100 25,896	1,215 4,220	9,315 32,848	8,858 30,323	456 2,525	-	-	830	-	-	-	16,609	- 27	126,681 281,377
2d.0	TOTAL PERIOD 2d COST	740	4,608	340	360	2,673	1,763	27,908	6,284	44,675	41,175	3,501	-	15,325	5,377	-	-	-	968,427	27,910	287,617
PERIOD	2f - License Termination																				
Period 2f	Direct Decommissioning Activities																				
2f.1.1	ORISE confirmatory survey	-	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-
2f.1.2	Terminate license							166	50	a 216	216										
2f.1	Subtotal Period 2f Activity Costs	-	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-

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Table E-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(11	iousanus	oi 2020 Dollai	13)											
T		_			_	Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
	of Additional Costs																				
2f.2.1 2f.2	License Termination Survey Subtotal Period 2f Additional Costs	-	-	-	-	-	-	3,199 3,199	960 960		4,159 $4,159$	-	-	-	-	-	-	-	-	40,531 40,531	3,120 3,120
	ef Collateral Costs																				
2f.3.1 2f.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,264 934	190		1,454	934	-	-	-	-	-	-	-	-	-
2f.3.2 2f.3	Prairie Island Indian Community Payments Subtotal Period 2f Collateral Costs	-	-	-	-	-	-	2,198	190	934 2,388	1,454	934 934	-	-	-	-	-	-	-	-	-
	2f Period-Dependent Costs																				
2f.4.1 2f.4.2	Insurance Property taxes	-	-	-	-	-	-	362 1,771	36 177	398 1,948	398 1,948	-	-	-	-	-	-	-	-	-	-
2f.4.3	Health physics supplies	-	501		-	-	-		125	626	626	-	-	_	-	-	-	-	-	-	-
2f.4.4	Disposal of DAW generated	-	-	7	3	-	28	-	8		45	-	-	-	334	-	-	-	6,685	11	-
2f.4.5 2f.4.6	Plant energy budget NRC Fees	-	-	-	-	-	-	243 422	36 42		279 465	-	-	-	-	-	-	-	-	-	-
2f.4.7	Emergency Planning Fees	-	-	-	-	-	-	55	6	61	-	61	-	-	-	-	-	-	-	-	-
2f.4.8	Fixed Overhead	-	-	-	-	-	-	890	133		1,023	-	-	-	-	-	-	-	-	-	-
2f.4.9 2f.4.10	ISFSI Operating Costs Railroad Track Maintenance	-	-	-	-	-	-	42 47	6 7	48 54	54	48	-	-	-	-	-	-	-	-	-
2f.4.11	Security Staff Cost	-	-	-	-	-	-	5,538	831	6,369	4,497	1,873	-	-	-	-	-	-	-	-	80,898
2f.4.12	DOC Staff Cost	-	-	-	-	-	-	4,238	636		4,874		-	-	-	-	-	-	-	-	46,283
2f.4.13 2f.4	Utility Staff Cost Subtotal Period 2f Period-Dependent Costs	<del>-</del>	501	. 7	3	-	28	4,011 $17,620$	602 2,646		4,175 18,384	438 2,420	-	-	334	-	-	-	6,685	. 11	59,507 186,687
2f.0	TOTAL PERIOD 2f COST	-	501	. 7	3	-	28	23,183	3,845	27,566	24,212	3,354	-	-	334	-	-	-	6,685	40,542	189,807
PERIO	D 2 TOTALS	5,134	58,338	20,860	7,153	22,473	41,926	290,708	85,924	532,517	429,593	97,348	5,576	138,734	144,239	237	673	-	13,198,890	527,156	1,927,726
PERIO	D 3b - Site Restoration																				
Period 3	Bb Direct Decommissioning Activities																				
Demolit	ion of Remaining Site Buildings																				
3b.1.1.1	Reactor	-	4,644		-	-	-	-	697	5,341	-	-	5,341	-	-	-	-	-	-	44,669	-
3b.1.1.2 3b.1.1.3		-	3 1,651		-	-	-	-	0 248		-	-	4 1,899	-	-	-	-	-	-	16 8,411	-
3b.1.1.4		-	2,139		-	-	-	-	321	2,460	-	-	2,460	_	-	-	-	-	-	21,985	-
3b.1.1.5		-	365		-	-	-	-	55		-	-	420	-	-	-	-	-	-	1,857	-
3b.1.1	Totals	-	8,803	-	-	-	-	-	1,320	10,123	-	-	10,123	-	-	-	-	-	-	76,939	-
Site Clos 3b.1.2	seout Activities Grade & landscape site	-	448		-	-	_	_	67	515	-	-	515	_	-	-	_	-	_	921	-
3b.1.3	Final report to NRC	-	-	-	-	-	-	200	30		231	-	-	-	-	-	-	-	-	-	1,560
3b.1	Subtotal Period 3b Activity Costs	-	9,251	-	-	-	-	200	1,418	10,869	231	-	10,639	-	-	-	-	-	-	77,859	1,560
Period 3 3b.2.1	Bb Additional Costs Clean Concrete Disposal	-	2,242	-	-	-	-	5	337	2,583	-	-	2,583	-	-	-	-	-	_	8,386	-
3b.2.2	Intake Structure cofferdam	-	623		-		-	- '	93	716	-	-	716	-	-	-	-	-	-	5,168	-
3b.2.3 3b.2.4	Construction Debris Backfill	-	3,011	-	-	-	-	10	2 452		-	-	12 3.462	-	-	-	-	-	-	2.904	-
3b.2.4 3b.2.5	Disposition of Original Casks	-	24				2,390	-	728		3,640	-	5,462	-	8,929	-	-	-	1,059,612		-
3b.2	Subtotal Period 3b Additional Costs	-	5,899	80	418	-	2,390	15	1,611	10,413	3,640	÷	6,773	÷	8,929	-	-	-	1,059,612	16,604	-
Period 3 3b.3.1	Bb Collateral Costs Small tool allowance		121						18	139			139								
3b.3.1 3b.3.2	Small tool allowance Prairie Island Indian Community Payments	-	121		-		-	2,649	18	2,649	-	2,649	139	-	-	-	-	-	-	-	- -
3b.3	Subtotal Period 3b Collateral Costs	-	121	-	-	-	-	2,649	18		-	2,649	139	-	-	-	-	-	-	-	-
Period 3 3b.4.1	Bb Period-Dependent Costs Insurance		_					513	51	565	565		_								
3b.4.1 3b.4.2	Property taxes	-	-	-	-		-	4,167	417			4,583	-		-	-	-	-	-	-	-
3b.4.3	Heavy equipment rental	=	7,144		-	-	-	-	1,072	8,215	-	-	8,215	-	-	-	-	-	-	-	-
3b.4.4	Plant energy budget	=	-	-	-	-	-	344	52 22		-	395 239	-	-	-	-	-	-	-	-	-
3b.4.5 3b.4.6	NRC ISFSI Fees Emergency Planning Fees	-	-	-	-		-	218 157	22 16	239 173	-	239 173	-	-	-	-	-	-	-	-	-
3b.4.7	Fixed Overhead	-	-	-	-	-	-	1,024	154	1,178	397	781	-	-	-	-	-	-	-	-	-
3b.4.8	ISFSI Operating Costs	-	-	-	-	-	-	119	18	136	-	136	-	-	-	-	-	-	-	-	-

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Table E-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(Tł	housands	of 2020 Dolla	rs)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Rurial	Volumes		Burial /		Utility and
Activity	y	Decon	Removal	Packaging	Transport			Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B		GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Period 3b	Period-Dependent Costs (continued)																				
3b.4.9	Railroad Track Maintenance	-	-	-	-	-	-	361	54	416	153	263	-	-	-	-	-	-	-	-	-
3b.4.10	Security Staff Cost	-	-	-	-	-	-	4,616	692	5,308	-	5,308		-	-	-	-	-	-	-	57,340
3b.4.11	DOC Staff Cost	-	-	-	-	-	-	10,921	1,638	12,559	-	1 979	12,559 4,668	-	-	-	-	-	-	-	116,885
3b.4.12 3b.4	Utility Staff Cost Subtotal Period 3b Period-Dependent Costs	-	7,144	-	-	-	-	5,170 27,610	776 4,960	5,946 39,714	1,114	1,278 13,158	25,442	-	-	-	-	-	-	-	76,637 250,861
3b.0	TOTAL PERIOD 3b COST	-	22,414	80	418	-	2,390	30,474	8,008	63,784	4,985	15,807	42,993	_	8,929	-	-	-	1,059,612	94,463	252,421
PERIOI	3c - Fuel Storage Operations/Shipping																				
Period 3	e Direct Decommissioning Activities																				
Period 3c	e Collateral Costs																				
3c.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	270,755	40,613	311,368	-	311,368	-	-	-	-	-	-	-	-	-
3c.3.2	Prairie Island Indian Community Payments	-	-	-	-	-	-	94,360	-	94,360	-	94,360	-	-	-	-	-	-	-	-	-
3c.3	Subtotal Period 3c Collateral Costs	-	-	-	-	-	-	365,115	40,613	405,728	-	405,728	-	-	-	-	-	-	-	=	-
	e Period-Dependent Costs							10.000	1 000	20.110		20.110									
3c.4.1 3c.4.2	Insurance Property taxes	-	-	-	-	-	-	18,290 104,580	1,829 10,458	20,119 115,038	-	20,119 115,038	-	-	-	-	-	-	-	-	-
3c.4.3	Plant energy budget	-	-	-	-	-	-	104,500	10,450	-	-	-	-	_	-	-	_	-	_	-	-
3c.4.4	NRC ISFSI Fees	-	-	-	-	-	-	9,306	931	10,237	-	10,237	-	-	-	-	-	-	-	-	-
3c.4.5	Emergency Planning Fees	-	-	-	-	-	-	5,600	560	6,160	-	6,160	-	-	-	-	-	-	-	-	-
3c.4.6	Fixed Overhead	-	-	-	-	-	-	12,308	1,846	14,155	-	14,155	-	-	-	-	-	-	-	-	-
3c.4.7 3c.4.8	ISFSI Operating Costs Railroad Track Maintenance	-	-	-	-	-	-	4,228 4,723	634 708	4,862 5,431	-	4,862 5,431	-	-	-	-	-	-	-	-	-
3c.4.9	Security Staff Cost	-	-	-	-	-	-	164,428	24,664	189,092	-	189,092	-	-	-	-	-	-	-	-	2,042,594
3c.4.10	DOC Staff Cost	-	-	-	-	-	-	11,579	1,737	13,316	-	13,316	-	-	-	-	_	-	-	-	78,561
3c.4.11	Utility Staff Cost	-	-	-	-	-	-	71,292	10,694	81,986	-	81,986	-	-	-	-	-	-	-	-	1,040,937
3c.4	Subtotal Period 3c Period-Dependent Costs	-	-	-	-	-	-	406,334	54,061	460,395	-	460,395	-	-	-	-	-	-	-	=	3,162,093
3c.0	TOTAL PERIOD 3c COST	-	-	-	-	-	-	771,448	94,674	866,123	-	866,123	-	-	-	-	-	-	-	-	3,162,093
PERIOI	O 3d - GTCC shipping																				
Period 3	d Direct Decommissioning Activities																				
	Steam Supply System Removal																		21122		
3d.1.1.1 3d.1.1	Vessel & Internals GTCC Disposal Totals	-	-	1,444 1,444		-	8,680 8,680		1,663 1,663	11,787 11,787	11,787 11,787	-	-	-	-	-	-	1,773 1,773			-
3d.1.1	Subtotal Period 3d Activity Costs	-	-	1,444		-	8,680		1,663	11,787	11,787	-	-	-	-	-	-	1,773			-
Period 3	d Collateral Costs																				
3d.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	28	4	32	-	32	-	-	-	-	-	-	-	-	-
3d.3.2	Prairie Island Indian Community Payments	-	-	-	-	-	-	48	- ,	48	-	48	-	-	-	-	-	-	-	-	-
3d.3	Subtotal Period 3d Collateral Costs	-	-	-	-	-	-	76	4	80	-	80	-	-	-	-	-	-	-	-	-
	l Period-Dependent Costs																				
3d.4.1 3d.4.2	Insurance Property taxes	-	-	-	-	-	-	9 53	5	10 58	10 58	-	-	-	-	-	-	-	-	-	-
3d.4.4	NRC ISFSI Fees	-	-	-	-	-	-	4	0	4	- 50	4	-	-	-	-	-	-	-	-	-
3d.4.5	Emergency Planning Fees	-	-	-	-	-	-	3	0	3	-	3	-	-	-	-	-	-	-	-	-
3d.4.6	Fixed Overhead	-	-	-	-	-	-	6	1	7	7	-	-	-	-	-	-	-	-	-	-
3d.4.7	Railroad Track Maintenance	-	-	-	-	-	-	2	0	3	3	-	-	-	-	-	-	-	-	-	-
3d.4.8 3d.4.9	Security Staff Cost Utility Staff Cost	-	-	-	-	-	-	83 19	13 3	96 22	96 22	-	-	-	-	-	-	-	-	-	1,037 269
3d.4.9	Subtotal Period 3d Period-Dependent Costs	-		-	-	-	-	181	24	204	197	7	-		-	-	-	-		-	1,306
3d.0	TOTAL PERIOD 3d COST	-	-	1,444		-	8,680	256	1,691	12,071	11,984	87	-	-	-	-	-	1,773	344,823	-	1,306
PERIOI	3e - ISFSI Decontamination																				
Period 3e	e Direct Decommissioning Activities																				
Period 3e	e Additional Costs																				
3e.2.1	License Termination ISFSI	-	0	2	17	-	142		339	1,696	1,696	-	-	-	424		-	-	65,754		
3e.2	Subtotal Period 3e Additional Costs	-	0	2	17	-	142	1,197	339	1,696	1,696	-	-	-	424	-	-	-	65,754	5,882	1,161

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

Table E-1 Prairie Island DECON Unit 1 DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage (Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
Period 3e	Period-Dependent Costs																				
3e.4.1	Insurance	-	-	-	-	-	-	93	23	116	116	-	-	-	-	-	-	-	-	-	-
3e.4.2	Property taxes	-	-	-	-	-	-	56	14	69	69	-	-	-	-	-	-	-	-	-	-
3e.4.3	Plant energy budget	-	-	-	-	-	-	11	3	13	13	-	-	-	-	-	-	-	-	-	-
3e.4.4	Fixed Overhead	-	-	-	-	-	-	54	14	68	68	-	-	-	-	-	-	-	-	-	-
3e.4.5	Railroad Track Maintenance	-	-	-	-	-	-	21	5	26	26	-	-	-	-	-	-	-	-	-	-
3e.4.6	Security Staff Cost Utility Staff Cost	=	-	-	-	-	-	174	43	217	217	-	-	-	-	-	-	-	-	-	2,500 1,896
	Subtotal Period 3e Period-Dependent Costs	-	-	-	-	-	-	129 536	32 134	161 670	161 670	-	-	-	-	-	-	-	-	-	1,896 4,396
3e.4	Subtotal Feriod Se Feriod-Dependent Costs	-	-	-	-	-	-	996	154	670	670	-	-	-	-	-	-	-	-	-	4,596
3e.0	TOTAL PERIOD 3e COST	-	0	2	17	-	142	1,733	473	2,367	2,367	-	-	-	424	-	-	-	65,754	5,882	5,556
PERIOD	3f - ISFSI Site Restoration																				
Period 3f	Direct Decommissioning Activities																				
Period 3f	Additional Costs																				
3f.2.1	Demolition and Site Restoration of ISFSI	-	1,121	-	-	-	-	161	192	1,474	-	-	1,474	-	-	-	-	-	-	4,846	80
3f.2	Subtotal Period 3f Additional Costs	=	1,121	-	-	-	-	161	192	1,474	-	-	1,474	-	-	-	-	-	-	4,846	80
	Collateral Costs																				
	Small tool allowance	-	7	-	-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	-	-
3f.3	Subtotal Period 3f Collateral Costs	-	7	-	-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	-	-
Period 3f	Period-Dependent Costs																				
3f.4.2	Property taxes	-	-	-	-	-	-	28	3	31	-	-	31	-	-	-	-	-	-	-	-
3f.4.3	Heavy equipment rental	-	59	-	-	-	-		9	68	-	-	68	-	-	-	-	-	-	-	-
3f.4.4	Plant energy budget	-	-	-	-	-	-	6	1	6	-	-	6	-	-	-	-	-	-	-	-
3f.4.5 3f.4.6	Fixed Overhead Railroad Track Maintenance	-	-	-	-	-	-	28	4 2	32 12	-	-	32 12	-	-	-	-	-	-	-	-
3f.4.6 3f.4.7	Security Staff Cost	-	-	-	-	-	-	11 89	13	102	-	-	102	-	-	-	-	-	-	-	1,281
3f.4.8	Utility Staff Cost	-	-	-	-	-	-	55	8	63	-	-	63	-	-	-	-	-	-	-	795
	Subtotal Period 3f Period-Dependent Costs	-	59	-	-	-	-	216	40	315	-	-	315	-	-	-	-	-	-	-	2,076
3f.0	TOTAL PERIOD 3f COST	-	1,187	-	-	-	-	377	233	1,798	-	-	1,798	-	-	-	-	-	-	4,846	2,156
PERIOD	3 TOTALS	-	23,601	1,525	435	-	11,212	804,289	105,079	946,142	19,335	882,017	44,790	-	9,353	-	-	1,773	1,470,189	105,190	3,423,532
TOTAL C	OST TO DECOMMISSION	8,929	87,919	22,838	8,068	22,651	58,542			1,634,199	596,408	985,833	51,958	144,866	167,553	826	673	1,773		677,859	6,351,987

TOTAL COST TO DECOMMISSION WITH 14.9% CONTINGENCY:	\$1,634,199	thousands of 2020 dollars
TOTAL NRC LICENSE TERMINATION COST IS 36.5% OR:	\$596,408	thousands of 2020 dollars
SPENT FUEL MANAGEMENT COST IS 60.33% OR:	\$985,833	thousands of 2020 dollars
NON-NUCLEAR DEMOLITION COST IS 3.18% OR:	\$51,958	thousands of 2020 dollars
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	169,051	Cubic Feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	1,773	Cubic Feet
TOTAL SCRAP METAL REMOVED:	32,925	Tons
TOTAL CRAFT LABOR REQUIREMENTS:	677,859	Man-hours

End Notes:
n/a · indicates that this activity not charged as decommissioning expense
a · indicates that this activity performed by decommissioning staff
0 · indicates that this value is less than 0.5 but is non-zero
A cell containing " · " indicates a zero value

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Table E-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(11	iousanas o	of 2020 Dollar	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Volumes		Burial /		Utility and
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
Pi-	down through Transition								<u> </u>										•		
	commissioning Activities																				
1a.1.1 Prepare p	preliminary decommissioning cost	-	-	-	-	-	-	71	11	82	82	-	-	-	-	-	-	-	-	-	556
	ion of Cessation of Operations									a											
	fuel & source material ion of Permanent Defueling									n/a a											
1a.1.5 Deactivat	te plant systems & process waste									a											
	and submit PSDAR	-	-	-	-	-	-	110	16	126	126	-	-	-	-	-	-	-	-	-	855 1,967
	lant dwgs & specs. detailed rad survey	-	-	-	-	-	-	253	38	291 a	291	-	-	-	-	-	-	-	-	-	1,967
1a.1.9 Estimate	by-product inventory	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
	luct description	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
	by-product inventory ajor work sequence	-		-	-	-	-	71 412	11 62	82 474	82 474	-	-						-	-	556 3,207
1a.1.13 Perform	SER and EA	-	-	-	-	-	-	170	26	196	196	-	-	-	-	-	-	-	-	-	1,326
	submit Defueled Technical Specifications	-	-	-	-	-	-	412	62	474	474	-	-	-	-	-	-	-	-	-	3,207
	Site-Specific Cost Study submit Irradiated Fuel Management Plan	-	-	-	-	-	-	275 55	41 8	316 63	316 63	-	-	•	-	-	-	-	-	-	2,138 428
-	_	-	-	-	-	-	-	55	0	03	0.5	-	-	-	-	-	-	-	-	-	420
Activity Specification 1a.1.17.1 Plant & t		-	_	_	-	_	-	270	41	311	280	-	31	-	-	-	_	-	_	-	2,104
1a.1.17.2 Plant sys	stems	-	-	-	-	-	-	229	34	263	237	-	26	-	-	-	-	-	-	-	1,782
1a.1.17.3 NSSS De 1a.1.17.4 Reactor i	econtamination Flush	-	-	-	-	-	-	27 390	4 59	32 449	32 449	-	-	-	-	-	-	-	-	-	214 3,036
1a.1.17.5 Reactor v		-	-	-	-	-	-	357	59 54	411	411	-	-	-	-	-	-	-	-	-	2,779
1a.1.17.6 Biologica	l shield	-	-	-	-	-	-	27	4	32	32	-	-	-	-	-	-	-	-	-	214
1a.1.17.7 Steam ge		-	-	-	-	-	-	171	26	197	197	-		-	-	-	-	-	-	-	1,334
1a.1.17.8 Reinforce 1a.1.17.9 Main Tur		-	-	-	-	-	-	88 22	13 3		51	-	51 25	-	-	-	-	-	-	-	684 171
1a.1.17.10 Main Cor		-	-	-	-	-	-	22	3		-	-	25	-	-	-	-	-	-	-	171
1a.1.17.11 Plant str		-	-	-	-	-	-	171	26	197	99	-	99	-	-	-	-	-	-	-	1,334
1a.1.17.12 Waste ma 1a.1.17.13 Facility &		-	-	-	-	-	-	253 49	38 7	291 57	291 28	-	- 28	-	-	-	-	-	-	-	1,967 385
1a.1.17.15 Facility e	x site closeout	-		-		-	-	2,079	312		2,105	-	286 286	-	-	-	-	-			16,175
Diamaina & Cita Das																					
Planning & Site Pre 1a.1.18 Prepare of	dismantling sequence	_	_	_	_	_	_	132	20	152	152	_	_	-	-	_	_	_	_	_	1,026
	ep. & temp. svces	-	-	-	-	-	-	3,500	525	4,025	4,025	-	-	-	-	-	-	-	-	-	-
	rater clean-up system	-	-	-	-	-	-	77	12		88	-	-	-	-	-	-	-	-	-	599
	Cont. Cntrl Envlps/tooling/etc. casks/liners & containers	-	-	-	-	-	-	2,400 68	360 10		2,760 78	-	-	-	-	-	-	-	-	-	526
	Period 1a Activity Costs	-	-	-	-	-	-	10,195	1,529	11,724	11,439	-	286	-	-		-	-		-	33,420
Period 1a Additiona	1 Costs																				
1a.2.1 Spent Fu	el Pool Isolation	-		-	_	-	-	8,450	1,268	9,718	9,718	-	-	-	-	-	-	-	-	-	-
1a.2 Subtotal	Period 1a Additional Costs	-	-	-	-	-	-	8,450	1,268	9,718	9,718	-	=	-	-	-	-	-	-	-	-
Period 1a Collateral																					
	el Capital and Transfer	-	-	-	-	-	-	1,330	199	1,529	- 0.050	1,529	-	-	-	-	-	-	-	-	-
	n and Severance sland Indian Community Payments	-	-	-	-	-	-	8,394 1,249	1,259	9,653 1,249	9,653	1,249	-	-	-	-	-	-	-	-	-
	Period 1a Collateral Costs	-	-	-	-	-	-	10,973	1,459		9,653	2,779		-	-	-	-	-	-	-	-
Period 1a Period-De	mendent Costs																				
1a.4.1 Insurance		-	-	_	_	_	-	1,660	166	1,826	1,826	-	-	-	-	_		_	-	-	-
1a.4.2 Property	taxes	-	-	-	-	-	-	3,623	362	3,985	3,985	-	-	-	-	-	-	-	-	-	-
	hysics supplies	-	578		-	-	-	-	144		722	-	-	-	-	-	-	-	-	-	-
	uipment rental of DAW generated	-	753 -	11	-	- 5 -	47		113 13	866 76	866 76	-	-	-	565	-	-	-	11,299	18	-
1a.4.6 Plant ene	ergy budget	-	-	-	-	-	-	1,621	243	1,864	1,864	-	-	-	-	-	-	-		-	-
1a.4.7 NRC Fee		-	-	-	-	-	-	638	64	702	702	- 9.00	-	-	-	-	-	-	-	-	-
1a.4.8 Emergen 1a.4.9 Fixed Ov	cy Planning Fees erhead	-	-	-	-	-	-	2,174 $1,440$	217 216	2,392 1,656	1,656	2,392	-	-	-	-	-	-	-	-	-
1a.4.10 Spent Fu	el Pool O&M	-	-	-	-	-	-	422	63	486	-	486		-	-	-	-	-	-	-	-
	perating Costs	-	-	-	-	-	-	56	8	64	-	64	-	-	-	-	-	-	-	-	-

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Table E-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(111	ousunus (	oi 2020 Dollars	,											
Activi	ty.	Decon	Removal	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Total	Total	NRC Lic. Term.	Spent Fuel Management	Site Restoration	Processed Volume	Class A	Burial Class B	Volumes Class C	GTCC	Burial / Processed	Craft	Utility and Contractor
Inde	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Period 1	a Period-Dependent Costs (continued)																				
1a.4.12	Railroad Track Maintenance	=	-	-	-	-	-	63	9	72	72	-	-	-	-	-	-	-	-	-	-
1a.4.13 1a.4.14		-	-	-	-	-	-	8,328 21,681	1,249 3,252	9,577 $24,933$	9,577 24,933	-	-	-	-	-	-	-	-	-	122,720 345,280
1a.4.14 1a.4	Subtotal Period 1a Period-Dependent Costs	-	1,331	11	. 5		47		6,122	49,221	46,279	2,942	-	-	565	-	-	-	11,299	18	
1a.0	TOTAL PERIOD 1a COST	-	1,331	11	. 5	_	47	71,324	10,377	83,095	77,089	5,720	286	-	565	-	-	-	11,299	18	501,420
PERIO	D 1b - Decommissioning Preparations																				
Period 1	b Direct Decommissioning Activities																				
	1 Work Procedures							200	00	200	200		90								2.024
1b.1.1.1 1b.1.1.2	Plant systems NSSS Decontamination Flush	-	-	-	-	-	-	260 55	39 8	299 63	269 63	-	30	-	-	-	-	-	-	-	2,024 428
1b.1.1.3		-	-	-	-	-	-	137	21	158	158	-	-	-	-	-	-	-	-	-	1,069
1b.1.1.4 1b.1.1.5		-	-	-	-	-	-	74 55	11 8	85 63	21 63	-	64	-	-	-	-	-	-	-	577 428
1b.1.1.6		-	-	-	-	-	-	55 55	8	63	63	-	-	-	-	-	-	-	-	-	428
1b.1.1.7	Incore instrumentation	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
1b.1.1.8 1b.1.1.9		-	-	-	-	-	-	199 66	30 10	229 76	229 38	-	- 38	-	-	-	-	-	-		1,552 513
	0 Missile shields	-	-	-	-	-	-	25	4	28	28	-	-	-	-	-	-	-	-	-	192
	1 Biological shield	Ē	-	-	-	-	-	66 253	10	76 291	76 291	-	-	-	-	-	-	-	-	-	513 1,967
	2 Steam generators 3 Reinforced concrete	-			-	-	-	255 55	38 8	63	32	-	32	-	-	-	-	-	-		428
	4 Main Turbine	-	-	-	-	-	-	86	13	99	-	-	99	-	-	-	-	-	-	-	667
	5 Main Condensers 6 Auxiliary building	=	-	-	-	-	-	86 150	13 23	99 173	155	-	99 17	-	-	-	-	-	-	-	667 1,167
	7 Reactor building	- -	-		-	-	-	150	23	173	155	-	17	-	-	-	-	-	-	-	1,167
1b.1.1	Total	-	-	-	-	-	-	1,827	274	2,101	1,706	-	395	-	-	-	-	-	-	-	14,215
1b.1.2 1b.1	Decon primary loop Subtotal Period 1b Activity Costs	572 572		-	-	-	-	1,827	286 560	859 2,959	859 2,564	-	- 395	-	-	-	-	-	-	1,067 1,067	14,215
	b Additional Costs																				
1b.2.1 1b.2.2	Site Characterization Mixed/Hazardous Waste	=	-	353	94	178		1,505	451 76	1,956 702	1,956 702	-	-	6,132	-	-	-	-	351,977	8,988 2,348	3,563
1b.2.3	Asbestos Abatement	-	2,526	3	150	-	1,369	-	996	5,044	5,044	-	-	-	12,843	-	-	-	166,959	20,907	-
1b.2	Subtotal Period 1b Additional Costs	-	2,526	356	244	178	8 1,369	1,505	1,524	7,702	7,702	-	-	6,132	12,843	-	-	-	518,936	32,243	3,563
	b Collateral Costs	1.022							150	1.010	1.010										
1b.3.1 1b.3.2	Decon equipment DOC staff relocation expenses	1,055	-	-	-	-	-	1,264	158 190	1,213 1,454	1,213 1,454	-	-	-	-	-	-	-	-	-	-
1b.3.3	Process decommissioning water waste	25	-	16			66	-,	35	172	172	-	-	-	152	-	-	-	9,127	30	-
1b.3.4 1b.3.5	Process decommissioning chemical flush waste Small tool allowance	2	- 36	61	199	-	3,889	-	1,009 5	5,159 42	5,159 42	-	-	-	-	588	-	-	62,689	110	-
1b.3.6	Pipe cutting equipment	-	1,200	-	-	-	-	-	180	1,380	1,380	-	-	-	-	-	-	-	-	-	-
1b.3.7	Decon rig	2,104	-	-	-	-	-	-	316	2,419	2,419	-	-	-	-	-	-	-	-	-	-
1b.3.8 1b.3.9	Spent Fuel Capital and Transfer Retention and Severance	-	-	-	-	-	-	399 4,017	60 603	459 4,620	4,620	459	-	-	-	-	-	-	-	-	-
1b.3.10	Prairie Island Indian Community Payments	-	-	-	-	-	-	623	-	623	-	623	-	-	-	-	-	-	-	-	-
1b.3	Subtotal Period 1b Collateral Costs	3,185	1,236	77	228	-	3,955	6,303	2,555	17,540	16,458	1,082	-	-	152	588	-	-	71,815	140	-
	b Period-Dependent Costs	90							0	47	45										
1b.4.1 1b.4.2	Decon supplies Insurance	38	-	-	-		-	828	9 83	47 910	47 910	-	-	-	-	-	-	-	-	-	-
1b.4.3	Property taxes	-	-	-	-	-	-	1,713	171	1,884	1,884	-	-	-	-	-	-	-	-	-	-
1b.4.4 1b.4.5	Health physics supplies Heavy equipment rental	-	449 375	-	-	-	-	-	112 56	561 432	561 432	-	-	-	-	-	-	-	-	-	-
1b.4.6	Disposal of DAW generated	-	-	- 6		-	27	-	8	43	43	-	-	-	324	-	-	-	6,473	11	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	1,617	243	1,859	1,859	-	-	-	-	-	-	-	-	-	-
1b.4.8 1b.4.9	NRC Fees Emergency Planning Fees	-	-	-	-		-	196 1,084	20 108	216 1,193	216	1,193	-	-	-	-	-	-	-	-	-
1b.4.10	Fixed Overhead	-	-	-	-	-	-	718	108	826	826	-	-	-	-	-	-	-	-	-	-
1b.4.11 1b.4.12		-	-	-		-	-	211 28	32 4	242 32	-	242 32	-	-	-		-	-	-	-	-
10.4.12	101 01 Operating Costs	-	-	-	-	-	-	40	4	02	-	32	-	-	-	-	-	-	-	-	-

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Table E-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(The	ousands o	of 2020 Dollar	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Volumes		Burial /		Utility and
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C	GTCC Cu. Feet	Processed	Craft Manhours	Contractor Manhours
Period 1b I	Period-Dependent Costs (continued)																				
1b.4.13	Railroad Track Maintenance	-	-	-	-	-	-	31	5	36	36	-	-	-	-	-	-	-	-	-	-
	Security Staff Cost DOC Staff Cost	-	-	-	-	-	-	4,153	623 627	4,775	4,775	-	-	-	-	-	-	-	-	-	61,192
	Utility Staff Cost	-	-	-	-	-	-	4,182 10,811	1,622	4,810 12,432	4,810 12,432	-	-	-	-	-	-	-	-	-	46,672 172,167
	Subtotal Period 1b Period-Dependent Costs	38	8 825	6	3	-	27	25,571	3,830	30,299	28,832	1,467	-	-	324	-	-	-	6,473	11	280,031
1b.0	TOTAL PERIOD 1b COST	3,795	5 4,586	440	475	178	5,351	35,206	8,470	58,501	55,557	2,549	395	6,132	13,319	588	-	-	597,225	33,460	297,808
PERIOD	1 TOTALS	3,798	5,917	451	479	178	5,398	106,531	18,847	141,595	132,646	8,269	681	6,132	13,884	588	-	-	608,524	33,478	799,228
PERIOD :	2a - Large Component Removal																				
Period 2a l	Direct Decommissioning Activities																				
	team Supply System Removal																				
	Reactor Coolant Piping	54			18	-	187	-	89	406	406	-	-	-	508		-	-	35,411	1,421	-
	Pressurizer Relief Tank Reactor Coolant Pumps & Motors	24 57			12 93	-	125 463	-	51 186	238 977	238 977	-	-	-	338 2,332		-	-	23,594 295,800	630 2,049	100
	Pressurizer	-	77		97	-	776	-	278	1,732	1,732	-	-	-	2,196		-	-	185,015	1,666	938
	Steam Generators	-	3,307		1,770	2,409	4,001	-	2,681	16,437	16,437	-	-	18,672			-	-	1,689,435	11,613	2,875
	CRDMs/ICIs/Service Structure Removal Reactor Vessel Internals	302 82			66 929	-	938 9,015	307	488 11,878	2,294 40,693	2,294 40,693	-	-	-	4,797 501		673	-	177,400 164,987	8,104 25,123	1,163
	Reactor Vessel	94			728	-	2,975	307	6,804	18,982		-	-	-	8,073		- 619	-	576,524	25,123	1,163
	Totals	615			3,714	2,409	18,480	614	22,455		81,759	-	-	18,672			673	-	3,148,166	75,729	6,240
Removal of	f Major Equipment																				
	Main Turbine/Generator	-	331		64	527	377	-	283	1,752	1,752	-	-	2,131			-	-	203,265	4,667	-
2a.1.3	Main Condensers	-	2,801	109	62	705	533	-	960	5,170	5,170	-	-	3,800	1,587	-	-	-	271,824	39,151	-
	Costs from Clean Building Demolition		794						110	913	913									7 500	
	Reactor Auxiliary		794 221		-	-	-	-	119 33			-	-	-	-	-	-	-	-	7,589 1,309	-
	Radwaste	-	9		-	-	-	-	1	10		-	-	-	-	-	-	-	-	65	
2a.1.4	Totals		1,023	-	-	-	-	-	154	1,177	1,177	-	-	-	=	-	-	-	=	8,963	-
	f Plant Systems																				
	Admin Bldg Ventilation Air Removal	-	6 29		-	-	-	-	1	7	-	-	7	-	-	-	-	-	-	90 422	-
	Auxiliary Feedwater	-	29 46		-	-	-		4 7	33 53		-	33 53	-	-	-	-	-	-	422 676	-
	Auxiliary Feedwater - RCA	-	38		1	30	-	-	14	84	84	-	-	178	-	-	-	-	7,214	486	-
	Bleed Steam	-	90		-	-	-	-	13	103	-	-	103	-	-	-	-	-	-	1,331	-
	Caustic Addition - RCA Chemical Feed	-	40 17		2	40	-	-	16	99 20	99	-	20	240	-	-	-	-	9,761	468 261	-
	Chemical Feed - RCA	-	3		- 0	3	-	-	ა 1	20 7	7	-	- 20	16	-	-		-	634	31	-
2a.1.5.9	Circulating Water	-	27		- "	-	-	-	4	32	-	-	32	-	-	-	-	-	-	401	-
	Condensate	-	525		-	-	-	-	79	603	-	-	603	-	-	-	-	-	-	7,537	-
	Condensate Polishing Condensate Polishing - RCA	-	208 38		- 4	81	-	-	31 22	239 145	145	-	239	483	-	-	-	-	19,616	2,987 493	-
	Electro-Hydraulic	- -	10		-	-	-	-	1	11	-	-	11	-	-	-	-	-	-	143	-
2a.1.5.14	External Circulating Water	-	26	-	-	-	-	-	4	30	-	-	30	-	-	-	-	-	-	385	-
	External Circulating Water - RCA	-	72		5	121	-	-	37	237	237	-	-	721	-	-	-	-	29,284	938	-
	Feedwater Feedwater - RCA	-	127 248		31	694	-	-	19 171	146 1,152	1,152	-	146	4,147	-	-	-	-	168,414	1,840 3,377	-
	Gland Seal	-	34			-		-	5	39	1,102	-	39		-	-	-	-	100,414	504	=
	Heater Drain	-	384		-	-	-	-	58	441	-	-	441	-	-	-	-	-	-	5,638	=
	Hypobromous Acid Feed	-	6		- ^	-	-	-	1	7	- ^	-	7	- ^	-	-	-	-	-	86	-
	Hypobromous Acid Feed - RCA Internal Circ Water & CDSR	-	1 25	0	0	0	-	-	0 4	2 29	2	-	29	2	-	-	-	-	100	12 366	-
	Main Gen/Exciter/Transformer	-	0		-	-	-	-	0			-	0	-	-	-	-	-	-	5	-
	Main Steam	-	101		-	-	-	-	15	116		-	116	-	-	-	-	-	-	1,482	-
	Main Steam - RCA	-	380		38	864	-	-	231	1,525	1,525	-	-	5,166		-	-	-	209,799	5,146	-
	Repairable Spare Snubbers Steam Exclusion	-	6 2	-	0	2	-	-	2	10 2		-	- 2	12	-	-	-	-	490	82 32	-
	Steam Exclusion - RCA	-	4		- 0	4	-	-	2	10		-	- 2	24	-	-	-	-	966	32 47	-
2a.1.5.29	Steam Generator Blowdown	-	416		27	319	215	-	212			-	-	1,906		-	-	-	118,130	5,778	-
	Steam Generators		5						1	6			6							75	

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Table E-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(111	ousanus o	f 2020 Dollar	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activity		Decon		Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B		GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Disposal	of Plant Systems (continued)																				
	Turbine & Moisture Separators	-	377	-	-	-	-	-	57	434	-	-	434		-	-	-	-	-	5,472	-
	Turbine Oil Purification	-	53	-	-	-	-	-	8	61	-	-	61		-	-	-	-	-	757	-
	Water Treatment Water Treatment - RCA	-	453 20	- 0	1	19	-	-	68 8	521 49	49	-	521	115	-	-	-	-	4,652	6,677 252	-
2a.1.5.54 2a.1.5	Totals	-	3,817	43	108	2,177	215	-	1,100		4,528	_	2,933			-	-	-	569,060	54,280	-
24.1.0			0,011				210		1,100		1,020		2,000	10,010	001				000,000	01,200	
2a.1.6	Scaffolding in support of decommissioning	-	3,020	22	10	188	30	-	794	4,064	4,064	-	-	1,012	89	-	-	-	51,216	26,270	-
2a.1 Period 2a	Subtotal Period 2a Activity Costs a Additional Costs	613	25,702	19,110	3,959	6,005	19,635	614	25,745	101,384	98,450	-	2,933	38,625	33,556	125	673	-	4,243,531	209,060	6,240
2a.2.1	Retired RPV upper internals package	-	257	387	217	-	1,394	-	1,041	3,296	3,296	-	-	-	376	112	-	-	50,164	3,333	133
2a.2	Subtotal Period 2a Additional Costs	-	257	387	217	-	1,394	-	1,041	3,296	3,296	-	-	-	376	112	-	-	50,164	3,333	133
Period 2a	a Collateral Costs																				
2a.3.1	Process decommissioning water waste	49	-	33	60	-	134	-	70	347	347	-	-	-	308	-	-	-	18,487	60	-
2a.3.3	Small tool allowance	-	269	-	-	-	-	-	40	309	278	-	31	-	-	-	-	-	-	-	-
2a.3.4	Spent Fuel Capital and Transfer	-	-	-	-	-	-	13,363	2,004			15,368	-	-	-	-	-	-	-	-	-
2a.3.5 2a.3.6	Retention and Severance Prairie Island Indian Community Payments	-	-	-	-	-	-	8,215 1,780	1,232	9,447 1,780	9,447	1,780	-	-	-	-	-	-	-	-	-
2a.3.6 2a.3	Subtotal Period 2a Collateral Costs	49	269	33	60	-	134	23,358	3,347		10,072	17,147		-	308	-	-	-	18,487	60	-
								-,	-,-	.,		.,							-,		
	a Period-Dependent Costs	105							27	134	134										
2a.4.1 2a.4.2	Decon supplies Insurance	107	-	-	-	-	-	690	69	759	759	-	-	-	_	-		_	-	-	-
2a.4.3	Property taxes	-	-	-	_	-	-	4,548	455	5,002	5,002	-	-	-	-	_	_	_	_	-	_
2a.4.4	Health physics supplies	-	2,103	-	-	-	-	-	526	2,629	2,629	-	-	-	-	-	-	-	-	-	-
2a.4.5	Heavy equipment rental	-	3,565	-	-	-	-	-	535	4,100	4,100	-	-	-	-	-	-	-	-	-	-
2a.4.6	Disposal of DAW generated	-	-	86	35	-	358		103	582	582	-	-	-	4,345	-	-	-	86,891	142	-
2a.4.7 2a.4.8	Plant energy budget NRC Fees	-	-	-	-	-	-	2,194 526	329 53	2,523 578	2,523 578	-	-	-	-	-	-	-	-	-	-
2a.4.8 2a.4.9	Emergency Planning Fees	-		-	-	-	-	2,647	265	2,912		2,912	-	-	-	-	-	-	-	-	-
2a.4.10	Fixed Overhead	-	-	-	_	-	-	1.695	254	1,949	1,949	2,012	-	-	-	_	_	_	_	-	_
2a.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	602	90	692	-	692	-	-	-	-	-	-	-	-	-
2a.4.12	ISFSI Operating Costs	-	-	-	-	-	-	80	12		-	92	-	-	-	-	-	-	-	-	-
2a.4.13	Railroad Track Maintenance	-	-	-	-	-	-	318	48	366	366	-	-	-	-	-	-	-	-	-	-
2a.4.14 2a.4.15	Remedial Actions Surveys Security Staff Cost	-	-	-	-	-	-	1,596 10,900	239 1,635	1,835 12,534	1,835 12,534	-	-	-	-	-	-	-	-	-	160,018
2a.4.16	DOC Staff Cost		-	-	-	-		20,663	3,099	23,763	23,763	-	-	-	-	-	-	-		-	225,210
2a.4.17	Utility Staff Cost	-	-	-	-	-	-	27,056	4,058		31,115	-	-	-	-	-	-	-	-	-	419,049
2a.4	Subtotal Period 2a Period-Dependent Costs	107	5,668	86	35	-	358	73,514	11,797	91,565	87,870	3,696	-	-	4,345	-	-	-	86,891	142	804,276
2a.0	TOTAL PERIOD 2a COST	770	31,895	19,616	4,270	6,005	21,522	97,486	41,931	223,495	199,687	20,843	2,964	38,625	38,584	237	673	-	4,399,073	212,595	810,649
PERIOI	2b - Site Decontamination																				
Period 2h	Direct Decommissioning Activities																				
Disposal	of Plant Systems																				
	ADT & Misc Ventilation	ē	25	1	1	26	3	-	11	66	66	-	-	153	9	-	-	-	6,803	363	=
2b.1.1.2	Aux Bldg Normal Ventilation	-	69	2	6	116	13	-	39	246	246	-	-	692		-	-	-	30,595	1,013	-
2b.1.1.3	Aux Bldg Special Ventilation	-	14	0	1	12	2	-	6	34	34	-	-	70	6	-	-	-	3,234	197	-
2b.1.1.4	Battery Rm Special Ventilation	- 0	2	- 0	-	- 0	- 3	-	0	2	- 10	-	2	- 3	- 9	-	-	-	-	24	-
2b.1.1.5 2b.1.1.6	Boron Recycle Chemical & Volume Control	749	-1	62	0 57	394	677	_	2 853	10 3,736	10 3,736	-	-	2,356	U	-		_	700 $223,753$	50 23,197	-
2b.1.1.7	Cold Chemical Lab Ventilation	-	1	- 02	-	-	-	_	0	0,700	-	-	1	2,000		_	_	_	-	20,107	-
2b.1.1.8	Component Cooling - RCA	-	647	25	88	2,007	-	-	479		3,246	-	-	11,996	-	-	-	-	487,169	8,583	-
2b.1.1.9		-	35	-	-	-	-	-	5	40	-	-	40		-	-	-	-	-	502	-
	Containment Cooling - RCA	-	302	6	20	459	-	-	148		934	-	-	2,743		-	-	-	111,390	3,949	-
	Containment Hydrogen Control - RCA Containment Spray - RCA	-	36 194	0	1 11	24 243	-	-	13 87	74 538	74 538	-	-	141 1,453	-	-	-	-	5,742 59,019	494 2,617	-
	Containment Spray - RCA Containment Ventilation	-	235	23	49	790	243	-	248		1,587	-	-	4,721	722	-	-	-	237,643	3,375	-
	Control/Relay/Cmptr Rm Vent	-	31	1	2	44	7	-	17	102	102	-	-	260		-	-	-	11,878	454	-
2b.1.1.15	Cooling Water	-	159	-	-	-	-	-	24	183	-	-	183		-	-	-	-	-	2,344	-
	Cooling Water - RCA	-	476	17	62	1,412	-	-	342		2,310	-	-	8,442		-	-	-	342,822	6,311	-
	Cranes/Hoists/Elevators - RCA	-	3	0	1	17	-	-	4	25	25	-	-	103	-	-	-	-	4,184	48	-
	D3 Emergency Diesel	-	10	-	-	-	-	-	2	12		-	12		-	-	-	-	-	141	-
∠0.1.1.19	D4 Emergency Diesel	•	10	-	-	-	-	-	2	12	-	-	12	-	-	-	-	-	-	141	-

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Table E-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(The	ousanas o	of 2020 Dollars	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity		Decon	Removal	Packaging	Transport		Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B		GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Dienosal	of Plant Systems (continued)																				
	D5 Emergency Diesel	-	0	_	-	_	-	_	0	0	-	_	0	-	-	-	-	-	-	5	-
	Electrical - Clean	-	1,714	-	-	-	-	-	257	1,972	-	-	1,972	-	-	-	-	-	-	24,276	-
2b.1.1.22	Electrical - Contaminated	-	475		16		25	-	178	1,034	1,034	-	-	1,997		-	-	-	85,887	6,503	-
2b.1.1.23	Electrical - Decontaminated	-	2,955	38	138	3,138	-	-	1,234	7,503	7,503	-	-	18,753	-	-	-	-	761,569	38,423	-
	Filter Rm Ventilation	-	5		0	4	0	-	2	11	11	-	-	24	1	-	-	-	1,017	69	-
	Fire Protection & Detection	-	204		-	-	-	-	31	235	-	-	235	-	-	-	-	-	-	3,009	-
	Fire Protection & Detection - RCA Fuel Handling	-	246 74		13 2			-	110 28	679 156	679 156	-	-	1,828 200		-	-	-	74,245 11,273	3,134 1,101	-
2b.1.1.27 2b.1.1.28		-	14	1	2	- 34	17	-	20	196	196	-	- 1	200	49	-	-	-	11,275	1,101	-
	HVAC - Clean	- -	151	-	-	-	-	-	23	174	-	-	174	-	-	-	-	-	-	2,373	-
	HVAC - Contaminated	-	1,231		87	1,798	136	-	627	3,908	3,908	_	-	10,745	405	-	-	-	462,103	16,579	-
2b.1.1.31		-	322		-	-	-	-	48	370	-	-	370	-	-	-	-	-	- ,	4,804	-
	Heating - RCA	-	337		14			-	135	809	809	-	-	1,907		-	-	-	77,458	4,086	-
	Hot Lab & Sample Rm Ventilation	-	20		1	10		-	8	48	48	-	-	107		-	-	-	4,622	285	-
	Incore Instrumentation	0	30		2				14	77	77	-	-	60		-	-	-	6,143	458	-
	Misc Drains & Vents	-	234		12			-	109	590	590	-	-	458		-	-	-	46,079	3,180	-
	Misc Lab & Service Areas Vent Miscellaneous Gas	-	129 72		8	62		-	65 11	356 83	356	-	- 83	370	244	-	-	-	30,899	1,713 1,073	-
	Miscellaneous Gas Miscellaneous Gas - RCA	-	134		- 4	100	-	-	49	83 289	289	-	83	600	-	-	-	-	24,378	1,636	-
	Radiation Monitoring	-	7		- 4	100	-	-	45	209	203	-	9	-	-		-	-	24,576	1,030	-
	Radiation Monitoring - RCA	- -	65	1	2	53	-	-	25	145	145	-	-	316	-	-	-	-	12,826	782	-
	Reactor Coolant	163	236		16			-	213	937	937	-	-	229		-	-	-	56,440	5,517	-
	Reactor Hot Sampling	140	126		7			-	132	533	533	-	-	54		-	-	-	22,678	3,686	-
	Reactor Makeup	-	41	-	-	-	-	-	6	47	-	-	47	-	-	-	-	-	-	583	-
	Reactor Makeup - RCA	-	4	0	0			-	2	11	11	-	-	28		-	-	-	1,148	47	-
	Reactor Vessel	9	18		0		5	-	11	47	47	-	-	22		-	-	-	1,816	385	-
	Residual Heat Removal	348	393		86	477	1,102	-	641	3,132	3,132	-	-	2,853	3,244	-	-	-	324,232	7,112	-
	Safeguards Chilled Water Safety Injection	-	5 874		72	1,117	395	-	500	6 3,000	3,000	-	6	6,676	1,161	-	-	-	345,708	75 12,284	-
	Sampling	-	52		2				23	119	119	-	-	37			-	-	7,628	714	-
	Service Bldg & New Cmptr Vent	-	0			-	- 52	-	0	0	-	-	0	-	-	-	-	_	1,020	6	-
	Shield Bldg Ventilation	-	120	13	25	339	163	-	127	787	787	_	-	2,028	484	-	-	-	113,139	1,743	-
	Station & Instrument Air	-	161		-	-	-	-	24	185	-	-	185	-	-	-	-	-	-	2,424	-
	Station & Instrument Air - RCA	-	299		12	272	-	-	118	704	704	-	-	1,625	-	-	-	-	65,986	3,638	-
	Turbine Bldg Traps & Drains	-	30		-	-	-	-	5	35	-	-	35	-	-	-	-	-	-	462	-
	Turbine Bldg Traps & Drains - RCA	-	30		1	. 30	-	-	12	73	73	-	-	180	-	-	-	-	7,321	344	-
	Turbine Bldg Ventilation	-	46		-	-	-	-	7	53	-	-	53	-	-	-	-	-	-	655	-
	Unit Coolers Unit Coolers - RCA	-	23 56		- 2	39	-	-	3 20	26 117	117	-	26	232	-	-	-	-	9,413	332 690	-
	Waste Gas Disposal	553	479		45			-	585	2,581	2,581	-	-	2,453			-	-	187,339	14,308	-
	Waste Liquid Disposal	1,436	1,800		100			-	1,595	6,893	6,893	_	-	3,655		-	-	-	381,754	44,485	-
		115	145		11				140	622	622	-	-	389		-	-	-	41,177	3,481	-
2b.1.1	Totals	3,515	16,542		980				9,399	51,516	48,072	-	3,444	90,963		-	-	-	4,689,210	270,390	-
2b.1.2	Scaffolding in support of decommissioning	-	3,775	27	13	235	37	-	993	5,081	5,081	-	-	1,265	112	-	-	-	64,020	32,837	-
Decontor	nination of Site Buildings																				
2b.1.3.1	Reactor	1,215	2,808	240	1,236	373	13,625	_	4,981	24,479	24,479	-	-	2,230	83,434	_	_	_	3,633,771	50,962	_
2b.1.3.2	Auxiliary	1,292	422		117			-	960	3,639	3,639	-	-	1,060		-	_	-	332,495	23,821	-
2b.1.3.3	Backwash Waste Receiving Tank	-,202	28		17		97		34	179	179	-	-	-	929	-	-	-	43,896	301	-
2b.1.3.4	Drum Transfer & Truck Loading Enclosure	18	9	-	3				16	63	63	-	-	19		-	-	-	7,118	369	-
2b.1.3.5	LLRW Storage Enclosure	123	54		17				103	403	403	-	-	38		-	-	-	44,971	2,426	-
2b.1.3.6	Radwaste	55	24		8	•	10		47	185	185	-	-	42	412	-	-	-	21,136	1,083	-
	Resin Disposal	16	12		3			-	17	76	76	-	-	83		-	-	-	9,271	383	-
2b.1.3	Totals	2,720	3,357	271	1,400	581	14,537	-	6,158	29,024	29,024	-	-	3,471	92,071	-	-	-	4,092,658	79,343	-
2b.1.4	Prepare/submit License Termination Plan	_	_	-	-	_	_	225	34	259	259	_	_	_	_	_	_	_	_	-	1,751
2b.1.5	Receive NRC approval of termination plan							220	01	a	200										1,701
2b.1	Subtotal Period 2b Activity Costs	6,235	23,674	895	2,393	16,035	19,839	225	16,584	85,879	82,435	=	3,444	95,700	107,611	-	-	-	8,845,887	382,570	1,751
Period 2b	Additional Costs																				
2b.2.1	Operational Equipment	-	-	11	36	606	-	-	97	751	751	-	-	5,880	-	-	-	-	147,000	16	-
2b.2.2	Excavation of Underground Services	-	1,175		-	-	-	225		1,728	1,728	-	-	-	-	-	-	-	-	7,411	-
2b.2.3	Security Modifications	-	-	-	-	-	-	4,348		5,000	5,000	-	-	-	-	-	-	-			-
2b.2	Subtotal Period 2b Additional Costs	-	1,175	11	36	606	-	4,573	1,077	7,478	7,478	-	-	5,880	-	-	-	-	147,000	7,427	-

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Table E-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(221		of 2020 Dollars	-,											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Volumes		Burial /		Utility and
Activit		Decon	Removal			Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Pariod 9	Collateral Costs																				
2b.3.1	Process decommissioning water waste	166	-	113	203	-	456	_	239	1,176	1,176	-	-	-	1,047	-	-	-	62,844	204	-
2b.3.2	Process decommissioning chemical flush waste	3	-	119	390	-	893	-	295	1,699	1,699	-	-	-	1,154	-	-	-	122,948		-
2b.3.3	Small tool allowance	-	446	-	-	-	-	-	67	513	513	-	-	-	-	-	-	-	-	-	-
2b.3.4	Spent Fuel Capital and Transfer	-	-	-	-	-	-	51,308	7,696	59,005	-	59,005	-	-	-	-	-	-	-	-	-
2b.3.5	Retention and Severance	-	-	-	-	-	-	2,839	426	3,265	3,265	-	-	-	-	-	-	-	-	-	-
2b.3.6 2b.3.7	Prairie Island Indian Community Payments On-site survey and release of 0.437 tons clean metallic waste	-	-	-	-	-	-	1,348	- 0	1,348	- 1	1,348	-	-	-	-	-	-	-	=	-
2b.3.7 2b.3	Subtotal Period 2b Collateral Costs	169	446	232	592	-	1,349	55,497	8,723	67,007	6,654	60,353	-	-	2,201		-	-	185,792	420	-
							,-	,	-,-	,	-,	,			, -				,		
	Period-Dependent Costs	1.010							907	1 504	1 504										
2b.4.1 2b.4.2	Decon supplies Insurance	1,219	-	-	-	-	-	523	305 52	1,524 575	1,524 575	-	-	-	-	-	-	-	-	-	-
2b.4.2 2b.4.3	Property taxes	-	-	-	-	-	-	3,075	308	3,383	3,383	-	-	-	-	-	-	-	-	-	-
2b.4.4	Health physics supplies	-	2.866	-	-	-	-	-	716	3,582	3,582	-	-	-	-	-	-	-	_	-	-
2b.4.5	Heavy equipment rental	-	2,774	-	-	-	-	-	416	3,190	3,190	-	-	-	-	-	-	-	-	-	-
2b.4.6	Disposal of DAW generated	-	-	103	42	-	429	-	124	698	698	-	-	-	5,209	-	-	-	104,172	170	-
2b.4.7	Plant energy budget	-	-	-	-	-	-	1,313	197	1,509	1,509	-	-	-	-	-	-	-	-	-	-
2b.4.8 2b.4.9	NRC Fees	-	-	-	-	-	-	398 2.006	40 201	438 2,207	438	2,207	-	-	-	-	-	-	-	-	-
2b.4.9 2b.4.10	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	2,006 1.284	201 193	1,477	1,477	2,207	-	-	-	-	-	-	-	-	-
2b.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	456	68	524	1,411	524	-	-	-	-	-	-	-	-	-
2b.4.12	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	229	34	264	264	-	-	-	-	-	-	-	-	-	-
2b.4.13	ISFSI Operating Costs	-	-	-	-	-	-	60	9	69	-	69	-	-	-	-	-	-	-	-	-
2b.4.14	Railroad Track Maintenance	-	-	-	-	-	-	67	10	78	78	-	-	-	-	-	-	-	-	-	-
2b.4.15	Remedial Actions Surveys	-	-	-	-	-	-	1,209	181	1,391	1,391	-	-	-	-	-	-	-	-	-	-
2b.4.16 2b.4.17	Security Staff Cost DOC Staff Cost	-	-	-	-	-	-	8,259 15,117	1,239 2,268	9,497 17,385	9,497 17,385	-	-	-	-	-	-	-	-	=	121,244 163,904
2b.4.17 2b.4.18	Utility Staff Cost	-	-	-	-	-	-	19,642	2,946	22,588	22,588	-	-	-	-	-	-		-	-	304,233
2b.4	Subtotal Period 2b Period-Dependent Costs	1,219	5,640	103	42	-	429	53,639	9,307	70,380	67,579	2,800	-	-	5,209	-	-	-	104,172	170	589,381
		<b>7</b> 200	00.00=	1 0 40	0.000	10041	01.015	110.004		200 544		00.170	0.444	101 200	115.001				0.000.051	200 505	
2b.0	TOTAL PERIOD 2b COST	7,623	30,935	1,242	3,063	16,641	21,617	113,934	35,690	230,744	164,147	63,153	3,444	101,580	115,021	-	-	-	9,282,851	390,587	591,132
PERIO	2d - Decontamination Following Wet Fuel Storage																				
Poriod 9	l Direct Decommissioning Activities																				
2d.1.1	Remove spent fuel racks	347	35	86	41	-	703	-	373	1,585	1,585	-	-	_	2,092	-	-		132,919	576	-
										,	,				,,,,,				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	of Plant Systems																				
2d.1.2.1	Electrical - Contaminated - Fuel Pool	-	203		7	145	11	-	77	445	445	-	-	864		-	-	-	37,167	2,783	-
2d.1.2.2	Electrical - Decontaminated - Fuel Pool	-	1,269		59 2	1,350	-	-	530	3,225	3,225	-	-	8,069		-	-	-	327,668	16,495	-
2d.1.2.3 2d.1.2.4	Fire Protection & Detection - RCA Fuel P HVAC - Contaminated - Fuel Pool	-	37 553		39	48 808	61	-	17 282	105 1,756	105 1,756	-	-	286 4,828		-	-	-	11,622 207,612	476 7,448	-
2d.1.2.5	Safeguards Chilled Water - RCA	-	5		0	4	-	-	202	1,750	1,750	-	-	26		-	-		1.045	7,440	-
2d.1.2.6	Spent Fuel Pool Cooling	32	36		2	6	37	-	36	152	152	-	-	39		-	-	-	8,481	882	-
2d.1.2.7	Spent Fuel Pool Normal Ventilation	-	27		2	44	4	-	15	93	93	-	-	265		-	-	-	11,505	394	-
2d.1.2	Totals	32	2,130	36	112	2,405	113	-	958	5,786	5,786	-	-	14,376	333	-	-	-	605,100	28,530	-
Deconta	nination of Site Buildings																				
2d.1.3.1	Fuel Handling of Aux Building	1,029	1,138	13	45	404	195	_	916	3,741	3,741	-	-	2,417	1,652	-	-	-	177,755	30,404	-
2d.1.3	Totals	1,029	1,138		45	404	195	-	916	3,741	3,741	-	-	2,417		-	-	-	177,755	30,404	-
2d.1.4	Scaffolding in support of decommissioning		755	5	3	47	7		199	1,016	1,016			253	22				12,804	6,567	
		-						-			,	-	-			-	-	-	,	ŕ	-
2d.1	Subtotal Period 2d Activity Costs	1,408	4,058	141	202	2,857	1,018	-	2,445	12,128	12,128	-	-	17,046	4,099	-	-	-	928,579	66,078	-
	l Additional Costs																				
2d.2.1	License Termination Survey Planning	-	-	-	-	-	-	1,037	311	1,348	1,348	-	-	-	-	-	-	-	-	-	6,240
2d.2	Subtotal Period 2d Additional Costs	-	-	-	-	-	-	1,037	311	1,348	1,348	-	-	-	-	-	-	-	-	-	6,240
Period 2	l Collateral Costs																				
2d.3.1	Process decommissioning water waste	45	-	31	56	-	126	-	65	323	323	-	-	_	288	-	-	-	17,293	56	-
2d.3.2	Process decommissioning chemical flush waste	0	-	1	5	-	10	-	3	20	20	-	-	-	13	-	-	-	1,422		-
2d.3.3	Small tool allowance	-	83		-	-	-	-	12	95	95	-	-	-	-	-	-	-	-	-	-
2d.3.4	Decommissioning Equipment Disposition	-	-	130	67	1,112	178	- 055	234	1,722	1,722	-	-	6,000	529	-	-	-	303,608	147	-
2d.3.5 2d.3	Prairie Island Indian Community Payments Subtotal Period 2d Collateral Costs	45	- 83	162	128	1,112	314	975 975	316	975 3,135	2,160	975 975	-	6,000	831	-	-	-	322,324	206	-
2u.ə	Subtotal I eriou zu Collateral Costs	45	63	102	148	1,112	514	919	910	9,199	4,100	979	-	6,000	091	-	-	-	344,324	206	-

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Table E-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(111)	ousunus (	oi 2020 Dollar	-,											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet		Craft Manhours	Contractor Manhours
																			,		
Period 2 2d.4.1	d Period-Dependent Costs Decon supplies	236						_	59	295	295										
2d.4.1 2d.4.2	Insurance	230	-	-	-	-	-	378	38	416	416	-	-	-	-	-	-	-	-	-	-
2d.4.3	Property taxes	-	-	-	-	_	-	2,004	200	2,204	2,204	_	-	_	-	-	_	-	_	_	-
2d.4.4	Health physics supplies	-	794	-	-	-	-	-	198	992	992	-	-	-	-	-	-	-	-	-	-
2d.4.5	Heavy equipment rental	-	2,007		-	-	-	-	301	2,308	2,308	-	-	-		-	-	-		-	-
2d.4.6 2d.4.7	Disposal of DAW generated Plant energy budget	<u> </u>	-	40	16	-	165	506	48 76	268 582	268 582	-	-	-	2,002	-	-	-	40,03	. 65	-
2d.4.7 2d.4.8	NRC Fees		-	-	-	-	-	277	28	305	305	-	-	-	-	-	-	-	-	-	-
2d.4.9	Emergency Planning Fees	-	-	-	-	-	-	58	6	64	-	64	-	-	-	-	-	-	-	-	-
2d.4.10		-	-	-	-	-	-	929	139	1,068	1,068	-	-	-	-	-	-	-	-	-	-
2d.4.11		-	-	-	-	-	-	332	50	381	381	-	-	-	-	-	-	-	-	-	-
2d.4.12 2d.4.13	ISFSI Operating Costs Railroad Track Maintenance	-	-	-	-	-	-	44 49	7 7	50 56	- 56	50	-	-	-	-	-	-	-	-	-
2d.4.13 2d.4.14	Remedial Actions Surveys	-	-	-	-	-	-	875	131	1,006	1,006	-	-	-	-	-		-	-	-	-
2d.4.15		-	-	-	-	-	-	5,782	867	6,649	4,694	1,955	-	-	-	-	-	-	-	-	84,454
2d.4.16		-	-	-	-	-	-	6,401	960	7,361	7,361	-	-	-	-	-	-	-	-	-	70,243
2d.4.17		-	-	-		-	-	8,100	1,215	9,315	8,858	456	-	-	-	-	-	-	-	-	126,681
2d.4	Subtotal Period 2d Period-Dependent Costs	236	2,801	40	16	-	165	25,734	4,330	33,321	30,796	2,525	-	-	2,002	-	-	-	40,03	. 65	281,377
2d.0	TOTAL PERIOD 2d COST	1,689	6,941	343	346	3,969	1,496	27,746	7,403	49,932	46,432	3,501	-	23,046	6,931	-	-	-	1,290,93	66,348	287,617
PERIO	D 2f - License Termination																				
	f Direct Decommissioning Activities																				
2f.1.1	ORISE confirmatory survey	-	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-
2f.1.2 2f.1	Terminate license Subtotal Period 2f Activity Costs	-	-	-	-	-	-	166	50	a 216	216	-	-	-	-	-	-	-	-	-	-
Poriod 9	f Additional Costs																				
2f.2.1	License Termination Survey	-	-	-	-	-	-	7,041	2,112	9,154	9,154	-	_	_	_	_	_	_	_	100,895	3,120
2f.2	Subtotal Period 2f Additional Costs	-	-	-	-	-	-	7,041	2,112	9,154	9,154	-	-	-	-	-	-	-	-	100,895	3,120
D. 1.10	f Collateral Costs																				
2f.3.1	DOC staff relocation expenses							1,264	190	1,454	1,454	-								-	_
2f.3.2	Prairie Island Indian Community Payments	-	-	-	-	-	-	934	-	934	1,404	934	-	-	-	-	-	-	_	-	-
2f.3	Subtotal Period 2f Collateral Costs	-	-	-	-	-	-	2,198	190	2,388	1,454	934	-	-	-	-	-	-	-	-	-
Period 2	f Period-Dependent Costs																				
2f.4.1	Insurance	-	-	-	-	-	-	362	36	398	398	-	-	-	-	-	-	-	-	-	-
2f.4.2	Property taxes	-		-	-	-	-	1,771	177	1,948	1,948	-	-	-	-	-	-	-	-	-	-
2f.4.3 2f.4.4	Health physics supplies Disposal of DAW generated	-	710	- 7	-	-	28	-	178 8	888 45	888 45	-	-	-	334	-	-	-	6,68	11	-
2f.4.5	Plant energy budget		-	. '		, -	- 20	243	36	279	279	-	-	-	-	-	-	-	0,000		-
2f.4.6	NRC Fees	-	-	-	-	-	-	263	26	290	290	-	-	-	-	-	-	-	-	-	-
2f.4.7	Emergency Planning Fees	-	-	-	-	-	-	55	6	61	-	61	-	-	-	-	-	-	-	-	-
2f.4.8	Fixed Overhead	-	-	-	-	-	-	890	133	1,023	1,023	-	-	-	-	-	-	-	-	-	-
2f.4.9 2f.4.10	ISFSI Operating Costs Railroad Track Maintenance	=	-	-	-	-	-	42 47	6 7	48 54	- 54	48	-	-	-	-	-	-	-	-	<del>-</del>
2f.4.10 2f.4.11	Security Staff Cost	-	-	-	-	-	-	5,538	831	6,369	4,497	1,873	-	-	-	-	-	-	-	-	80,898
2f.4.12	DOC Staff Cost	-	-	-	-	-	-	4,238	636	4,874	4,874	-	-	-	-	-	-	-	-	-	46,283
2f.4.13	Utility Staff Cost	-	-	-	-	-	-	4,011	602	4,613	4,175	438	-	-	-	-	-	-	-	-	59,507
2f.4	Subtotal Period 2f Period-Dependent Costs	-	710	7		-	28	17,461	2,682	20,890	18,470	2,420	-	-	334	-	-	-	6,68	11	186,687
2f.0	TOTAL PERIOD 2f COST	-	710	7		-	28	26,867	5,034	32,648	29,294	3,354	-	-	334	-	-	-	6,688	100,906	189,807
PERIO	D 2 TOTALS	10,081	70,482	21,208	7,682	26,615	44,663	266,032	90,058	536,819	439,560	90,851	6,408	163,252	160,871	237	673	-	14,979,540	770,436	1,879,206
PERIO	D 3b - Site Restoration																				
Period 3	b Direct Decommissioning Activities																				
	ion of Remaining Site Buildings																				
	Reactor	-	4,645	-	-	-	-	-	697	5,342	-	-	5,342	-	-	-	-	-	-	44,679	-
3b.1.1.2 3b.1.1.3	Auxiliary Condensate Storage Tank Foundation	=	1,993 7	-	-	-	-	-	299 1	2,291	-	-	2,291	-	-	-	-	-	-	11,902 33	-
	Construction Warehouse & Fab Shop	-	130		-	-	-	-	19	149	-	-	149	-	-	-	-	-	-	1,405	-
	D3/D4 Emergency Generator	-	14		-	-	-	-	2	16	-	-	16	-	-	-	-	-	-	84	-

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Table E-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(The	ousands o	of 2020 Dollar	s)											
<b>_</b>						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Dunial	Volumes		Burial /		Utility and
Activity		Decon	Removal	Packaging	Transpor			Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet		Cu. Feet		Wt., Lbs.	Manhours	Manhours
D122	CD																				
	of Remaining Site Buildings (continued) Orum Transfer & Truck Loading Enclosure	_	20	_	_	_	_	_	3	24	_	_	24	_	_	_	_	_	_	221	_
	Hydrogen House	_	6	_	_	_	_	_	1	7	_	_	7	_	_	_	_	_	_	47	_
	LRW Storage Enclosure	_	128	_	-	-	_	_	19	147	-	_	147	_	_	_	_	_	-	853	-
	Misc Structures 2017	-	2,617		-	-	-	-	393	3,009	-	-	3,009	-	-	-	-	-	-	22,582	-
3b.1.1.10 F	Radwaste	-	176	-	-	-	-	-	26	202	-	-	202	-	-	-	-	-	-	1,400	-
	Resin Disposal	-	14	-	-	-	-	-	2	16	-	-	16	-	-	-	-	-	-	120	-
	Structures below 3' below grade	-	1,785		-	-	-	-	268	2,052	-	-	2,052	-	-	-	-	-	-	9,238	-
	Sulfuric Acid Tank Enclosure	-	3		-	-	-	-	0	4	-	-	4	-	-	-	-	-	-	35	-
3b.1.1.14 T		-	2,140		-	-	-	-	321	2,461	-	-	2,461	-	-	-	-	-	-	21,997	-
	Turbine Pedestal Varehouse #2	-	365 24		-	-	-	-	55	420 27	-	-	420	-	-	-	-	-	-	1,857 213	-
		-	24 7	-	-	-	-	-	4	21	-	-	27 8	-	-	-	-	-	-	213 56	-
	Vaste Neutralizing Tank House Vaste Oil Storage	-	9	-	-	-	-	-	1	10	-	-	10	-	-	-	-	-	-	70	-
	Vaste On Storage Vater Treatment		324		_				49	373	-		373	_	_		_	_		2,690	-
	Fuel Handling of Aux Building	-	1,095		_	-	-	_	164	1,259	-	-	1,259	_	_	-	-	_	-	8,240	-
	Cotals	-	15,501		_	-	-	_	2,325	17,826	-	-	17,826	-	-	-	_	_	-	127,723	-
			-,						,	-,-										.,	
Site Closeou																					
	Remove Rubble	-	1,330		-	-	-	-	200	1,530	-	-	1,530	-	-	-	-	-	-	6,495	-
	Grade & landscape site	-	448	-	-	-	-	-	67	515	-	-	515	-	-	-	-	-	-	921	-
	Final report to NRC	-	15.050	-	-	-	-	86	13	99	99	-	10.051	-	-	-	-	-	-	107 100	667
3b.1 S	Subtotal Period 3b Activity Costs	-	17,279	-	-	-	-	86	2,605	19,969	99	-	19,871	-	-	-	-	-	-	135,138	667
Period 3b A	dditional Costs																				
	Clean Concrete Disposal	-	4,912	-	_	-	-	10	738	5,660	-	-	5,660	-	_	-	-	-	-	18,372	-
3b.2.2 I	ntake Structure Cofferdam	-	442	-	-	-	-	-	66	508	-	-	508	-	-	-	-	-	-	3,552	-
3b.2.3	Construction Debris	-	-	-	-	-	-	2,150	323	2,473	-	-	2,473	-	-	-	-	-	-	-	-
	Backfill	-	9,257		-	-	-	-	1,388	10,645	-	-	10,645	-	-	-	-	-	-	9,327	-
	Disposition of Original Casks	-	24				2,390	-	728	3,640	3,640	-	-	-	8,929	-	-	-	1,059,612		-
3b.2 S	Subtotal Period 3b Additional Costs	-	14,634	80	41	.8 -	2,390	2,160	3,244	22,926	3,640	-	19,286	-	8,929	-	-	-	1,059,612	31,397	-
Period 3h Co	ollateral Costs																				
	Small tool allowance	-	212	-	-	-	-	-	32	244	-	-	244	-	-	-	-	-	-	-	-
3b.3.2 F	Prairie Island Indian Community Payments	-	-	-	-	-	-	2,649	-	2,649	-	2,649	-	-	-	-	-	-	-	-	-
3b.3 S	Subtotal Period 3b Collateral Costs	-	212	-	-	-	-	2,649	32	2,893	-	2,649	244	-	-	-	-	-	-	-	-
Dowind 9h Do	eriod-Dependent Costs																				
	nsurance							513	51	565	565										
	Property taxes	-	-	-	-	-	-	4,167	417	4,583	-	4,583	-	-	-	-	-	-	-	-	-
	Heavy equipment rental	_	7,144	_	-	-	_	-,101	1,072	8,215	-	-,500	8,215	_	_	_	_	_	-	-	-
	Plant energy budget	_		-	_	-	_	344	52	395	_	395	-,	_	_	_	-	_	-	-	-
	NRC ISFSI Fees	-	-	-	-	-	-	218	22	239	-	239	-	-	-	-	-	-	-	-	-
3b.4.6 E	Emergency Planning Fees	-	-	-	-	-	-	157	16	173	-	173	-	-	-	-	-	-	-	-	-
3b.4.7 F	Fixed Overhead	-	-	-	-	-	-	1,024	154	1,178	397	781	-	-	-	-	-	-	-	-	-
	SFSI Operating Costs	-	-	-	-	-	-	119	18	136	-	136	-	-	-	-	-	-	-	-	-
	Railroad Track Maintenance	-	-	-	-	-	-	361	54	416	153	263	-	-	-	-	-	-	-	-	-
	Security Staff Cost	-	-	-	-	-	-	4,616	692	5,308	-	5,308	-	-	-	-	-	-	-	-	57,340
	OOC Staff Cost	-	-	-	-	-	-	10,921	1,638	12,559	-		12,559	-	-	-	-	-	-	-	116,885
	Jtility Staff Cost	-		-	-	-	-	5,170	776	5,946	-	1,278		-	-	-	-	-	-	-	76,637
3b.4 S	Subtotal Period 3b Period-Dependent Costs	-	7,144	-	-	-	-	27,610	4,960	39,714	1,114	13,158	25,442	-	-	-	-	-	-	-	250,861
3b.0 T	TOTAL PERIOD 3b COST	-	39,269	80	41	8 -	2,390	32,505	10,840	85,502	4,853	15,807	64,843	-	8,929	-	-	-	1,059,612	166,534	251,528
PERIOD 3	c - Fuel Storage Operations/Shipping																				
Period 3c Di	irect Decommissioning Activities																				
Period 3c Co	ollateral Costs																				
	Spent Fuel Capital and Transfer	-	-	-	-	=	-	270,755	40,613	311,368	-	311,368	-	-	-	-	-	-	-	-	-
	Prairie Island Indian Community Payments	-	-	-	-	-	-	94,360	-	94,360	-	94,360	-	-	-	-	-	-	-	-	-
3c.3 S	Subtotal Period 3c Collateral Costs	-	-	-	-	-	-	365,115	40,613	405,728	-	405,728	-	-	-	-	-	-	-	-	-

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Table E-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(111	ousumus c	or 2020 Domars	-,											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity	A state Domination	Decon		Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Period 3c I	Period-Dependent Costs																				
	Insurance	-	-	-	-	-	-	18,290	1,829	20,119	-	20,119	-	-	-	-	-	-	-	-	-
	Property taxes	-	-	-	-	-	-	104,580	10,458	115,038	-	115,038	-	-	-	-	-	-	-	-	-
	NRC ISFSI Fees	-	-	-	-	-	-	9,306 5,600	931 560	10,237	-	10,237	-	-	-	-	-	-	-	-	-
	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	12,308	1,846	6,160 14,155	-	6,160 14,155	-	-	-	-	-	-	-	-	-
	ISFSI Operating Costs		-	-	-	-	-	4,228	634	4,862	-	4,862	-	-	-	-	-	-	-	-	-
	Railroad Track Maintenance	-	_	-	_	-	-	4,723	708	5,431	_	5,431	-	_	-	_	-	-	-	-	_
	Security Staff Cost	-	-	-	-	-	-	164,428	24,664	189,092	-	189,092	-	-	-	-	-	-	-	-	2,042,594
	DOC Staff Cost	-	-	-	-	-	-	11,579	1,737	13,316	-	13,316	-	-	-	-	-	-	-	-	78,561
	Utility Staff Cost	-	-	-	-	-	-	71,292	10,694	81,986	-	81,986	-	-	-	-	-	-	-	-	1,040,937
3c.4	Subtotal Period 3c Period-Dependent Costs	-	-	-	-	-	-	406,334	54,061	460,395	-	460,395	-	-	-	-	-	-	-	-	3,162,093
3c.0	TOTAL PERIOD 3c COST	-	-	-	-	-	-	771,448	94,674	866,123	-	866,123	-	-	-	-	-	-	-	-	3,162,093
PERIOD	3d - GTCC shipping																				
Period 3d	Direct Decommissioning Activities																				
	team Supply System Removal																				
	Vessel & Internals GTCC Disposal	-	-	1,444		-	8,680	-	1,663	11,787	11,787	-	-	-	-	-	-	1,773	344,823	-	-
	Totals	=	-	1,444		-	8,680		1,663	11,787	11,787	-	-	-	-	-	-	1,773	344,823	-	-
3d.1	Subtotal Period 3d Activity Costs	-	-	1,444	-	-	8,680	-	1,663	11,787	11,787	-	-	-	-	-	-	1,773	344,823	-	-
	Collateral Costs																				
	Spent Fuel Capital and Transfer	-	-	-	-	-	-	28	4	32	-	32	-	-	-	-	-	-	-	-	-
3d.3.2	Prairie Island Indian Community Payments Subtotal Period 3d Collateral Costs	-	-	-	-	-	-	48 76	- 4	48 80	-	48 80		-	-	-	-	-	-	-	-
		-	-	-	-	-	-	76	4	80	-	80	-	-	-	-	-	-	-	-	-
	Period-Dependent Costs							9	1	10	10										
	Insurance Property taxes	-	-	-	-	-	-	53	5	58	58	-	-	-	-	-	-	-	-	-	-
	NRC ISFSI Fees	-	-	-	-	-	-	4	0	4	-	4	-	-	-	-	-	-	-	-	-
	Emergency Planning Fees	-	-	-	-	-	-	3	0	3	-	3	-	-	-	-	-	-	-	-	-
3d.4.6	Fixed Overhead	=	-	-	-	-	-	6	1	7	7	-	-	-	-	-	-	-	-	-	-
	Railroad Track Maintenance	-	-	-	-	-	-	2	0	3	3	-	-	-	-	-	-	-	-	-	-
	Security Staff Cost	-	-	-	-	-	-	83	13	96	96	-	-	-	-	-	-	-	-	-	1,037
	Utility Staff Cost	Ē	-	-	-	-	-	19 181	3 24	22 204	22 197	7	-	-	-	-	-	-	-	-	269 1,306
3d.4	Subtotal Period 3d Period-Dependent Costs	-	-	-	-	-	-	181	24	204	197	1	-	-	-	-	-	-	-	-	1,306
3d.0	TOTAL PERIOD 3d COST	-	-	1,444	-	-	8,680	256	1,691	12,071	11,984	87	-	-	-	-	-	1,773	344,823	-	1,306
PERIOD	3e - ISFSI Decontamination																				
Period 3e l	Direct Decommissioning Activities																				
	Additional Costs																				
	License Termination ISFSI	-		2		7 -	142		339	1,696	1,696	-	-	-	424	-	-	-	65,754	5,882	
3e.2	Subtotal Period 3e Additional Costs	-	(	) 2	1	7 -	142	1,197	339	1,696	1,696	-	-	-	424	-	-	-	65,754	5,882	1,161
	Period-Dependent Costs																				
	Insurance	-	-	-	-	-	-	93	23	116	116	-	-	-	-	-	-	-	-	-	-
	Property taxes	-	-	-	-	-	-	56 11	14	69 13	69 13	-	-	-	-	-	-	-	-	-	-
	Plant energy budget Fixed Overhead	-	-	-	-	-	-	54	3 14	13 68	13 68	-	-	-	-	-	-		-	-	-
	Railroad Track Maintenance	-	-	-	-	-	-	21	5	26	26	-	-	-	-		-		-	-	-
	Security Staff Cost	-	_	-	_	-	-	174	43	217	217	-	-	_	-	-	-		_	-	2,500
	Utility Staff Cost	-	-	-	-	-	-	129	32	161	161	-	-	-	-	-	-		-	-	1,896
3e.4	Subtotal Period 3e Period-Dependent Costs	-	-	-	-	-	-	536	134	670	670	-	-	-	-	-	-	-	-	-	4,396
3e.0	TOTAL PERIOD 3e COST	_	(	) 2	. 1	7 -	142	1,733	473	2,367	2,367	_	_	-	424	_	_	-	65,754	5,882	5,556
			,				1-12	1,.00	110	=,001	_,501				12-1				00,.01	0,000	5,000

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

Table E-2 Prairie Island DECON Unit 2 DECON Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage (Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity		Decon	Removal	Packaging	Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
PERIOI	3f - ISFSI Site Restoration																				
Period 3f	Direct Decommissioning Activities																				
Period 3f	Additional Costs																				
3f.2.1	Demolition and Site Restoration of ISFSI	=	1,121	-	-	-	-	161	192	1,474	-	-	1,474	-	-	-	-	-	-	4,846	80
3f.2	Subtotal Period 3f Additional Costs	-	1,121	-	-	-	-	161	192	1,474	-	-	1,474	-	-	-	-	-	-	4,846	80
Period 3f	Collateral Costs																				
3f.3.1	Small tool allowance	-	7	-	-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	-	-
3f.3	Subtotal Period 3f Collateral Costs	-	7	-	-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	-	-
Period 3f	Period-Dependent Costs																				
3f.4.2	Property taxes	-	-	-	-	-	-	28	3	31	-	-	31	-	-	-	-	-	-	-	-
3f.4.3	Heavy equipment rental	-	59	-	-	-	-	-	9	68	-	-	68	-	-	-	-	-	-	-	-
3f.4.4	Plant energy budget	-	-	-	-	-	-	6	1	6	-	-	6	-	-	-	-	-	-	-	-
3f.4.5	Fixed Overhead	-	-	-	-	-	-	28	4	32	-	-	32	-	-	-	-	-	-	-	-
3f.4.6	Railroad Track Maintenance	-	-	-	-	-	-	11	2	12		-	12	-	-	-	-	-	-	-	-
3f.4.7	Security Staff Cost	-	-	-	-	-	-	89	13		-	-	102	-	-	-	-	-	-	-	1,281
3f.4.8	Utility Staff Cost	-	-	-	-	-	-	55	8	63	-	-	63	-	-	-	-	-	-	-	795
3f.4	Subtotal Period 3f Period-Dependent Costs	-	59	-	-	-	-	216	40	315	-	-	315	-	-	-	-	-	-	-	2,076
3f.0	TOTAL PERIOD 3f COST	-	1,187	-	-	-	-	377	233	1,798	-	-	1,798	-	-	-	-	-	-	4,846	2,156
PERIOI	3 TOTALS	-	40,456	1,525	435	-	11,212	806,320	107,912	967,861	19,203	882,017	66,641	-	9,353	-	-	1,773	1,470,189	177,262	3,422,639
TOTAL (	COST TO DECOMMISSION	13,876	116,855	23,184	8,596	26,793	61,273	1,178,883	216,817	1,646,275	591,409	981,137	73,730	169,384	184,108	826	673	1,773	17,058,250	981,176	6,101,073

TOTAL COST TO DECOMMISSION WITH 15.17% CONTINGENCY:	\$1,646,275	thousands of 2020 dollars
TOTAL NRC LICENSE TERMINATION COST IS 35.92% OR:	\$591,409	thousands of 2020 dollars
SPENT FUEL MANAGEMENT COST IS 59.6% OR:	\$981,137	thousands of 2020 dollars
NON-NUCLEAR DEMOLITION COST IS 4.48% OR:	\$73,730	thousands of 2020 dollars
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	185,606	Cubic Feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	1,773	Cubic Feet
TOTAL SCRAP METAL REMOVED:	42,328	Tons
TOTAL CRAFT LABOR REQUIREMENTS:	981,176	Man-hours

End Notes: n/a - indicates that this activity not charged as decommissioning expense a - indicates that this activity performed by decommissioning staff 0 - indicates that this value is less than 0.5 but is non-zero A cell containing " - " indicates a zero value

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis Document X01-1775-001, Rev. 0 Appendix F, Page 1 of 20

#### APPENDIX F

#### **DETAILED COST ANALYSIS**

#### **SCENARIO 4: DECON with 200 Year DFS**

	Page
Prairie Island Nuclear Generating Plant, Unit 1	F-2
Prairie Island Nuclear Generating Plant, Unit 2	F-11

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

## Table F-1 Prairie Island DECON Unit 1 DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage (Thousands of 2020 Dollars)

							(Tl	ousands	of 2020 Dollar	s)											
				D 1 1		Off-Site	LLRW	0.1			NRC	Spent Fuel	Site	Processed			Volumes	amaa	Burial /		Utility and
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
PERIOD 1a	a - Shutdown through Transition																				
	irect Decommissioning Activities																				
	Prepare preliminary decommissioning cost Notification of Cessation of Operations	-	-	-	-	-	-	167	25	192 a	192	-	-	-	-	-	-	-	-	-	1,300
1a.1.3 R	Remove fuel & source material									n/a											
	Notification of Permanent Defueling Deactivate plant systems & process waste									a a											
	Prepare and submit PSDAR	-	_	-	-	-	-	257	39	296	296	-	-	-	-	-	-	-	-	-	2,000
	Review plant dwgs & specs.	-	-	-	-	-	-	591	89	680	680	-	-	-	-	-	-	-	-	-	4,600
	Perform detailed rad survey Estimate by-product inventory	-	_	-	_	-	-	129	19	a 148	148	-	-	-	_	-	-	_	-	-	1,000
1a.1.10 E	End product description	-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	1,000
	Detailed by-product inventory Define major work sequence	-	-	-	-	-	-	167 964	25 145	192 1,108	192 1,108	-	-	-	-	-	-	-	-	-	1,300 7,500
1a.1.13 P	Perform SER and EA	-	-	-	-	-	-	398	60	458	458	-	-	-	-	-	-	-	-	-	3,100
1a.1.14 P	Prepare/submit Defueled Technical Specifications	=	-	-	-	-	-	964	145	1,108	1,108	-	-	-	-	-	-	-	=	-	7,500
1a.1.15 P 1a.1.16 P	Perform Site-Specific Cost Study Prepare/submit Irradiated Fuel Management Plan	-	-	-	-	-	-	643 129	96 19	739 148	739 148	-	-	-	-	-	-	-	-	-	5,000 1,000
Activity Spe								222		===											
	Plant & temporary facilities Plant systems	-	-	-	-	-	-	632 536	95 80	727 616	654 554	-	73 62	-	-	-	-	-	-	-	4,920 4,167
1a.1.17.3 N	NSSS Decontamination Flush	-	-	-	-	-	-	64	10	74	74	-	-	-	-	-	-	-	-	-	500
	Reactor internals Reactor vessel	-	-	-	-	-	-	912 835	137 125	1,049 961	1,049 961	-	-	-	-	-	-	-	-	-	7,100 6,500
	Biological shield	-		-	-	-	-	64	10	74	74	-	-		-	-	-	-	-		500
1a.1.17.7 S	Steam generators	-	-	-	-	-	-	401	60	461	461	-	-	-	-	-	-	-	-	-	3,120
	Reinforced concrete Main Turbine	-	-	-	-	-	-	206 51	31 8	236 59	118	-	118 59	-	-	-	-	-	-	-	1,600 400
1a.1.17.10 M	Main Condensers	-	-	-	-	-	-	51	8	59	-	-	59	-	-	-	-	-	-	-	400
	Plant structures & buildings	-	-	-	-	-	-	401	60	461	231	-	231	-	-	-	-	-	-	-	3,120
	Vaste management Facility & site closeout	-	-	-	-	-	-	591 116	89 17	680 133	680 67	-	67		-	-	-	-	-	-	4,600 900
1a.1.17 T		-	-	-	-	-	-	4,861	729	5,591	4,923	-	668	-	-	-	-	-	-	-	37,827
	Site Preparations																				
	Prepare dismantling sequence	-	-	-	-	-	-	308 3,500	46 525	355 $4,025$	355 4,025	-	-	-	-	-	-	-	-	-	2,400
	Plant prep. & temp. svces Design water clean-up system	-	-	-	-	-	-	180	27	207	207	-	-		-	-	-	-	-	-	1,400
	Rigging/Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,400	360	2,760	2,760	-	-	-	-	-	-	-	-	-	
	Procure casks/liners & containers Subtotal Period 1a Activity Costs	-	-	-	-	-	-	158 15,945	24 2,392	182 18,336	182 17,669	-	668	-	-	-	-	-	-	-	1,230 78,157
	dditional Costs							-,-	,	-,	.,										,
1a.2.1 S	Spent Fuel Pool Isolation	-	-	-	-	-	-	12,675	1,901	14,576	14,576	-	-	-	-	-	-	-	-	-	-
1a.2 S	Subtotal Period 1a Additional Costs	-	-	-	-	-	-	12,675	1,901	14,576	14,576	-	-	-	-	-	-	-	-	-	-
	ollateral Costs Prairie Island Indian Community Payments							1.040		1.040		1.040									
	Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	1,249 1,249	-	1,249 1,249	-	1,249 1,249	-	-	-	-	-	-	-	-	-
	eriod-Dependent Costs																				
	nsurance Property taxes	-	-	-	-	-	-	1,660 3,623	166 362	1,826 3,985	1,826 3,985	-	<del>-</del>	-	-	-	-	-	-	-	-
	Health physics supplies	-	614		-	-	-	- 5,025	153	767	767	-	-	-	-	-	-	-	-	-	-
1a.4.4 H	Heavy equipment rental	-	753			-	-	-	113	866	866	-	-	-	-	-	-	-	-	-	-
	Disposal of DAW generated Plant energy budget	-	-	12	5	-	50	1,621	14 243	82 1,864	82 1,864	-	-	-	610	-	-	-	12,190	20	-
1a.4.7 N	VRC Fees	-	-	-	-	-	-	1,137	114	1,251	1,251	-	-	-	-	-	-	-	-	-	-
	Emergency Planning Fees Fixed Overhead	÷	-	-	-	-	-	2,174	217 216	2,392 1,656	1,656	2,392	-	-	-	-	-	-	-	-	-
	Fixed Overhead Spent Fuel Pool O&M	-	-	-	-	-	-	1,440 $422$	63	1,656	1,656	486	-	-	-	-	-	-	-	-	-
1a.4.11 IS	SFSI Operating Costs	-	-	-	-	-	-	56	8	64	-	64	-	-	-	-	-	-	-	-	-
	Railroad Track Maintenance Security Staff Cost	<del>-</del>	-	-	-	-	-	63 8,328	9 1,249	$\frac{72}{9,577}$	72 9,577	-	-	-	-	-	-	-	-	-	122,720
1a.4.14 U	Jtility Staff Cost	-	-	-		-	-	26,931	4,040	30,971	30,971	-	-	-	-	-	-	-	-	-	422,240
1a.4 S	Subtotal Period 1a Period-Dependent Costs	-	1,367	12	5	-	50	47,456	6,970	55,860	52,918	2,942	-	-	610	-	-	-	12,190	20	544,960

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Table F-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							<b>\</b>		or 2020 Dona	/											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial/		Utility and
Activit Index		Decon Cost	Removal Cost	Packaging Costs	g Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
1a.0	TOTAL PERIOD 1a COST	-	1,367	1:	2 5		50	77,325	11,263	90,022	85,163	4,191	668	-	610	-	-	-	12,190	20	623,117
PERIO	D 1b - Decommissioning Preparations																				
Period 1	b Direct Decommissioning Activities																				
	l Work Procedures																				
	Plant systems	-	-	-	-	-	-	608	91	700	630	-	70	-	-	-	-	-	-	-	4,733
	NSSS Decontamination Flush	-	-	-	-	-	-	129	19 48	148 369	148 369	-	-	-	-	-	-	-	-	-	1,000
	Reactor internals Remaining buildings	-	-	-	-	-	-	321 174	48 26	200	50	-	150	-	-	-	-	-	-	-	2,500 1,350
	CRD cooling assembly	-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	1,000
1b.1.1.6		-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	1,000
1b.1.1.7		-	-	-	-	-	-	129	19		148	-	-	-	-	-	-	-	-	-	1,00
1b.1.1.8	Reactor vessel Facility closeout	-	-	-	-	-	-	467 154	70 23	537 177	537 89	-	- 00	-	-	-	-	-	-	-	3,630 1,200
	0 Missile shields	-	-	-	-	-		154 58	9	67	67	-	- 69	_	-	-	-		-	-	1,20
	1 Biological shield	_	_	-	_	-	-	154	23		177	-	-	-	_	_	_	_	-	_	1,200
	2 Steam generators	-	-	-	-	-	-	591	89	680	680	-	-	-	-	-	-	-	-	-	4,600
	3 Reinforced concrete	-	-	-	-	-	-	129	19	148	74	-	74	-	-	-	-	-	-	-	1,000
	4 Main Turbine	-	-	-	-	-	-	200	30	231	-	-	231	-	-	-	-	-	-	-	1,560
	5 Main Condensers 6 Auxiliary building	=	-	-	-	-	-	200 351	30 53	231 403	363	-	231 40	-	-	-	-	-	-	-	1,560 2,730
	7 Reactor building	-	-	-	-	-	-	351	53 53	403	363	-	40 40	-	-	-	-	-	-	-	2,730
1b.1.1	Total	-	-	-	-	=	-	4,272	641	4,913	3,989	-	924	-	-	-	-	-	-	-	33,243
1b.1.2 1b.1	Decon primary loop Subtotal Period 1b Activity Costs	572 572		-	-	- -	-	4,272	286 927	859 5,772	859 4,848	-	924	- -	- -	- -	-	-	-	1,067 1,067	
Period 1	b Additional Costs																				
1b.2.1	Site Characterization	-	-	-	-	-	-	3,520	1,056	4,576	4,576	-	-	-	-	-	-	-	-	21,020	8,332
1b.2.2	Mixed/Hazardous Waste	-	-	35			-	-	76		702	-	-	6,132		-	-	-	351,977	2,348	-
1b.2.3	Asbestos Abatement	-	2,526				1,369	-	996	5,044	5,044	-	-		12,843		-	-	166,959	20,907	
1b.2	Subtotal Period 1b Additional Costs	-	2,526	35	6 244	178	1,369	3,520	2,129	10,321	10,321	-	-	6,132	12,843	-	-	-	518,936	44,275	8,332
Period 1 1b.3.1	b Collateral Costs Decon equipment	1,055	_		-		_		158	1,213	1,213								_	-	
1b.3.1	DOC staff relocation expenses	1,055	_	-	-	-	-	1,264	190		1,454	-	-	-	-	-	-		-	_	-
1b.3.3	Process decommissioning water waste	25		1	6 29		66	-,	35		172	-	-	-	152	-	-	-	9,127	30	-
1b.3.4	Process decommissioning chemical flush waste	2		6	1 199	-	3,889	-	1,009		5,159	-	-	-	-	588	-	-	62,689	110	-
1b.3.5	Small tool allowance	-	36		-	-	-	-	5		42	-	-	-	-	-	-	-	-	-	-
1b.3.6 1b.3.7	Pipe cutting equipment	9 104	1,200	-	-	-	-	-	180 316		1,380	-	-	-	-	-	-	-	-	-	-
1b.3.7 1b.3.8	Decon rig Spent Fuel Capital and Transfer	2,104	-	-	-	-	-	163	25		2,419	188		-	-	-	-		-	-	-
1b.3.9	Retention and Severance	_	_	-	_	-	-	1,032	155		1,187	-	-	-	_	_	_	_	-	_	-
1b.3.10	Prairie Island Indian Community Payments	-	-	-	-	-	-	623	-	623	-	623	-	-	-	-	-	-	-	-	-
1b.3	Subtotal Period 1b Collateral Costs	3,185	1,236	7	7 228	-	3,955	3,082	2,072	13,836	13,025	811	-	-	152	588	-	-	71,815	140	-
	b Period-Dependent Costs	90								45											
1b.4.1 1b.4.2	Decon supplies Insurance	38		-	-	-	-	828	9 83	47 910	47 910	-	-	-	-	-	-	-	-	-	-
1b.4.2 1b.4.3	Property taxes	-	-	-	-	-	-	1,806	181	1,987	1,987	-	-	-	-	-	-	-	-	-	-
1b.4.4	Health physics supplies	-	475	-	-	-	-	-,	119		594	-	-	-	-	-	-	-	-	-	-
1b.4.5	Heavy equipment rental	-	375	-	-	-	-	-	56	432	432	-	-	-	-	-	-	-	-	-	-
1b.4.6	Disposal of DAW generated	-	-		7 3	-	29	-	8		48	-	-	-	356	-	-	-	7,122	12	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	1,617	243	1,859	1,859	-	-	-	-	-	-	-	-	-	-
1b.4.8 1b.4.9	NRC Fees Emergency Planning Fees	<u>-</u>	-	-	-	-	-	323 1,084	32 108	355 1,193	355	1,193	-	-	-	-	-	-	-	-	-
1b.4.10	Fixed Overhead	-			-	-	-	718	108	826	826	1,133	-	-	-	-		-	-		-
1b.4.11		-	-	-	-	-	-	211	32		-	242	-	-	-	-	-	-	-	-	-
1b.4.12		-	-	-	-	-	-	28	4	32	-	32	-	-	-	-	-	-	-	-	-
1b.4.13		-	-	-	-	-	-	31	5	36	36	-	-	-	-	-	-	-	-	-	-
1b.4.14		-	-	-	-	-	-	4,153 5,846	623 877	4,775 6,723	4,775 6,723	-	-	-	-	-	-	-	-	-	61,192 63,266
1b.4.15 1b.4.16		-	-	-	-	-	-	13,505	2,026	6,723 15,531	6,723 15,531	-	-	-	-	-	-	-	-	-	63,266 211,579
1b.4.10	Subtotal Period 1b Period-Dependent Costs	38	851	-	7 3	-	29	30,149	4,513	35,590	34,123	1,467	-	-	356	-	-	-	7,122	12	
1b.0	TOTAL PERIOD 1b COST	3,795	4,613	44	0 475	178	5,354	41,023	9,641	65,519	62,317	2,278	924	6,132	13,351	588	_	_	597,873	45,493	377,612

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Table F-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

						(Tł	nousands	of 2020 Dollaı	rs)											
					Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity	Decon	Removal	Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
PERIOD 1 TOTALS	3,795	5,980	452	480	178	5,404	118,348	20,903	155,540	147,480	6,468	1,592	6,132	13,961	588	-	-	610,063	45,513	1,000,729
PERIOD 2a - Large Component Removal																				
Period 2a Direct Decommissioning Activities																				
Nuclear Steam Supply System Removal			10			105		00	40.0	100				<b>*</b> 00				0.5.411	1 401	
2a.1.1.1 Reactor Coolant Piping 2a.1.1.2 Pressurizer Relief Tank	54 24	47 21	10			187 125	-	89 51	406 238	406 238	-	-		508 338		-	-	35,411 23,594	1,421 630	-
2a.1.1.3 Reactor Coolant Pumps & Motors	57	68	110	93	-	463	-	186	977	977	-	-	-	2,332	-	-	-	295,800	2,049	100
2a.1.1.4 Pressurizer 2a.1.1.5 Steam Generators	-	77 3,307	503 2,269			776 4,001	-	278 2,681	1,732 16,437	1,732 16,437	-	-	18,672	2,196 11,316		-	-	185,015 1,689,435	1,666 11,613	938 2,875
2a.1.1.6 CRDMs/ICIs/Service Structure Removal	302	281	2,203			938	-	488	2,294	2,294	-	-	10,072	4,797	-	-	-	177,400	8,104	2,070
2a.1.1.7 Reactor Vessel Internals	82	4,861	13,621			9,015	307	11,878		40,693	-	-	-	501	125			164,987	25,123	1,163
2a.1.1.8 Reactor Vessel 2a.1.1 Totals	94 613	6,046 14,709	2,028 18,764			2,975 18,480	307 614	6,804 22,455	18,982 81,759	18,982 81,759	-	-	18,672	8,073 30,062		673	-	576,524 3,148,166	25,123 75,729	1,163 6,240
	010	14,700	10,104	0,111	2,400	10,400	014	22,400	01,700	01,100			10,012	50,002	120	010		6,140,100	10,120	0,240
Removal of Major Equipment 2a.1.2 Main Turbine/Generator	-	331	172	2 64	527	377	_	283	1,752	1,752	-	-	2,131	1,187	-	-	-	203,265	4,667	-
2a.1.3 Main Condensers	-	2,801	109	62	705	533	-	960	5,170	5,170	-	-	3,800	1,587	-	-	-	271,824	39,151	-
Cascading Costs from Clean Building Demolition 2a.1.4.1 Reactor		794						119	913	913									7,589	_
2a.1.4.1 Reactor 2a.1.4 Totals	-	794	-	-	-	-	-	119		913	-	-	-	-	-	-	-	-	7,589	-
Disposal of Plant Systems																				
2a.1.5.1 Air Removal	-	31	-	-	-	-	-	5 7	36	-	-	36	-	-	-	-	-	-	452	-
2a.1.5.2 Auxiliary Feedwater 2a.1.5.3 Auxiliary Feedwater - RCA	-	46 47	- 0	2	36			17	53 102	102	-	53	215	-		-	-	8,722	670 601	-
2a.1.5.4 Bleed Steam	-	90	-	· -	-	-	-	14	104	-	-	104		-	-	-	-	-	1,335	-
2a.1.5.5 Caustic Addition - RCA	-	38	0	2	39	-	-	16	95	95	-	-	233	-	-	-	-	9,453	444	-
2a.1.5.6 Chemical Feed 2a.1.5.7 Chemical Feed - RCA	-	20	- 0	. 0	. 1	-	-	3	23	- 3	-	23	- 6	-	-	-	-	243	304 12	-
2a.1.5.8 Circulating Water	-	42	-	-	-	-	-	6	49	-	-	49	-	-	-	-	-	-	619	-
2a.1.5.9 Condensate	-	474	-	-	-	-	-	71	545	-	-	545	-	-	-	-	-	-	6,837	-
2a.1.5.10 Condensate Polishing 2a.1.5.11 Condensate Polishing - RCA	-	235 183	- 4	- l 15	348	-	-	35 101	271 651	651	-	271	2,078	-	-	-	-	84,395	3,420 2,329	-
2a.1.5.12 Electro-hydraulic	-	9		-	-	-	-	1	10	-	-	10		-	-	-	-	-	127	-
2a.1.5.13 Feedwater	-	153			-	-	-	23	175	-	-	175		-	-	-	-	-	2,215	-
2a.1.5.14 Feedwater - RCA 2a.1.5.15 Gland Seal	-	195 34	7	24	537			133 5	895 39	895	-	39	3,208	-		-	-	130,294	2,651 505	-
2a.1.5.16 Heater Drain	-	400	-	-	-	-	-	60		-	-	460	_	-	-	-	-	-	5,881	-
2a.1.5.17 Internal Circ Water & CDSR	-	27	-	-	-	-	-	4	31	-	-	31	-	-	-	-	-	-	389	-
2a.1.5.18 Main Gen/Exciter/Transformer 2a.1.5.19 Main Steam	-	0 115	-	-	-	-	-	0 17	0 133	-	-	0 133		-	-	-	-	-	5 1,690	-
2a.1.5.20 Main Steam - RCA	-	366	10	37	844	-	-	225	1,482	1,482	-	-	5,044	-	-	-	-	204,825	4,956	-
2a.1.5.21 Steam Generator Blowdown	-	478	22	29	340	234	-	235	1,337	1,337	-		2,031	686	-	-	-	126,640	6,667	-
2a.1.5.22 Steam Generators 2a.1.5.23 Turbine & Moisture Separators	-	5 386	-	-	-	-	-	1 58	6 444	-	-	6 444	-	-	-	-	-	-	75 5,609	-
2a.1.5.24 Turbine Oil Purification	-	70	-	-	-	-	-	11	81	-	-	81	-	-	-	_	-	-	1,003	-
2a.1.5 Totals	-	3,445	44	108	2,144	234	-	1,048	7,023	4,565	-	2,458	12,815	686	-	-	-	564,572	48,794	-
2a.1.6 Scaffolding in support of decommissioning	-	930	3	3 1	26	4	-	238	1,202	1,202	-	-	138	12	-	-	-	6,985	6,368	-
2a.1 Subtotal Period 2a Activity Costs	613	23,011	19,092	3,950	5,810	19,628	614	25,102	97,819	95,362	-	2,458	37,556	33,533	125	673	-	4,194,811	182,298	6,240
Period 2a Additional Costs		^*=	00=	,		1.00:		10:	0.000	0.000				050	••~			#0.10:	0.000	100
2a.2.1 Retired RPV Upper Internals Package 2a.2 Subtotal Period 2a Additional Costs	-	257 257	387 387			1,394 1,394	-	1,041 1,041		3,296 3,296	-	-	-	376 376			-	50,164 $50,164$	3,333 3,333	133 133
Period 2a Collateral Costs																				
2a.3.1 Process decommissioning water waste 2a.3.2 Process decommissioning chemical flush waste	48	-	32	58	-	130	-	68	337	337	-	-	-	299	-	-	-	17,968	58	-
2a.3.2 Process decommissioning chemical flush waste 2a.3.3 Small tool allowance	-	239	-		-	-	-	36	274	247	-	27	-	-	-	-	-	-	-	-
2a.3.4 Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,639	246	1,885	-	1,885		-	-	-	-	-	-	-	-
2a.3.5 Retention and Severance 2a.3.6 Prairie Island Indian Community Payments	-	-	-	-	-	-	12,780 1,780	1,917	14,697 1,780	14,697	1,780	-	-	-	-	-	-	-	-	-
2a.3.6 Prairie Island Indian Community Payments 2a.3 Subtotal Period 2a Collateral Costs	48	239	32	58	-	130	1,780	2,267	1,780	15,281	1,780 3,664		-	299	-	-	-	17,968	58	-
			02	00		230	-,0	_,	-,	,	-,			_50				,	30	

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Table F-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

Activity	_	D	D 1	Da alaa adaa a	Т	Off-Site	LLRW	Other	Total	T-4-1	NRC	Spent Fuel	Site	Processed	Class A		Volumes	GTCC	Burial /	Craft	Utility and
Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Costs	Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet		Processed Wt., Lbs.	Manhours	Contractor Manhours
Period 2a	a Period-Dependent Costs																				
2a.4.1	Decon supplies	107	-	-	-	-	-	-	27	134	134	-	-	-	-	-	-	-	-	-	-
2a.4.2	Insurance	=	-	-	-	-	-	690	69	759	759	-	-	-	-	-	-	-	-	-	-
2a.4.3	Property taxes	-	-	-	-	-	-	5,009	501	5,510	5,510	-	-	-	-	-	-	-	-	-	-
2a.4.4	Health physics supplies	-	1,950	-	-	-	-	-	487	2,437	2,437	-	-	-	-	-	-	-	-	-	-
2a.4.5	Heavy equipment rental	-	3,565	-	-	-	-	-	535	4,100	4,100	-	-	-	- 0.001	-	-	-	-	-	-
2a.4.6 2a.4.7	Disposal of DAW generated Plant energy budget	-	-	73	30	-	303	2,194	88 329	493 2,523	493 2,523	-	-	-	3,681	-	-	-	73,619	120	-
2a.4.7 2a.4.8	NRC Fees	-	-	-	-	-	-	842	84	926	926	-		-	-	-		-	-	-	-
2a.4.9	Emergency Planning Fees	-	_	-	_	-	-	2,647	265	2,912	-	2,912	-	_	-	-	-	-	_	-	_
2a.4.10	Fixed Overhead	-	-	-	-	-	-	1,695	254	1,949	1,949	-,	-	-	-	-	-	-	-	-	-
2a.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	602	90	692	, -	692	-	-	-	-	-	-	-	-	-
2a.4.12	ISFSI Operating Costs	-	-	-	-	-	-	80	12	92	-	92	-	-	-	-	-	-	-	-	-
2a.4.13	Railroad Track Maintenance	-	-	-	-	-	-	318	48	366	366	-	-	-	-	-	-	-	-	-	-
2a.4.14	Remedial Actions Surveys	-	-	-	-	-	-	1,596	239	1,835	1,835	-	-	-	-	-	-	-	-	-	-
2a.4.15	Security Staff Cost	-	-	-	-	-	-	11,727	1,759	13,486	13,486	-	-	-	-	-	-	-	-	-	172,72
2a.4.16	DOC Staff Cost Utility Staff Cost	-	-	-	-	-	-	20,663 26,905	3,099 4,036	23,763 30,941	23,763 30,941	-	-	-	-	-	-	-	-	-	225,21
2a.4.17 2a.4	Subtotal Period 2a Period-Dependent Costs	107	5,515	73	30	-	303	74,968	4,036 11,922	92,918	89,223	3,696	-	-	3,681	-	-	-	73,619	120	417,45 815,38
	•		,									ŕ									
2a.0	TOTAL PERIOD 2a COST	768	29,021	19,584	4,254	5,810	21,456	91,780	40,333	213,006	203,161	7,360	2,485	37,556	37,889	237	673	-	4,336,562	185,810	821,76
PERIOD	2b - Site Decontamination																				
Period 2b	Direct Decommissioning Activities																				
Disposal	of Plant Systems																				
	Aux Bldg Normal Ventilation	-	2	0	0	1	-	-	1	3	3	-	-	3	-	-	-	-	140	29	-
2b.1.1.3	Buildings Maintenance	-	5	-	-	-	-	-	1	5	-	-	5	-	-	-	-	-	-	65	-
2b.1.1.4	Chemical & Volume Control	1,120	1,389	89	90			-	1,286	5,700	5,700	-	-	4,498		-	-	-	366,565	34,533	-
2b.1.1.5	Component Cooling - RCA	-	858	25	91	2,079	-	-	543	3,597	3,597	-	-	12,427	-	-	-	-	504,675	11,242	-
2b.1.1.6 2b.1.1.7		-	74		-	-	-	-	11	85	-	-	85		-	-	-	-	-	1,086	-
2b.1.1.7 2b.1.1.8	Containment Cooling - RCA Containment Hydrogen Control - RCA	-	304 30	7	25	569 18	-	-	166 10	1,070 59	1,070 59	-	-	3,400 105		-	-	-	138,090 4,278	3,971 401	-
2b.1.1.9		-	93	2	6			-	46	293	293	-		868		-		-	35,249	1,217	-
	Containment Ventilation	_	255	24	51		248	_	260	1,667	1,667	_	_	4,951		_	_	_	247,952	3,668	_
	Cooling Water	-	163		-	-		-	24	187	-,	-	187	-,	-	-	-	-	,	2,396	-
	Cooling Water - RCA	-	658	16	57	1,293	-	-	368	2,392	2,392	-	-	7,728	-	-	-	-	313,832	8,594	-
2b.1.1.13	D1 Emergency Diesel	-	50	-	-	-	-	-	8	58	-	-	58	-	-	-	-	-	-	730	-
	D2 Emergency Diesel	-	36	-	-	-	-	-	5	41	-	-	41		-	-	-	-	-	522	-
	Diesel Rooms Ventilation	-	9	-	-	-	-	-	1	11	-	-	11	-	-	-	-	-	-	135	-
	Electrical - Clean	-	1,905		-	-	-	-	286	2,191	-	-	2,191	-	-	-	-	-	-	26,981	-
	Electrical - Contaminated Electrical - Decontaminated	-	611 3,787	7 48	20 173		32	-	228 1,569	1,321 9,518	1,321 9,518	-	-	2,527 23,551	95	-	-	-	108,690 956,401	8,377	-
	Fuel Handling	-	121	40 6	113			-	74	436	436	-	-	908	218	-	-	-	50,723	49,378 1,784	-
	Fuel Oil	-	121	-	- 11	102	-	-	18	140	-	-	140	-	210	-	-	-	-	1,697	-
	HVAC - Clean	-	120	-	_	-	_	-	18	138	-	-	138	_	-	-	-	-	-	1,891	-
	HVAC - Contaminated	-	374	9	26	546	41	-	190	1,186	1,186	-	-	3,261	123	-	-	-	140,257	5,032	-
	Incore Instrumentation	0	28	1	2			-	14	74	74	-	-	60		-	-	-	6,058	425	-
	Misc Drains & Vents	-	233	15	13			-	115	618	618	-	-	390		-	-	-	49,062	3,091	-
	Reactor Coolant	153	311	21	18			-	234	1,060	1,060	-	-	344		-	-	-	64,085	6,470	-
	Reactor Hot Sampling	149	136 73	12	7	11	118	-	142 11	576 84	576	-	84	66		-	-	-	25,063	3,946 1.042	-
	Reactor Makeup Reactor Vessel	9	73 21	- 1	- 0	- 4	- 5	-	11	84 52	52	-	84	26	14	-	-	-	2.000	1,042	-
	Residual Heat Removal	357	419	85	86		1,105		654	3,190	3,190	-		2,895		-		-	326,425	7,621	
	Safeguards Chilled Water	-	18	-	-	-	1,100	-	3	20	5,150	-	20	2,000	5,252	-	-	-	-	259	_
	Safety Injection	=	893	42	73	1,136	393	-	507	3,044	3,044	-	-	6,788	1,156	-	-	-	349,908	12,561	-
2b.1.1.32	Sampling	-	60	4	3	10	37	-	26	140	140	-	-	59	107	-	-	-	9,420	811	-
2b.1.1.33	Shield Bldg Ventilation	=	140	14	26	360	165	-	135	839	839	-	-	2,152	491	-	-	-	118,583	2,030	-
	Station & Instrument Air	-	20	-	-	-	-	-	3	23	-	-	23		-	-	-	-	-	300	-
	Station & Instrument Air - RCA	-	81	1	2	56	-	-	29	169	169	=	-	332	-	-	-	-	13,496	1,053	-
	Turbine Bldg Traps & Drains	-	50	-	-	-	-	-	8	58	-	-	58	-	-	-	-	-	-	767	-
	Unit Coolers	-	42	- 0	- 2	-	-	-	6	49	115	-	49		-	-	-	-	- 0.040	611	-
2b.1.1.38 2b.1.1	Unit Coolers - RCA Totals	1,789	55 13,544	429	786			-	20 7,032	115 40,209	115 37,119	-	3,091	230 77,571		-	-	-	9,348 3,840,299	683 205,829	-
		1,709		429	100			-				-	5,091			-	-	-			-
2b.1.2	Scaffolding in support of decommissioning	-	1,163	4	2	32	5	-	297	1,503	1,503	-	-	173	15	-	-	-	8,731	7,960	-

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Table F-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(11	lousanus	oi 2020 Dollai	.5)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet		Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
		2050	0050	COSCS	COSCS	00000	COSES	COSTS	contingency	COSCS	00000	COSUS	0000	Cui I cot	0411000	currect	0417000	04,100	110, 200	namours	Manifour
	umination of Site Buildings Reactor	1,215	2.807	240	1.236	373	13,624		4.981	24,476	24,476	_	-	2.230	83,429	-	_	-	3,633,417	50.950	_
2b.1.3.1 2b.1.3.2		1,210	28	3	1,230	-	97	-	34	179	179	-	-	2,230	929	-	-	-	43,896	301	-
2b.1.3	Totals	1,215	2,835	243	1,253	373	13,721	-	5,015	24,655	24,655	-	-	2,230	84,358	-	-	-	3,677,313	51,251	-
2b.1.4	Prepare/submit License Termination Plan	-	_	_	_	-	_	526	79	605	605	-	-	-	-	_	-	_	_	-	4,096
2b.1.5	Receive NRC approval of termination plan									a											,
2b.1	Subtotal Period 2b Activity Costs	3,004	17,542	675	2,041	13,384	17,377	526	12,423	66,973	63,882	-	3,091	79,974	95,101	-	-	-	7,526,343	265,040	4,096
	2b Additional Costs																				
2b.2.1 2b.2.2	Operational Equipment Excavation of Underground Services	-	1,175	11	36	606	-	225	97 328	751 1,728	751 1,728	-	-	5,880	-	-	-	-	147,000	16 7,411	-
2b.2.2	Security Modifications	-	1,175	-	-	-	-	4,348	652	5,000	5,000	-	-	-	-	-		-	-	7,411	-
2b.2	Subtotal Period 2b Additional Costs	-	1,175	11	36	606	-	4,573	1,077	7,478	7,478	-	-	5,880	-	-	-	-	147,000	7,427	-
Period 2	2b Collateral Costs																				
2b.3.1	Process decommissioning water waste	108	-	74	132	-	298	-	156	768	768	-	-	-	684	-	-	-	41,053	133	-
2b.3.2 2b.3.3	Process decommissioning chemical flush waste Small tool allowance	2	315	90	296	-	677	-	224 47	1,289 362	1,289 362	-	-	-	875	-	-	-	93,252	164	-
2b.3.3	Spent Fuel Capital and Transfer	-	919	-	-	-	-	10,782	1,617	12,400	362	12,400	-	-	-	-	-	-	-	-	-
2b.3.5	Retention and Severance	-	-	-	-	-	-	6,141	921	7,063	7,063	-	-	-	-	-	-	-	-	-	-
2b.3.6	Prairie Island Indian Community Payments	-	-	-	-	-	-	1,348	-	1,348	-	1,348	-	-	-	-	-	-	-	-	-
2b.3	Subtotal Period 2b Collateral Costs	110	315	164	428	-	975	18,272	2,965	23,230	9,482	13,748	-	-	1,559	-	-	-	134,305	297	-
	2b Period-Dependent Costs																				
2b.4.1	Decon supplies	511	-	-	-	-	-	-	128	639	639	-	-	-	-	-	-	-	-	-	-
2b.4.2 2b.4.3	Insurance Property taxes	-	-	-	-	-	-	523 3,435	52 344	575 3,779	575 3,779	-	-	-	-	-	-	-	-	-	-
2b.4.3 2b.4.4	Health physics supplies	-	2,140	-	-	-	-		535	2,675	2.675	-	-	-	-	-	-	-	-	-	-
2b.4.5	Heavy equipment rental	-	2,774	-	-	-	-	-	416	3,190	3,190	-	-	-	-	-	-	-	-	-	-
2b.4.6	Disposal of DAW generated	-	-	70	28	-	290		84	472	472	-	-	-	3,521	-	-	-	70,425	115	-
2b.4.7 2b.4.8	Plant energy budget NRC Fees	-	-	-	-	-	-	1,313 638	197 64	1,509 701	1,509 701	-	-	-	-	-	-	-	-	-	-
2b.4.9	Emergency Planning Fees	-	-	-	-	-	-	2.006	201	2.207	701	2.207	-	-	-	-		-	-	-	-
2b.4.10	Fixed Overhead	-	-	-	-	-	-	1,284	193	1,477	1,477	-	-	-	-	-	-	-	-	-	-
2b.4.11		-	-	-	-	-	-	456	68	524	-	524	-	-	-	-	-	-	-	-	-
2b.4.12 2b.4.13	Liquid Radwaste Processing Equipment/Services ISFSI Operating Costs	-	-	-	-	-	-	229 60	34 9	264 69	264	- 69	-	-	-	-	-	-	-	-	-
2b.4.13 2b.4.14		-	-	-	-	-	-	67	10	78	78	-	-	-	-	-	-	-	-	-	-
2b.4.15	Remedial Actions Surveys	-	-	-	-	-	-	1,209	181	1,391	1,391	-	-	-	-	-	-	-	-	-	-
2b.4.16		-	-	-	-	-	-	8,259	1,239	9,497	9,497	-	-	-	-	-	-	-	-	-	121,244
2b.4.17 2b.4.18		-	-	-	-	-	-	10,738 13,928	1,611 2,089	12,348 16,017	12,348 16,017	-	-	-	-	-	-	-	-	-	121,244 225,649
2b.4.16	Subtotal Period 2b Period-Dependent Costs	511	4,914	70	28	-	290	44,145	7,454	57,412	54,612	2,800	-	-	3,521	-	-	-	70,425	115	468,137
2b.0	TOTAL PERIOD 2b COST	3,626	23,946	920	2,533	13,990	18,642	67,516	23,920	155,093	135,455	16,548	3,091	85,854	100,182	-	-	-	7,878,073	272,879	472,233
PERIO	D 2c - Spent fuel delay prior to SFP decon																				
Period 2	2c Direct Decommissioning Activities																				
	2c Collateral Costs							<b>200</b>	0.5	04.05											
2c.3.1 2c.3.2	Spent Fuel Capital and Transfer Retention and Severance	-	-	-	-	-	-	53,816 3,512	8,072 527	61,889 4,039	4,039	61,889	-	-	-	-	-	-	-	-	-
2c.3.3	Prairie Island Indian Community Payments	-	-	-	-	-	-	1,526	- 321	1,526	4,055	1,526	-		-	-	-	-	-	-	-
2c.3	Subtotal Period 2c Collateral Costs	-	-	-	-	-	-	58,855	8,599	67,455	4,039	63,415	-	-	-	-	-	-	-	-	-
	Cc Period-Dependent Costs																				
2c.4.1	Insurance	-	-	-	-	-	-	592	59	651	651	-	-	-	-	-	-	-	-	-	-
2c.4.2 2c.4.3	Property taxes Health physics supplies	-	263	-	-	-	-	3,512	351 66	3,863 328	3,863 328	-	-	-	-	-	-	-	-	-	-
2c.4.5 2c.4.4	Disposal of DAW generated	-	- 200	9	4	-	38	-	11	61	61	-	-	-	457	-	-	-	9,141	15	-
2c.4.5	Plant energy budget	-	-	-	-	-	-	1,486	223	1,709	1,709	-	-	-	-	-	-	-	-	-	-
2c.4.6	NRC Fees	-	-	-	-	-	-	687	69	756	756		-	-	-	-	-	-	-	-	-
2c.4.7 2c.4.8	Emergency Planning Fees Fixed Overhead	<del>-</del>	-	-	-	-	-	2,271 1,454	227 218	2,498 1,672	1,672	2,498	-	-	-	-	-	-	-	=	-
2c.4.8 2c.4.9	Spent Fuel Pool O&M	-	-	-	-	-	-	516	218 77	593	1,672	593	-		-	-	-	-	-	-	-
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Table F-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

	(Inousands of 2020 Dollars)																				
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet		Craft Manhours	Contractor Manhours
Period 2	c Period-Dependent Costs (continued)																				
2c.4.10	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	260	39	298	298	-	-	-	-	-	-	-	-	-	-
2c.4.11	ISFSI Operating Costs	-	-	-	-	-	-	68	10		-	79	-	-	-	-	-	-	-	-	-
2c.4.12 2c.4.13	Railroad Track Maintenance Security Staff Cost	-	-	-	-	-	-	76 9,348	11 1,402	88 10,751	88 10,751	-	-	-			-	-	-	-	137,246
2c.4.14	Utility Staff Cost	-	-	-	-	-	-	1,195	179	1,375	1,375	-	-	_	-	-	-	-	_	-	19,062
2c.4	Subtotal Period 2c Period-Dependent Costs	-	263	9	4	-	38	21,465	2,943	24,721	21,552	3,170	-	-	457	-	-	-	9,141	15	156,308
2c.0	TOTAL PERIOD 2c COST	-	263	9	4	-	38	80,320	11,543	92,176	25,591	66,585	-	-	457	-	-	-	9,141	15	156,308
PERIO	D 2d - Decontamination Following Wet Fuel Storage																				
Period 2 2d.1.1	d Direct Decommissioning Activities Remove spent fuel racks	347	35	86	41	-	703	-	373	1,585	1,585	-	-	-	2,092	-	-	-	132,919	576	-
	of Plant Systems				_														22.440		
2d.1.2.1 2d.1.2.2		-	152 947		5 43	103 986		-	56 392	325 2,380	325 2,380	-	-	615 5,893		-	-	-	26,449 239,327	2,077 12,340	-
2d.1.2.2		-	160					-	82	508	508	-	-	1,398		-	-	-	60,110	2,157	-
2d.1.2.4		-	85		4			-	34	207	207	-	-	495		-	-	-	20,100	1,019	-
2d.1.2.5		303						-	382	1,693	1,693	-	-	806		-	-	-	117,816	7,613	-
2d.1.2.6 2d.1.2	Station & Instrument Air - RCA Fuel Pool Totals	303	20 1,721			14 1,554		-	7 954	42 5,157	42 5,157	-	-	83 9,290		-	-	-	3,374 467,176	263 25,468	-
2d.1.4	Scaffolding in support of decommissioning	-	233	1	0	6	1	-	59	301	301	-	-	35		-	-	_	1,746	1,592	-
2d.1	Subtotal Period 2d Activity Costs	650	1,989	139	138	1,561	1,180	-	1,386	7,042	7,042	-	-	9,325	3,496	-	-	_	601,841	27,637	-
Period 9	d Additional Costs																				
2d.2.1 2d.2	License Termination Survey Planning Subtotal Period 2d Additional Costs	-	-	-	-	-	-	1,037 1,037	311 311	1,348 1,348	1,348 1,348			-	-	-	-	-	-	-	6,240 6,240
	d Collateral Costs																				
2d.3.1	Process decommissioning water waste	30		21			86	-	44	220	220	-	-	-	197	-	-	-	11,793	38	-
2d.3.2 2d.3.3	Process decommissioning chemical flush waste Small tool allowance	1	37	34	110	-	251	-	83 6		478 42	-	-	-	324	-	-	-	34,576	61	-
2d.3.4	Decommissioning Equipment Disposition	-	- -	130	67	1,112	178	-	234	1,722	1,722	-	-	6,000	529	-	-	-	303,608	147	-
2d.3.5	Prairie Island Indian Community Payments	-	-	-	-	´-	-	975	-	975	-	975	-	-	-	-	-	-	-	-	-
2d.3	Subtotal Period 2d Collateral Costs	31	37	185	215	1,112	514	975	367	3,437	2,462	975	-	6,000	1,050	-	-	-	349,977	246	-
	d Period-Dependent Costs								1*	<b>5</b> 0	50										
2d.4.1 2d.4.2	Decon supplies Insurance	59		-	-	-	-	378	15 38	73 416	73 416	-	-	-	-	-	-	-	-	-	-
2d.4.2	Property taxes	-	-	-	-	-	-	2,004	200	2,204	2,204	-	-	-	-	-	-	-	-	-	-
2d.4.4	Health physics supplies	-	575		-	-	-	-	144	719	719	-	-	-	-	-	-	-	-	-	-
2d.4.5	Heavy equipment rental	-	2,007			-	-	-	301	2,308	2,308	-	-	-		-	-	-			-
2d.4.6	Disposal of DAW generated	-	-	16	7	-	68	-	20	111	111	-	-	-	830	-	-	-	16,609	27	-
2d.4.7 2d.4.8	Plant energy budget NRC Fees	-	-	-	-	-	_	506 439	76 44	582 483	582 483	-	-	-	-	-	-	-	-	-	-
2d.4.9	Emergency Planning Fees	_	-	-	_	-	-	58	6		-	64	_	_	_	-	_	_	-	_	_
2d.4.10	Fixed Overhead	-	-	-	-	-	-	929	139		1,068	-	-	-	-	-	-	-	-	-	-
2d.4.11	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	332	50		381	-	-	-	-	-	-	-	-	-	-
2d.4.12	ISFSI Operating Costs	-	-	-	-	-	-	44	7	50	-	50	-	-	-	-	-	-	-	-	-
2d.4.13 2d.4.14	Railroad Track Maintenance Remedial Actions Surveys	-	-	-	-	-	-	49 875	7 131	56 1.006	56 1.006	-	-	-	-	-	-	-	-	-	-
2d.4.14	Security Staff Cost	_	-	-	_	-	-	5,782	867	6,649	4.694	1,955	_	_	_	-	_	_	-	_	84,454
2d.4.16	DOC Staff Cost	-	-	-	-	-	-	6,401	960	7,361	7,361	-,,,,,	-	-	-	-	-	-	-	-	70,243
2d.4.17 2d.4	Utility Staff Cost Subtotal Period 2d Period-Dependent Costs	- 59	2,582	16	7	-	- 68	8,100 25,896	1,215 4,220	9,315 32,848	8,858 30,323	456 2,525	-	-	830	-	-	-	16,609	- 27	126,681 281,377
2d.0	TOTAL PERIOD 2d COST	740					1,763		6,284	44,675	41,175	3,501	-	15,325	5,377	-	-	-	968,427	27,910	287,617
PERIO	D 2f - License Termination																				
	f Direct Decommissioning Activities																				
2f.1.1	ORISE confirmatory survey	-	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-
2f.1.2 2f.1	Terminate license Subtotal Period 2f Activity Costs			_		_		166	50	a 216	216	_	_						_		_
41.1	Dabiotal I Cliou 21 Activity COSts	-	-	-	-	-	-	100	50	210	210	-	-	-	-	-	-	-	-	-	-

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Table F-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

(Inousands of 2020 Dollars)																					
Activi		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Class B	Volumes Class C Cu. Feet	GTCC Cu. Foot	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
		Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	mannours	mannours
Period 2 2f.2.1 2f.2	ff Additional Costs License Termination Survey Subtotal Period 2f Additional Costs	-	-	-	- -	-	-	3,199 3,199	960 960		4,159 4,159	-	-	-	-	-	-	-	-	40,531 40,531	3,120 3,120
Period 2	of Collateral Costs																				
2f.3.1	DOC staff relocation expenses	-	-	-	-	-	-	1,264	190		1,454	-	-	-	-	-	-	-	-	-	-
2f.3.2 2f.3	Prairie Island Indian Community Payments Subtotal Period 2f Collateral Costs		-	-	-	-	-	934 2,198	190	934 2,388	1,454	934 934	-	-	-	-	-	-	-	-	-
	ff Period-Dependent Costs							0.00	36	398	398										
2f.4.1 2f.4.2	Insurance Property taxes	-	-	-	-	-	-	362 1,771	177	1,948	1,948	-	-	-	-	-	-	-	-	-	-
2f.4.3	Health physics supplies	-	501			-	-	-	125	626	626	-	-	-	-	-	-	-	-		-
2f.4.4 2f.4.5	Disposal of DAW generated Plant energy budget	-	-	7	3	-	28	243	8 36	45 279	45 279	-	-	-	334	-	-	-	6,685	11	-
2f.4.6	NRC Fees	-	-	-	-	-	-	422	42		465	-	-	-	-	-	-	-	-	-	-
2f.4.7	Emergency Planning Fees	-	-	-	-	Ē	-	55	6	61	1.000	61	-	-	-	-	-	-	-	-	-
2f.4.8 2f.4.9	Fixed Overhead ISFSI Operating Costs	-	-	-	-	-	-	890 42	133 6	1,023 48	1,023	48	-		-	-	-	-	-	-	-
2f.4.10	Railroad Track Maintenance	-	-	-	-	-	-	47	7	54	54	-	-	-	-	-	-	-	-	-	-
2f.4.11 2f.4.12	Security Staff Cost DOC Staff Cost	-	-	-	-	-	-	5,538 4,238	831 636	6,369 4,874	4,497 4,874	1,873	-	-	-	-	-	-	-	-	80,898 46,283
2f.4.12	Utility Staff Cost	-	-	-	-	-	-	4,011	602		4,175	438	-	-	-	-	-	-	-	-	59,507
2f.4	Subtotal Period 2f Period-Dependent Costs	-	501	7	3	-	28	17,620	2,646	20,803	18,384	2,420	-	-	334	-	-	-	6,685	11	186,687
2f.0	TOTAL PERIOD 2f COST	-	501	7	3	-	28	23,183	3,845	27,566	24,212	3,354	-	-	334	-	-	-	6,685	40,542	189,807
PERIO	D 2 TOTALS	5,134	58,338	20,860	7,153	22,473	41,926	290,708	85,924	532,517	429,593	97,348	5,576	138,734	144,239	237	673	-	13,198,890	527,156	1,927,726
PERIO	D 3b - Site Restoration																				
Period 3	Bb Direct Decommissioning Activities																				
Demolit	ion of Remaining Site Buildings																				
	Reactor	-	4,644		-	Ē	-	-	697	5,341	-	Ē	5,341	-	-	-	-	-	-	44,669	-
3b.1.1.2 3b.1.1.3		-	3 1,651		-	-	-	-	0 248		-	-	4 1,899		-	-	-	-	-	16 8,411	-
3b.1.1.4	Turbine	-	2,139	-	-	-	-	-	321	2,460	-	-	2,460	-	-	-	-	-	-	21,985	-
3b.1.1.5 3b.1.1	Turbine Pedestal Totals	-	365 8,803		-	-	-	-	55 1,320	420 $10,123$	-	-	420 $10,123$	-	-	-	-	-	-	1,857 76,939	-
	seout Activities																				
3b.1.2 3b.1.3	Grade & landscape site Final report to NRC	-	448	-	-	-	-	200	67 30	515 231	231	-	515	-	-	-	-	-	-	921	1,560
3b.1.3	Subtotal Period 3b Activity Costs	-	9,251	-	-	-	-	200	1,418		231	-	10,639	-	-	-	-	-	-	77,859	1,560
	Bb Additional Costs																				
3b.2.1 3b.2.2	Clean Concrete Disposal Intake Structure cofferdam	-	2,242 623		-	-	-	5	337 93	2,583 716	-	-	2,583 716	-	-	-	-	-	-	8,386 5,168	-
3b.2.3	Construction Debris	-	-	-	-	-	-	10	2	12	-	=	12	-	-	-	-	-	-	-	-
3b.2.4 3b.2.5	Backfill Disposition of Original Casks	-	3,011 24		418	-	2,390	-	452 728	3,462 3,640	3,640	-	3,462	-	8,929	-	-	-	1,059,612	2,904 146	-
3b.2	Subtotal Period 3b Additional Costs	-	5,899				2,390	15	1,611	10,413	3,640	-	6,773		8,929		-	-	1,059,612	16,604	-
	Bb Collateral Costs																				
3b.3.1 3b.3.2	Small tool allowance Prairie Island Indian Community Payments	-	121		-	-	-	2,649	18	139 2,649	-	2,649	139		-	-	-	-	-	-	-
3b.3	Subtotal Period 3b Collateral Costs	-	121	-	-	-	-	2,649	18		-	2,649	139	-	-	-	-	-	-	-	-
	Bb Period-Dependent Costs		_					513	F1	565	E05										
3b.4.1 3b.4.2	Insurance Property taxes	-		-	-	-	-	4,167	51 417		565	4,583	-	-	-	-	-	-	-	-	-
3b.4.3	Heavy equipment rental	-	7,144	-	-	-	-	-	1,072	8,215	-	-	8,215	-	-	-	-	-	-	-	-
3b.4.4 3b.4.5	Plant energy budget NRC ISFSI Fees	-		-	-	-	-	344 218	52 22		-	395 239	-	-	-	-	-	-	-	-	-
3b.4.6	Emergency Planning Fees	-		-	-	-	-	157	16	173	-	173	-		-	-	-	-	-	-	-
3b.4.7	Fixed Overhead	-	-	-	-	-	-	1,024	154		397	781	-	-	-	-	-	-	-	-	-
3b.4.8	ISFSI Operating Costs	-	-	-	-	-	-	119	18	136	-	136	-	-	-	-	-	-	-	-	-

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Table F-1
Prairie Island DECON Unit 1
DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

		(Thousands of 2020 Dollars)																			
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity		Decon			Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
	od-Dependent Costs (continued)																				
	lroad Track Maintenance urity Staff Cost	-	-	-	-	-	-	361 4,616	54 692	416 5,308	153	263 5,308	-	-	-	-	-	-	-	-	57,340
	C Staff Cost	-	-	-	-	-	-	10,921	1,638	12,559	-	5,506	12,559	-	-	-	-	-	-	-	116,885
3b.4.12 Util	ity Staff Cost	-	-	-	-	-	-	5,170	776	5,946	-	1,278	4,668	-	-	-	-	-	-	-	76,637
3b.4 Sub	total Period 3b Period-Dependent Costs	-	7,144	-	-	-	-	27,610	4,960	39,714	1,114	13,158	25,442	-	-	-	-	-	-	-	250,861
3b.0 TOT	TAL PERIOD 3b COST	-	22,414	80	418	-	2,390	30,474	8,008	63,784	4,985	15,807	42,993	-	8,929	-	-	-	1,059,612	94,463	252,421
PERIOD 3c - l	Fuel Storage Operations/Shipping																				
Period 3c Direc	et Decommissioning Activities																				
Period 3c Colla																					
	nt Fuel Capital and Transfer	-	-	-	-	-	-	625,425	93,814	719,239	-	719,239	-	-	-	-	-	-	-	-	-
	irie Island Indian Community Payments total Period 3c Collateral Costs	-	-	-	-	-	-	219,357 844,782	93,814	219,357 938,596	-	219,357 938,596	-	-	-	-	-	-	-	-	-
		-		-	•	,	-	0.11,102	00,014	0.00,000	-	300,000	-	-	-	-	-	-	-	-	-
	od-Dependent Costs							40 #10	4.050	10.550		40.550									
	arance perty taxes	-	-	-	-	-	-	42,518 242,919	4,252 24,292	46,770 267,210	-	46,770 267,210	-	-	-	-	-	-	-	-	-
	C ISFSI Fees	-	-	-	-	-	-	19,571	1,957	21,528	-	21,528	-	-	-	-	_	-	-	-	-
	ergency Planning Fees	-	-	-	-	-	-	13,018	1,302	14,320	-	14,320	-	-	-	-	-	-	-	-	-
	ed Overhead	=	-	-	-	-	-	28,613	4,292	32,905	-	32,905	-	-	-	-	-	-	-	-	-
	SI Operating Costs Iroad Track Maintenance	-	-	-	-	-	-	9,828 10,979	1,474 1,647	11,302 12,626	-	11,302 12,626	-	-	-	-	-	-	-	-	-
	urity Staff Cost	-	-	-	-	-	-	382,242		439,578	-	439,578	-	-	-	-	-	-	-	-	4,748,373
	C Staff Cost	-	-	-	_	-	-	26,917	4,038	30,955	-	30,955	-	-	-	-	-	-	-	-	182,630
	ity Staff Cost	-	-	-	-	-	-	165,731	24,860	190,591	-	190,591	-	-	-	-	-	-	-	-	2,419,844
3c.4 Sub	total Period 3c Period-Dependent Costs	-	-	-	-	-	-	942,335	125,449	1,067,784	-	1,067,784	-	-	-	-	-	-	-	-	7,350,846
3c.0 TOT	TAL PERIOD 3c COST	-	-	-	-	-	-	1,787,117	219,263	2,006,380	-	2,006,380	-	-	-	-	-	-	-	-	7,350,846
PERIOD 3d -	GTCC shipping																				
Period 3d Direc	ct Decommissioning Activities																				
	Supply System Removal																				
	sel & Internals GTCC Disposal	-	-	1,444		-	8,680		1,663	11,787	11,787	-	-	-	-	-	-	1,773	344,823	-	-
3d.1.1 Tota 3d.1 Sub	als total Period 3d Activity Costs	-	-	1,444 1,444		-	8,680 8,680		1,663 1,663	11,787 11,787	11,787 11,787	-	-	-	-	-	-	1,773 1,773		-	-
		-	_	1,44			0,000	-	1,005	11,707	11,707	•	-		-	-	-	1,770	344,023	-	-
Period 3d Colla 3d.3.1 Sper	ateral Costs nt Fuel Capital and Transfer	_		_		_		28	4	32	-	32	_		_	_		_	_	_	
	irie Island Indian Community Payments	-	_	-	_	_	_	48		48		48		-	_	-	_	-	_	-	-
	total Period 3d Collateral Costs	-	-	-	-	-	-	76		80	-	80	-	-	-	-	-	-	-	-	-
	od-Dependent Costs																				
	ırance	-	-	-	-	-	-	9	1	10			-	-	-	-	-	-	-	-	-
	perty taxes	-	-	-	-	-	-	53	5	58			-	-	-	-	-	-	-	-	-
	C ISFSI Fees ergency Planning Fees	-	-	-	-	-	-	4 3	0	4 3	-	4 3	-	-	-	-	-	-	-	-	-
	ed Overhead	-	-	-	-	-	-	6	1	7	7		-	-	-	-	-	-	-	-	-
	lroad Track Maintenance	-	-	-	-	-	-	2	0	3	3	-	-	-	-	-	-	-	-	-	-
	urity Staff Cost	-	-	-	-	-	-	83		96			-	-	-	-	-	-	-	-	1,037
	ity Staff Cost	=	-	-	-	-	-	19		22			-	-	-	-	-	-	-	-	269
3d.4 Sub	total Period 3d Period-Dependent Costs	-	-	-	-	-	-	181	24	204	197	7	-	-	-	-	-	-	-	-	1,306
3d.0 TOT	TAL PERIOD 3d COST	-	-	1,444	-	-	8,680	256	1,691	12,071	11,984	87	-	-	-	-	-	1,773	344,823	-	1,306
PERIOD 3e - 1	ISFSI Decontamination																				
Period 3e Direc	ct Decommissioning Activities																				
Period 3e Addit					,	,	4.00	1.10=	000	1 000	1.000				10:				AF 55 :	¥ 000	1 101
	ense Termination ISFSI total Period 3e Additional Costs	-	0	2			142 142		339 339	1,696 1,696	1,696 1,696	-	-	-	424 424		-	-	65,754 65,754	5,882 5,882	1,161 1,161
55.2 545			Ü	-	- 11		1-12	1,101	555	1,000	1,000				-124				00,104	0,002	1,101

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

Table F-1 Prairie Island DECON Unit 1 DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage (Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
inaex	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. reet	Cu. Feet	Cu. Feet	Cu. reet	Cu. Feet	Wt., Lbs.	Mannours	Mannours
Period 3e	Period-Dependent Costs																				
3e.4.1	Insurance	-	-	-	-	-	-	93	23	116	116	-	-	-	-	-	-	-	-	-	-
3e.4.2	Property taxes	-	-	-	-	-	-	56	14	69	69	-	-	-	-	-	-	-	-	-	-
3e.4.3	Plant energy budget	=	-	-	-	-	-	11	3	13	13	-	-	-	-	-	-	-	-	-	-
3e.4.4	Fixed Overhead	-	-	-	-	-	-	54	14	68	68	-	-	-	-	-	-	-	-	-	-
3e.4.5	Railroad Track Maintenance	-	-	-	-	-	-	21	5	26	26	-	-	-	-	-	-	-	-	-	2,500
3e.4.6	Security Staff Cost Utility Staff Cost	-	-	-	-	-	-	174 129	43 32	217 161	217 161	-	-	-	-	-	-	-	-	-	2,500 1,896
3e.4.7 3e.4	Subtotal Period 3e Period-Dependent Costs	-	-	-	-	-	-	536	134	670	670	-	-	-	-	-	-	-	-	-	4,396
se.4	Subtotal Feriod Se Feriod-Dependent Costs	-	-	-	-	-	-	996	154	670	670	-	-	-	-	-	-	-	-	-	4,596
3e.0	TOTAL PERIOD 3e COST	-	0	2	17	-	142	1,733	473	2,367	2,367	-	-	-	424	-	-	-	65,754	5,882	5,556
PERIOD	3f - ISFSI Site Restoration																				
Period 3f	Direct Decommissioning Activities																				
Period 3f	Additional Costs																				
3f.2.1	Demolition and Site Restoration of ISFSI	_	1,121	_	_	_	_	161	192	1,474	_	_	1,474	_	_	_	_	_	_	4,846	80
3f.2	Subtotal Period 3f Additional Costs	=	1,121	-	-	-	-	161	192	1,474	-	-	1,474	-	-	-	-	-	-	4,846	80 80
Period 3f	Collateral Costs																				
3f.3.1	Small tool allowance	_	7	-	-	_	_	-	1	8	-	_	8	_	_	_	_	_	_	_	-
3f.3	Subtotal Period 3f Collateral Costs	-	7	-	-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	-	-
Period 3f	Period-Dependent Costs																				
3f.4.2	Property taxes	-	-	-	-	_	_	28	3	31	-	_	31	_	_	-	-	_	-	_	_
3f.4.3	Heavy equipment rental	-	59	-	-	-	_	-	9	68	-	_	68	_	-	-	-	-	-	-	-
3f.4.4	Plant energy budget	-	-	-	-	-	-	6	1	6	-	-	6	-	-	-	-	-	-	-	-
3f.4.5	Fixed Overhead	-	-	-	-	-	-	28	4	32	-	-	32	-	-	-	-	-	-	-	-
3f.4.6	Railroad Track Maintenance	-	-	-	-	-	-	11	2	12	-	-	12	-	-	-	-	-	-	-	-
3f.4.7	Security Staff Cost	-	-	-	-	-	-	89	13	102	-	-	102	-	-	-	-	-	-	-	1,281
3f.4.8	Utility Staff Cost	-	-	-	-	-	-	55	8	63	-	-	63	-	-	-	-	-	-	-	795
3f.4	Subtotal Period 3f Period-Dependent Costs	-	59	-	-	-	-	216	40	315	-	-	315	-	-	-	-	-	-	-	2,076
3f.0	TOTAL PERIOD 3f COST	-	1,187	-	-	-	-	377	233	1,798	-	-	1,798	-	-	-	-	-	-	4,846	2,156
PERIOD	3 TOTALS	-	23,601	1,525	435	-	11,212	1,819,958	229,668	2,086,399	19,335	2,022,273	44,790	-	9,353	-	-	1,773	1,470,189	105,190	7,612,285
TOTAL C	COST TO DECOMMISSION	8,929	87,919	22,838	8,068	22,651	58,542	2,229,014	336,495	2,774,456	596,408	2,126,090	51,958	144,866	167,553	826	673	1,773	15,279,140	677,859	10,540,740

TOTAL COST TO DECOMMISSION WITH 13.8% CONTINGENCY:	\$2,774,456	thousands of 2020 dollars
TOTAL NRC LICENSE TERMINATION COST IS 21.5% OR:	\$596,408	thousands of 2020 dollars
SPENT FUEL MANAGEMENT COST IS 76.63% OR:	\$2,126,090	thousands of 2020 dollars
NON-NUCLEAR DEMOLITION COST IS 1.87% OR:	\$51,958	thousands of 2020 dollars
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	169,051	Cubic Feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	1,773	Cubic Feet
TOTAL SCRAP METAL REMOVED:	32,925	Tons
TOTAL CRAFT LABOR REQUIREMENTS:	677,859	Man-hours

End Notes:
n/a · indicates that this activity not charged as decommissioning expense
a · indicates that this activity performed by decommissioning staff
0 · indicates that this value is less than 0.5 but is non-zero
A cell containing " · " indicates a zero value

TLG Services, LLC

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Table F-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(11	ousanas o	of 2020 Dollar	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	g Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
	utdown through Transition								<u>-</u>										,		
	Decommissioning Activities																				
	e preliminary decommissioning cost	-	-	-	_	-	-	71	11	82	82	-	-	-	-	-	-	-	-	-	556
	ation of Cessation of Operations									a											
	e fuel & source material ation of Permanent Defueling									n/a a											
1a.1.5 Deactiv	rate plant systems & process waste									a											
	e and submit PSDAR plant dwgs & specs.	-	-	-	-	-	-	110 253	16 38	126 291	126 291	-	-	-	-	-	-	-	-	-	855 1,967
	n detailed rad survey	-	-	-	-	-	-	299	90	291 a	291	-	-	-	-	-	-	-	-	-	1,967
1a.1.9 Estimat	te by-product inventory	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
	oduct description d by-product inventory	-	-	-	-	-	-	55 71	8 11	63 82	63 82	-	-	-	-	-	-	-	-	-	428 556
	major work sequence	-	-	-	-	-	-	412	62	474	474	-	-	-	-	-	-	-	-	-	3,207
	n SER and EA	-	-	-	-	-	-	170	26	196	196	-	-	-	-	-	-	-	-	-	1,326
	e/submit Defueled Technical Specifications n Site-Specific Cost Study	-	-		-	-	-	412 275	62 41	474 316	474 316	-	-	-	-	-	-	-	-	-	3,207 2,138
	e/submit Irradiated Fuel Management Plan	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
Activity Specificati																					
	t temporary facilities	-	-	-	-	-	-	270	41	311	280	-	31	-	-	-	-	-	-	-	2,104 1,782
1a.1.17.2 Plant sy 1a.1.17.3 NSSS I	ystems Decontamination Flush	-	-	-	-	-	-	229 27	34 4	263 32	237 32	-	26		-	-	-	-	-		1,782
1a.1.17.4 Reactor	rinternals	-	-	-	-	-	-	390	59	449	449	-	-	-	-	-	-	-	-	-	3,036
1a.1.17.5 Reactor		-	-	-	-	-	-	357	54	411	411	-	-	-	-	-	-	-	-	-	2,779
1a.1.17.6 Biologic 1a.1.17.7 Steam §		-	-	-	-	-	-	27 171	4 26	32 197	32 197	-	-	-	-	-	-	-	-	-	214 1,334
1a.1.17.8 Reinfor		-	_	-	-	-	-	88	13		51	-	51	-		-	-	-	-	-	684
1a.1.17.9 Main T		-	-	-	-	-	-	22	3		-	-	25	-	-	-	-	-	-	-	171
1a.1.17.10 Main C	ondensers tructures & buildings	-	-	-	-	-	-	22 171	3 26	25 197	99	-	25 99	-	-	-	-	-	-	-	171 1,334
1a.1.17.11 Hant st		-		-	-	-	-	253	38	291	291	-	-	-		-		-	-	-	1,967
1a.1.17.13 Facility	& site closeout	-	-	-	-	-	-	49	7	57	28	-	28	-	-	-	-	-	-	-	385
1a.1.17 Total		-	-	-	-	-	-	2,079	312	2,391	2,105	-	286	-	-	-	-	-	-	-	16,175
Planning & Site Pa	reparations																				
	e dismantling sequence	-	-	-	-	-	-	132	20	152	152	-	-	-	-	-	-	-	-	-	1,026
	rep. & temp. svces water clean-up system	-	-	-	-	-	-	3,500 77	525 12		4,025 88	-	-	-	-	-	-	-	-	-	599
	g/Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,400	360		2,760	-	-	-	-	-	-	-	-	-	-
	e casks/liners & containers	-	-	-	-	-	-	68	10		78	-	-	-	-	-	-	-	-	-	526
1a.1 Subtota	al Period 1a Activity Costs	-	-	-	-	-	-	10,195	1,529	11,724	11,439	-	286	-	=	-	-	-	-	=	33,420
Period 1a Addition 1a.2.1 Spent F	nal Costs Fuel Pool Isolation	_	_		_	_	_	8,450	1,268	9,718	9,718	_	_		_	_			_	_	_
	al Period 1a Additional Costs	-	-	-	-	-	-	8,450	1,268	9,718	9,718	-	-	-	=	-	-	-	-	=	-
Period 1a Collatera																					
	Fuel Capital and Transfer on and Severance	-	-	-	-	-	-	1,330 8,394	199 1,259	1,529 9,653	9,653	1,529	-	-	-	-	-	-	-	-	-
	Island Indian Community Payments	-	-	-	-	-	-	1,249	1,209	1,249	9,699	1,249	-	-	-	-	-	-	-	-	-
	al Period 1a Collateral Costs	-	-	-	-	-	-	10,973	1,459		9,653	2,779	-	-	-	-	-	-	-	-	-
Period 1a Period-D																					
1a.4.1 Insuran		-	-	-	-	-	-	1,660	166	1,826 3,985	1,826 3,985	-	-	-	-	-	-	-	-	-	-
1a.4.2 Propert 1a.4.3 Health	cy taxes physics supplies	-	578	-	-	-	-	3,623	362 144		3,985 722	-	-	-	-	-	-	-	-	-	-
1a.4.4 Heavy	equipment rental	-	753	-	-	-	-	-	113	866	866	-	-	-	-	-	-	-	-	-	-
	al of DAW generated	-	-	11		5 -	47		13	76	76	-	-	-	565	-	-	-	11,299		-
1a.4.6 Plant en 1a.4.7 NRC Fe	nergy budget	-	-	-	-	-	-	1,621 638	243 64	1,864 702	1,864 702	-	-	-	-	-	-	-	-	-	-
1a.4.8 Emerge	ency Planning Fees	-	-	-	-	-	-	2,174	217	2,392	-	2,392	-	-	-	-	-	-	-	-	-
	Overhead	-	-	-	-	-	-	1,440	216		1,656	-	-	-	-	-	-	-	-	-	-
	Fuel Pool O&M Operating Costs	-	-	-	-	-	-	422 56	63 8	486 64	-	486 64		-	-	-	-	-	-	-	-
		-	_	-	_	_		50	0	04	-	04		-	_	-	_	-	_	,	-

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Table F-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(111)	ousanus (	oi 2020 Dollars	•,											
Activit		Decon	Removal		Transport	Off-Site Processing	LLRW Disposal	Other	Total	Total	NRC Lic. Term.	Spent Fuel Management	Site Restoration	Processed Volume	Class A	Class B		GTCC		Craft	Utility and Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
	a Period-Dependent Costs (continued)																				
	Railroad Track Maintenance	-	-	-	-	-	-	63	9	72	72	-	-	-	-	-	-	-	-	-	100 500
1a.4.13 1a.4.14	Security Staff Cost Utility Staff Cost	-	-	-	-	-	-	8,328 21,681	1,249 3,252	9,577 24,933	9,577 24,933	-	-	-	-				-	-	122,720 345,280
1a.4	Subtotal Period 1a Period-Dependent Costs	-	1,331	11	5	-	47		6,122	49,221	46,279	2,942	-	-	565	-	-	-	11,299	18	
1a.0	TOTAL PERIOD 1a COST	-	1,331	11	5	-	47	71,324	10,377	83,095	77,089	5,720	286	-	565	-	-	-	11,299	18	501,420
PERIO	D 1b - Decommissioning Preparations																				
Period 1	b Direct Decommissioning Activities																				
	Work Procedures Plant systems							260	39	299	269		30								2,024
1b.1.1.2		-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
1b.1.1.3	Reactor internals	-	-	-	-	-	-	137	21	158	158	-	-	-	-	-	-	-	-	-	1,069
	Remaining buildings CRD cooling assembly	-	-	-	-	-	-	74 55	11 8	85 63	21 63	-	64	-	-	-	-	-	-	-	577 428
	CRD housings & ICI tubes	-	-	-	-	-	-	55 55	8	63	63	-	-	-	-				-	-	428
1b.1.1.7	Incore instrumentation	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
1b.1.1.8	Reactor vessel Facility closeout	-	-	-	-	-	-	199 66	30 10	229 76	229 38	-	- 38	-	-	-	-	-	-	-	1,552 513
	) Missile shields	-	-	-	-	-	-	25	4	28	28	-	- 30	-	-	-	-	-	-	-	192
1b.1.1.1	1 Biological shield	-	-	-	-	-	-	66	10	76	76	-	-	-	-	-	-	-	-	-	513
	2 Steam generators	-	-	-	-	-	-	253 55	38 8	291	291 32	-	32	-	-	-	-	-	-	-	1,967 428
	Reinforced concrete Main Turbine	-	-	-	-	-	-	ээ 86	13	63 99	- 32	-	32 99		-	-	-	-	-	-	428 667
1b.1.1.1	5 Main Condensers	-	-	-	-	-	-	86	13	99	-	-	99	-	-	-	-	-	-	-	667
	3 Auxiliary building	-	-	-	-	-	-	150	23	173	155	-	17		-	-	-	-	-	-	1,167
1b.1.1.1 1b.1.1	7 Reactor building Total	-	-	-	-	-	-	150 1,827	23 274	$\frac{173}{2,101}$	155 1,706	-	17 395		-	-	-	-	-	-	1,167 $14,215$
1b.1.2 1b.1	Decon primary loop Subtotal Period 1b Activity Costs	572 572		-	-	-	- -	1,827	286 560	859 2,959	859 2,564	-	- 395	- -	-	-	-	- -	-	1,067 1,067	14,215
Period 1 1b.2.1	b Additional Costs Site Characterization							1,505	451	1,956	1,956									8,988	3,563
1b.2.1 1b.2.2	Mixed/Hazardous Waste	-	-	353	94	178	-	1,505	451 76	702	702	-	-	6,132	-	-	-	-	351,977	2,348	
1b.2.3	Asbestos Abatement	-	2,526	3	150	-	1,369	-	996	5,044	5,044	-	-	-	12,843		-	-	166,959	20,907	-
1b.2	Subtotal Period 1b Additional Costs	-	2,526	356	244	178	1,369	1,505	1,524	7,702	7,702	-	-	6,132	12,843	-	-	-	518,936	32,243	3,563
Period 1 1b.3.1	b Collateral Costs Decon equipment	1,055					_	-	158	1,213	1,213								_	-	
1b.3.1	DOC staff relocation expenses	1,050		-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-
1b.3.3	Process decommissioning water waste	25		16			66	-	35	172	172	-	-	-	152		-	-	9,127	30	-
1b.3.4 1b.3.5	Process decommissioning chemical flush waste Small tool allowance	2	2 - 36	61	199	-	3,889	-	1,009	5,159 42	5,159 42	-	-	-	-	588	-	-	62,689	110	-
1b.3.6	Pipe cutting equipment	-	1,200	-	-	-	-	-	180	1,380	1,380	-	-	-	-	-	-	-	-	-	-
1b.3.7	Decon rig	2,104		-	-	-	-	-	316	2,419	2,419	-	-	-	-	-	-	-	-	-	-
1b.3.8	Spent Fuel Capital and Transfer	-	-	-	-	-	-	399 4,017	60 603	459 4,620	4,620	459	-	-	-	-	-	-	-	-	-
1b.3.9 1b.3.10	Retention and Severance Prairie Island Indian Community Payments	-	-	-	-	-	-	623	603 -	4,620 623	4,620	623	-	-	-	-	-	-	-	-	-
1b.3	Subtotal Period 1b Collateral Costs	3,185	1,236	77	228	-	3,955	6,303	2,555	17,540	16,458	1,082	-	-	152	588	-	-	71,815	140	=
	b Period-Dependent Costs																				
1b.4.1 1b.4.2	Decon supplies Insurance	38		-	-	-	-	828	9 83	47 910	47 910	-	-	-	-	-	-	-	-	-	-
1b.4.2 1b.4.3	Property taxes		-	-	-		-	1,713	171	1,884	1,884	-	-	-	-	-	-	-	-	-	-
1b.4.4	Health physics supplies	-	449		-	-	-	-	112	561	561	-	-	-	-	-	-	-	-	-	-
1b.4.5 1b.4.6	Heavy equipment rental Disposal of DAW generated	-	375	- 6	- 3	-	27	-	56 8	432 43	432 43	-	-	-	324	-	-	-	6,473	- 11	-
1b.4.6 1b.4.7	Plant energy budget	-	-	-	-	-	-	1,617	243	1,859	1,859	-	-	-	- 524	-	-	-	0,410	-	-
1b.4.8	NRC Fees	-	-	-	-	-	-	196	20	216	216		-	-	-	-	-	-	-	-	-
1b.4.9 1b.4.10	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	1,084 718	108 108	1,193 826	826	1,193	-	-	-	-	-	-	-	-	-
1b.4.10 1b.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	211	32	242		242	-	-	-	-	-	-	-	-	-
1b.4.12		-	-	-	-	-	-	28	4	32	-	32	-	-	-	-	-	-	-	-	-

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Table F-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							•		or 2020 Domar.	,											
						Off-Site	LLRW	0.1			NRC	Spent Fuel	Site	Processed			Volumes	omaa.	Burial /		Utility and
Activit Index		Decon Cost	Kemoval Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
Period 1	b Period-Dependent Costs (continued)																				
1b.4.13	Railroad Track Maintenance	=	-	-	-	-	-	31	5	36	36	-	=	-	-	-	-	-	-	-	-
1b.4.14		-	-	-	-	-	-	4,153	623	4,775	4,775	-	Ē	-	-	-	-	-	-	-	61,192
1b.4.15 1b.4.16		-	-	-	-	-	-	4,182 10,811	627 1,622	4,810 12,432	4,810 12,432	-	-	-	-	-	-	-	-	-	46,672 $172,167$
1b.4	Subtotal Period 1b Period-Dependent Costs	38	825	6	3	-	27	25,571	3,830	30,299	28,832	1,467	-	-	324	-	-	-	6,473	11	
1b.0	TOTAL PERIOD 1b COST	3,795	4,586	440	475	178	5,351	35,206	8,470	58,501	55,557	2,549	395	6,132	13,319	588	-	-	597,225	33,460	297,808
PERIO	D 1 TOTALS	3,795	5,917	451	479	178	5,398	106,531	18,847	141,595	132,646	8,269	681	6,132	13,884	588	-	-	608,524	33,478	799,228
PERIO	D 2a - Large Component Removal																				
Period 2	a Direct Decommissioning Activities																				
	Steam Supply System Removal																				
	Reactor Coolant Piping	54	47	10	18	-	187	-	89	406	406	-	-	-	508 338	-	-	-	35,411	1,421	-
2a.1.1.2 2a.1.1.3		24 57	21 68	6 110	12 93	-	125 463	-	51 186	238 977	238 977	-	-	-	2,332	-	-	-	23,594 295,800	630 2,049	100
2a.1.1.4		-	77	503		-	776	-	278	1,732	1,732	-	-	-	2,196	-	-	-	185,015		938
2a.1.1.5		-	3,307	2,269		2,409		-	2,681	16,437	16,437	-	-	18,672		-	-	-	1,689,435		2,875
2a.1.1.6 2a.1.1.7		302	281	218	66	-	938	307	488	2,294	2,294	-	-	-	4,797 501	105	- 070	-	177,400		1 100
2a.1.1.7 2a.1.1.8		82 94	4,861 6,046	13,621 2,028	929 728	-	9,015 2,975	307	11,878 6,804	40,693 18,982	40,693 18,982	-	-	-	8,073	125	673	-	164,987 576,524	25,123 25,123	1,163 1,163
2a.1.1	Totals	613	14,709	18,764	3,714	2,409		614		81,759	81,759	-	-	18,672		125	673		3,148,166		6,240
	l of Major Equipment																				
2a.1.2	Main Turbine/Generator	=	331	172	64	527		-	283	1,752	1,752	-	Ē	2,131		-	-	-	203,265	4,667	-
2a.1.3	Main Condensers	-	2,801	109	62	705	533	-	960	5,170	5,170	-	•	3,800	1,587	-	-	-	271,824	39,151	-
Cascadii 2a.1.4.1	ng Costs from Clean Building Demolition Reactor	_	794	_	_			_	119	913	913	_	_	_	_	_		_	_	7,589	_
2a.1.4.1		-	221	-	-	-	-	-	33	254	254	-	-	-	-		-	-	-	1,309	-
2a.1.4.3		-	9	-	-	-	-	-	1	10	10	-	=	-	-	-	-	-	-	65	-
2a.1.4	Totals	-	1,023	-	-	-	÷	-	154	1,177	1,177	-	÷	÷	-	-	-	-	-	8,963	-
	of Plant Systems		6						1	-			-							00	
2a.1.5.1 2a.1.5.2		-	29	-	-	-	-	-	1	33	-	-	33	-	-	-		-	-	90 422	-
2a.1.5.3		-	46	-	-	-	-	-	7	53	-	-	53	_	-	-	_	-	-	676	-
2a.1.5.4		-	38	0	1	30	-	-	14	84	84	-	=	178	-	-	-	-	7,214	486	-
2a.1.5.5		-	90 40	- 0	- 2	40	-	-	13 16	103 99	99	-	103	- 0.40	-	-	-	-	0.501	1,331	-
2a.1.5.6 2a.1.5.7		-	40 17	0	2	40	_	-	3	20	- 99	-	20	240	-	-	_	-	9,761	468 261	-
2a.1.5.8		-	3	0	0	3	-	-	1	7	7	-	-	16	-	-	_	-	634	31	-
2a.1.5.9		-	27	-	-	-	-	-	4	32	-	-	32	-	-	-	-	-	-	401	-
	) Condensate	-	525	-	-	-	-	-	79	603	-	-	603	-	-	-	-	-	-	7,537	-
	1 Condensate Polishing 2 Condensate Polishing - RCA	-	208 38	1	- 4	81	-	-	31 22	239 145	145	-	239	483	-		-		19,616	2,987 493	-
	B Electro-Hydraulic	- -	10	-		-	-	-	1	11	-	-	11	-	-	-	-	-	-	143	-
2a.1.5.14	4 External Circulating Water	-	26	-	-	-	-	-	4	30		-	30	-	-	-	-	-	-	385	-
	5 External Circulating Water - RCA	-	72 127	1	5	121	-	-	37	237 146	237	-	1.10	721	-	-	-	-	29,284	938	-
	6 Feedwater 7 Feedwater - RCA	-	248	- 8	31	694	_	-	19 171	1,152	1,152	-	146	4,147	-	-	_	-	168,414	1,840 3,377	-
	B Gland Seal	-	34	-	-	-	-	-	5	39	1,102	-	39		-	-	_	-	100,414	504	-
	Heater Drain	-	384	-	-	-	-	-	58	441	-	-	441	-	-	-	-	-	-	5,638	=
	Hypobromous Acid Feed	-	6				-	-	1	7	-	-	7	- 0	-	-	-	-	-	86	-
	1 Hypobromous Acid Feed - RCA 2 Internal Circ Water & CDSR	<u>-</u>	1 25	0	0	0	-	-	0	2 29	2	-	29	2	-	-	-	-	100	12 366	-
	3 Main Gen/Exciter/Transformer	-	0	-	-		-	-	0	0	-	-	0	-				-	-	5	-
2a.1.5.24	4 Main Steam	-	101	-	-	-	-	-	15	116	-	-	116	-	-	-	-	-	-	1,482	-
	5 Main Steam - RCA	-	380	11	38	864	-	-	231	1,525	1,525	-	-	5,166		-	-	-	209,799	5,146	-
	Repairable Spare Snubbers	-	6 2	0	0	2	-	-	2	10	10	-	- 2	12	-	-	-	-	490	82 32	-
	7 Steam Exclusion 8 Steam Exclusion - RCA	-	4	- 0	- 0	4	-	-	0 2	10	10	-	2	24	-	-	-	-	966	32 47	-
	9 Steam Generator Blowdown	-	416	21	27	319	215	-	212	1,210	1,210	- -	-	1,906		-	-	-	118,130	5,778	-
2a.1.5.30	) Steam Generators	-	5	-	-	-	-	-	1	6	-	-	6	-	-	-	-	-	-	75	-

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Table F-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(	Justinus	of 2020 Dollars	-,											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity		Decon		Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C		Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Disposal	of Plant Systems (continued)																				
2a.1.5.31	Turbine & Moisture Separators	-	377	-	-	-	-	-	57	434	-	-	434	-	-	-	-	-	-	5,472	-
	Turbine Oil Purification	-	53	-	-	-	-	-	8	61	-	-	61	-	-	-	-	-	-	757	-
	Water Treatment Water Treatment - RCA	-	453 20	- 0	1	19	-	-	68 8	521 49	49	-	521	115	-	-	-	-	4,652	6,677 252	-
2a.1.5	Totals	-	3,817	43	108	2,177	215	-	1,100	7,461	4,528	-	2,933	13,010		-	-	-	569,060	54,280	-
2a.1.6	Scaffolding in support of decommissioning	-	3,020	22	10	188	30	-	794	4,064	4,064		-	1,012	89	_	-	-	51,216	26,270	-
2a.1	Subtotal Period 2a Activity Costs	613		19,110	3,959	6,005	19,635	614	25,745	101,384	98,450	_	2,933	38,625		125	673	_	4,243,531	209,060	6,240
	Additional Costs Retired RPV upper internals package		257	387	217	.,	1,394	-	1,041	3,296	3,296		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		376				50,164	3,333	133
2a.2.1 2a.2	Subtotal Period 2a Additional Costs	-	257 257	387	217	-	1,394	-	1,041	3,296	3,296	-	-	-	376			-	50,164	3,333	133
Period 2a	Collateral Costs																				
2a.3.1	Process decommissioning water waste	49	-	33	60	-	134	-	70	347	347	-	-	-	308	-	-	-	18,487	60	-
2a.3.3	Small tool allowance	-	269	-	-	-	-	-	40	309	278	-	31	-	-	-	-	-	-	-	-
2a.3.4	Spent Fuel Capital and Transfer	-	-	-	-	-	-	13,363	2,004	15,368	0.445	15,368	-	-	-	-	-	-	-	-	-
2a.3.5 2a.3.6	Retention and Severance Prairie Island Indian Community Payments	-	-	-	-	-	-	8,215 1,780	1,232	9,447 1,780	9,447	1,780	-	-	-	-	-	•	-	-	-
2a.3.0 2a.3	Subtotal Period 2a Collateral Costs	49	269	33	60	-	134	23,358	3,347	27,250	10,072			-	308	-	-	-	18,487	60	-
Poriod 2a	Period-Dependent Costs																				
2a.4.1	Decon supplies	107	_	_	_	_	-	_	27	134	134	-	-	-	-		_		_	-	-
2a.4.2	Insurance	-	-	-	-	-	-	690	69	759	759	_	-	-	-	-	_	-	-	-	-
2a.4.3	Property taxes	=	-	-	-	-	-	4,548	455	5,002	5,002	-	-	-	-	-	-	-	-	-	=
2a.4.4	Health physics supplies	-	2,103	-	-	-	-	-	526	2,629	2,629	-	-	-	-	-	-	-	-	-	-
2a.4.5	Heavy equipment rental	-	3,565	- 00	-	-	- 050	-	535	4,100	4,100	-	-	-	4.045	-	-	-	- 00.001	- 140	-
2a.4.6 2a.4.7	Disposal of DAW generated Plant energy budget	-	-	86	35	-	358	2,194	103 329	582 2,523	582 2,523	-	-	-	4,345	-	-	-	86,891	142	-
2a.4.8	NRC Fees	-	-	-	-	-	-	526	53	578	578	-	-	-	-	-	-	-	-	-	-
2a.4.9	Emergency Planning Fees	-	-	-	-	-	-	2,647	265	2,912	-	2,912	-	-	-	-	-	-	-	-	-
2a.4.10	Fixed Overhead	-	-	-	-	-	-	1,695	254	1,949	1,949	-	-	-	-	-	-	-	-	-	-
2a.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	602	90	692	-	692		-	-	-	-	-	-	-	-
2a.4.12	ISFSI Operating Costs	-	-	-	-	-	-	80	12	92	-	92	-	-	-	-	-	-	-	-	-
2a.4.13 2a.4.14	Railroad Track Maintenance Remedial Actions Surveys	-	-	-	-	-	-	318 1,596	48 239	366 1,835	366 1,835	-	-	-	-	-	-	-	-	-	-
2a.4.14	Security Staff Cost	-	-	-	-	-	-	10,900	1,635	12,534	12,534	-	-	-	-	-	-	-	-	-	160,018
2a.4.16	DOC Staff Cost	-	-	-	-	-	-	20,663	3,099	23,763	23,763	-	-	-	-	-	-	-	-	-	225,210
2a.4.17	Utility Staff Cost	-	-	-	-	-	-	27,056	4,058	31,115	31,115	-	-	-	-	-	-	-	-	-	419,049
2a.4	Subtotal Period 2a Period-Dependent Costs	107	5,668	86	35	-	358	73,514	11,797	91,565	87,870	3,696	-	-	4,345	-	-	-	86,891	142	804,276
2a.0	TOTAL PERIOD 2a COST	770	31,895	19,616	4,270	6,005	21,522	97,486	41,931	223,495	199,687	20,843	2,964	38,625	38,584	237	673	-	4,399,073	212,595	810,649
PERIOD	2b - Site Decontamination																				
Period 2b	Direct Decommissioning Activities																				
	of Plant Systems																				
2b.1.1.1	ADT & Misc Ventilation	-	25	1	1	26	3	-	11	66	66	-	-	153		-	-	-	6,803	363	-
2b.1.1.2	Aux Bldg Normal Ventilation	-	69	2	6	116	13	-	39	246	246	-	-	692		-	-	-	30,595	1,013	-
2b.1.1.3 2b.1.1.4	Aux Bldg Special Ventilation Battery Rm Special Ventilation	=	14	0	1	12	2	-	6	34	34	-	- 2	70	6	-	-	-	3,234	197 24	-
2b.1.1.4 2b.1.1.5	Boron Recycle	. 0	4	0	0	- 0	3		2	10	10	-		3	9	-	-	-	700	50	-
2b.1.1.6	Chemical & Volume Control	749	942	62	57	394	677	-	853	3,736	3,736	-	-	2,356		-	-	-	223,753	23,197	-
2b.1.1.7	Cold Chemical Lab Ventilation	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	9	-
2b.1.1.8	Component Cooling - RCA	-	647	25	88	2,007	-	-	479	3,246	3,246	-		11,996	-	-	-	-	487,169	8,583	-
2b.1.1.9	Containment Cooling	-	35 302	- 6	20	459	-	-	5	40	- 024	-	40		-	-	-	-	111.000	502	-
	Containment Cooling - RCA Containment Hydrogen Control - RCA	-	302 36	6	20	459 24	-	-	148 13	934 74	934 74	-	-	2,743 141		-	-	-	111,390 5,742	3,949 494	-
	Containment Trydrogen Control - KCA Containment Spray - RCA	-	194	3	11	243	-	-	87	538	538	-	-	1,453		-		-	59,019	2,617	-
	Containment Ventilation	- -	235	23	49	790	243	-	248	1,587	1,587	-	-	4,721		-	-	-	237,643	3,375	-
2b.1.1.14	Control/Relay/Cmptr Rm Vent	=	31	1	2	44	7	-	17	102	102	-	-	260			-	-	11,878	454	-
	Cooling Water	-	159	-	-		-	-	24	183		-	183	-	-	-	-	-		2,344	-
	Cooling Water - RCA	-	476	17	62	1,412	-	-	342	2,310 25	2,310	-	-	8,442		-	-	-	342,822	6,311	-
	Cranes/Hoists/Elevators - RCA D3 Emergency Diesel	-	3 10	0	1	17	-	-	4 2	25 12	25	-	12	103	-	-	-	-	4,184	48 141	-
	D4 Emergency Diesel	-	10	-	-	-	-	-	2	12		-	12	-	-	-	-	-	-	141	-
-0.1.1.10		-	10	-	_	-	-	-	-	14	_	-	12	-	-	-	_	_	-	1.41	-

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Table F-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

									or 2020 Domar.												
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Volumes		Burial /		Utility and
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B	Class C Cu. Feet	GTCC Cu. Foot	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. reet	Cu. reet	Cu. reet	Cu. Feet	Cu. reet	Wt., Lbs.	Mannours	Mannours
	of Plant Systems (continued)																				
	D5 Emergency Diesel Electrical - Clean	-	0 1,714	-	-	-	-	-	0 257	0 1,972	-	-	0 1,972	-	-	-	-	-	-	5 24,276	-
	Electrical - Clean Electrical - Contaminated	-	1,714	- 5	16	334	25	-	178	1,972	1.034	-	1,972	1.997	- 75	-	-	-	85,887	6,503	-
2b.1.1.23	Electrical - Decontaminated	-	2,955	38	138	3,138	-	-	1,234	7,503	7,503	-	-	18,753	-	-	-	-	761,569	38,423	-
	Filter Rm Ventilation	-	5	0	0	4	0	-	2	11	11	-	-	24	1	-	-	-	1,017	69	-
	Fire Protection & Detection Fire Protection & Detection - RCA	-	204 246	- 4	13	306	-	-	31 110	235 679	679	-	235	1,828	-	-	-	-	74,245	3,009 3,134	-
	Fuel Handling	-	74	1	2	34	17	-	28	156	156	-	-	200	49	-	-	-	11,273	1,101	-
	Fuel Oil	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	9	-
	HVAC - Clean HVAC - Contaminated	-	151 1,231	29	- 07	1 700	136	-	23 627	174 3.908	3,908	-	174	10.745	405	-	-	-	462,103	2,373 16,579	-
	Heating	-	322	- 29	87	1,798	136	-	48	370	3,908	-	370	10,745	405	-			462,105	4.804	-
	Heating - RCA	-	337	4	14	319	-	-	135	809	809	-	-	1,907	-	-	-	-	77,458	4,086	-
	Hot Lab & Sample Rm Ventilation	-	20	0	1	18	1	-	8	48	48	-	-	107	4	-	-	-	4,622	285	-
	Incore Instrumentation Misc Drains & Vents	0	30 234	1 12	2 12	10 77	20 145	-	14 109	77 590	77 590	-	-	60 458	58 426	-	-	-	6,143 46,079	458 3,180	-
	Misc Lab & Service Areas Vent	-	129	8	8	62	84	-	65	356	356	-	-	370	244	-		-	30,899	1,713	-
	Miscellaneous Gas	-	72	-	-	-		-	11	83	-	-	83	-	-	-	-	-	-	1,073	-
	Miscellaneous Gas - RCA	-	134	1	4	100	-	-	49	289	289	-		600	-	-	-	-	24,378	1,636	-
	Radiation Monitoring Radiation Monitoring - RCA	-	7 65	. 1	- 2	- 53	-	-	$\frac{1}{25}$	9 145	145	-	9	316	-	-	-	-	12,826	111 782	-
	Reactor Coolant	163	236	20	16	38	249	-	213	937	937	-	-	229	730				56,440	5,517	-
2b.1.1.42	Reactor Hot Sampling	140	126	11	7	9	108	-	132	533	533	-	-	54	312	-	-	-	22,678	3,686	-
	Reactor Makeup	-	41			-	-	-	6	47		-	47		-	-	-	-		583	-
	Reactor Makeup - RCA Reactor Vessel	9	4 18	0	0	5	- 5	-	2 11	11 47	11 47	-	-	28 22	14	-	-	-	1,148 1,816	47 385	-
	Residual Heat Removal	348	393	84	86	477	1,102	-	641	3,132	3,132	-	-	2,853	3,244	-	-	-	324,232	7,112	-
	Safeguards Chilled Water	-	5	-	-	-	-,	-	1	6	-,	-	6	-,	-,	-	-	-		75	-
	Safety Injection	-	874	42		1,117	395	-	500	3,000	3,000	-	-	6,676	1,161	-	-	-	345,708	12,284	-
	Sampling Service Bldg & New Cmptr Vent	-	52 0	3	2	6	32	-	23	119 0	119	-	- 0	37	93	-	-	-	7,628	714 6	-
	Shield Bldg Ventilation	-	120	13	25	339	163	-	127	787	787	-	-	2,028	484	-			113,139	1,743	-
	Station & Instrument Air	-	161	-	-	-	-	-	24	185	-	-	185	-	-	-	-	-	-	2,424	-
	Station & Instrument Air - RCA	-	299	3	12	272	-	-	118	704	704	-	-	1,625	-	-	-	-	65,986	3,638	-
	Turbine Bldg Traps & Drains Turbine Bldg Traps & Drains - RCA	-	30 30	- 0	- 1	30	-	-	5 12	35 73	73	-	35	180	-	-	-	-	7,321	462 344	-
	Turbine Bldg Ventilation	-	46			- 30	-	-	7	73 53	- 13	-	53	180	-	-			7,321	655	-
	Unit Coolers	-	23	-	-	-	-	-	3	26	-	-	26	-	-	-	-	-	-	332	-
	Unit Coolers - RCA	-	56	0	2	39	-	-	20	117	117	-	-	232	-	-	-	-	9,413	690	-
	Waste Gas Disposal	553 1,436	479 1,800	43 116		410 612	464 1,234	-	585 1,595	2,581	2,581 6,893	-	-	2,453 3,655	1,358 3,594	-	-	-	187,339	14,308 44,485	-
	Waste Liquid Disposal Waste Solid Disposal	1,436	1,800	116		65	1,234	-	1,595	6,893 622	6,893	-	-	3,655	3,594	-	-	-	381,754 41,177	3,481	-
2b.1.1	Totals	3,515	16,542	596		15,220	5,264	-	9,399	51,516	48,072	-	3,444	90,963	15,429	-	-	-	4,689,210	270,390	-
				.=																	
2b.1.2	Scaffolding in support of decommissioning	-	3,775	27	13	235	37	-	993	5,081	5,081	-	-	1,265	112	-	-	-	64,020	32,837	-
Decontar	mination of Site Buildings																				
2b.1.3.1	Reactor	1,215	2,808	240	1,236	373	13,625	-	4,981	24,479	24,479	-	-	2,230	83,434	-	-	-	3,633,771	50,962	-
2b.1.3.2	Auxiliary	1,292	422	23		177	648 97	-	960	3,639	3,639	-	-	1,060	6,118 929	-	-	-	332,495 43,896	23,821 301	-
2b.1.3.3 2b.1.3.4	Backwash Waste Receiving Tank Drum Transfer & Truck Loading Enclosure	18	28 9	3	17 3	3	97 14	-	34 16	179 63	179 63	-	-	19	929 135	-			43,896 7,118	301 369	-
2b.1.3.5	LLRW Storage Enclosure	123	54	3	17	6	96	-	103	403	403	-	-	38	920	-	-	-	44,971	2,426	-
2b.1.3.6	Radwaste	55	24	1	8	7	43	-	47	185	185	-	-	42	412	-	-	-	21,136	1,083	-
2b.1.3.7	Resin Disposal	16	12	1	3	14	14 505	-	17	76	76	-	-	83	124	-	-	-	9,271	383	-
2b.1.3	Totals	2,720	3,357	271	1,400	581	14,537	-	6,158	29,024	29,024	-	=	3,471	92,071	-	-	-	4,092,658	79,343	-
2b.1.4	Prepare/submit License Termination Plan	-	-	-	-	-	-	225	34	259	259	-	-	-	-	-	-	-	-	-	1,751
2b.1.5	Receive NRC approval of termination plan									a											
2b.1	Subtotal Period 2b Activity Costs	6,235	23,674	895	2,393	16,035	19,839	225	16,584	85,879	82,435	-	3,444	95,700	107,611	-	-	-	8,845,887	382,570	1,751
Period 91	o Additional Costs																				
2b.2.1	Operational Equipment	-	-	11	36	606	-	-	97	751	751	-	-	5,880	-	-	-	-	147,000	16	-
2b.2.2	Excavation of Underground Services	-	1,175	-	-	-	-	225	328	1,728	1,728	-	-	-	-	-	-	-	-	7,411	-
2b.2.3	Security Modifications	-	1 175	-	- 00	-	-	4,348	652	5,000	5,000	-	-	F 000	-	-	-	-	145.000	- 405	-
2b.2	Subtotal Period 2b Additional Costs	-	1,175	11	36	606	-	4,573	1,077	7,478	7,478	-	-	5,880	-	-	-	-	147,000	7,427	-

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Table F-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(111)	Jusanus C	or 2020 Domars	<b>-</b> )											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet		Craft Manhours	Contractor Manhours
Pariod 9	b Collateral Costs																		,		
2b.3.1	Process decommissioning water waste	166	_	113	203	_	456	_	239	1,176	1,176	_	_	_	1,047	_	_	_	62,844	204	_
2b.3.2	Process decommissioning water waste	3	_	119	390	_	893	-	295	1,699	1,699	_	_	_	1,154	_	_	_	122,948	216	_
2b.3.3	Small tool allowance	-	446		-	-	-	-	67	513	513	-	-	-	-,	_	-	-	,	-	-
2b.3.4	Spent Fuel Capital and Transfer	-	- 1	-	-	-	-	51,308	7,696	59,005	-	59,005	-	-	-	-	-	-	-	-	-
2b.3.5	Retention and Severance	-	-	-	-	-	-	2,839	426	3,265	3,265	-	-	-	-	-	-	-	-	-	-
2b.3.6	Prairie Island Indian Community Payments	-	-	-	-	-	-	1,348	-	1,348	-	1,348	-	-	-	-	-	-	-	-	-
2b.3.7	On-site survey and release of 0.437 tons clean metallic waste	-	-	-	-	-	-	1	0	1	1	-	-	-	-	-	-	-	-	-	-
2b.3	Subtotal Period 2b Collateral Costs	169	446	232	592	-	1,349	55,497	8,723	67,007	6,654	60,353	-	-	2,201	-	-	-	185,792	420	-
	b Period-Dependent Costs	1 010							205	1 504	1 504										
2b.4.1	Decon supplies	1,219	-	-	-	-	-	-	305	1,524	1,524	-	-	-	-	-	-	-	-	-	-
2b.4.2	Insurance	-	-	-	-	-	-	523 3,075	52 308	575 3,383	575 3,383	-	-	-	-	-	-	-	-	-	-
2b.4.3 2b.4.4	Property taxes Health physics supplies	-	2,866	-	-	-	-	3,073	716	3,582	3,582	-	-	-	-	-	-	-	-	-	-
2b.4.4 2b.4.5	Heavy equipment rental	-	2,774		-	-	-	-	416	3,190	3,190	-	-	-	-		-	-	-		-
2b.4.6	Disposal of DAW generated	_	2,114	103	42	_	429	-	124	698	698	_	_	_	5,209	_	_	_	104,172	170	_
2b.4.7	Plant energy budget	_	_	-		-	-	1.313	197	1.509	1.509	_	_	-		_	_	-		-	_
2b.4.8	NRC Fees	-	-	-	-	-	-	398	40	438	438	-	-	-	-	-	-	-	-	-	-
2b.4.9	Emergency Planning Fees	-	-	-	-	-	-	2,006	201	2,207	-	2,207	-	-	-	-	-	-	-	-	-
2b.4.10	Fixed Overhead	-	-	-	-	-	-	1,284	193	1,477	1,477	´-	-	-	-	-	-		-	-	-
2b.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	456	68	524	-	524	-	-	-	-	-	-	-	-	-
2b.4.12	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	229	34	264	264	-	-	-	-	-	-	-	-	-	-
2b.4.13	ISFSI Operating Costs	-	-	-	-	-	-	60	9	69	-	69	-	-	-	-	-	-	-	-	-
2b.4.14	Railroad Track Maintenance	-	-	-	-	-	-	67	10	78	78	-	-	-	-	-	-	-	-	-	-
2b.4.15	Remedial Actions Surveys	-	-	-	-	-	-	1,209	181	1,391	1,391	-	-	-	-	-	-	-	-	-	
2b.4.16	Security Staff Cost	-	-	-	-	-	-	8,259	1,239	9,497	9,497	-	-	-	-	-	-	-	-	-	121,244
2b.4.17 2b.4.18	DOC Staff Cost Utility Staff Cost	-	-	-	-	-	-	15,117 19,642	2,268 2,946	17,385 22,588	17,385 22,588	-	-	-	-	-	-	-	-	-	163,904 304,233
2b.4.18 2b.4	Subtotal Period 2b Period-Dependent Costs	1,219	5,640	103	42	-	429	53,639	2,946 9,307	70,380	67,579	2,800	-	-	5,209	-	-	-	104,172	170	589,381
								,					-	•		-		-			
2b.0	TOTAL PERIOD 2b COST	7,623	30,935	1,242	3,063	16,641	21,617	113,934	35,690	230,744	164,147	63,153	3,444	101,580	115,021	-	-	-	9,282,851	390,587	591,132
PERIO	O 2d - Decontamination Following Wet Fuel Storage																				
	d Direct Decommissioning Activities																				
2d.1.1	Remove spent fuel racks	347	35	86	41	•	703	-	373	1,585	1,585	-	-	-	2,092	-	-	-	132,919	576	-
	of Plant Systems																				
2d.1.2.1		-	203		7	145	11	-	77	445	445	-	-	864		-	-	-	37,167	2,783	-
2d.1.2.2		-	1,269		59	1,350	-	-	530	3,225	3,225	-	-	8,069		-	-	-	327,668	16,495	-
2d.1.2.3	Fire Protection & Detection - RCA Fuel P	-	37		2	48	- 01	-	17	105	105	-	-	286		-	-	-	11,622	476	-
2d.1.2.4 2d.1.2.5		-	553 5	13 0	39 0	808 4	61	-	282 2	1,756 11	1,756 11	-	-	4,828 26		-	-	-	207,612 1.045	7,448 51	-
2d.1.2.6		32	36	-	2	6	37	-	36	152	152	-	-	39		-	-	-	8,481	882	-
2d.1.2.7		- 52	27		2	44	4	-	15	93	93	-	-	265			-	-	11,505	394	-
2d.1.2	Totals	32	2,130		112	2,405	113	-	958	5,786	5,786	-	-	14,376		-	-	-	605,100	28,530	-
Deconts	mination of Site Buildings																				
2d.1.3.1		1,029	1,138	13	45	404	195	-	916	3,741	3,741	-	-	2,417	1,652	-	-	-	177,755	30,404	-
2d.1.3	Totals	1,029	1,138		45	404	195	-	916	3,741	3,741	-	-	2,417		-	-	-	177,755	30,404	-
2d.1.4	Scaffolding in support of decommissioning	-	755	5	3	47	7	-	199	1,016	1,016	-	-	253	22	-	-	-	12,804	6,567	-
2d.1	Subtotal Period 2d Activity Costs	1,408	4,058	141	202	2,857	1,018	-	2,445	12,128	12,128	-	-	17,046	4,099	-	-	-	928,579	66,078	
		,	,				,		,	, ,	,			, ,	, ,				, -	,	
Period 2 2d.2.1	d Additional Costs License Termination Survey Planning						_	1,037	311	1,348	1,348									_	6,240
2d.2.1 2d.2	Subtotal Period 2d Additional Costs	-	-	-	-	-	-	1,037	311	1,348	1,348	-	-	-	-	-	-	-	-	-	6,240
Period 2	d Collateral Costs																				
2d.3.1	Process decommissioning water waste	45	-	31	56	-	126	-	65	323	323	-	-	-	288	-	-	-	17,293	56	-
2d.3.2	Process decommissioning chemical flush waste	0	-	1	5	-	10	-	3	20	20	-	-	-	13	-	-		1,422	2	-
2d.3.3	Small tool allowance	-	83	-	-	-	-	-	12	95	95	-	-	-	-	-	-	-	-	-	-
2d.3.4	Decommissioning Equipment Disposition	-	-	130	67	1,112	178	-	234	1,722	1,722	-	-	6,000		-	-	-	303,608	147	-
2d.3.5	Prairie Island Indian Community Payments	-	-	-	-	-	-	975	-	975		975	-	-	-	-	-	-		-	-
2d.3	Subtotal Period 2d Collateral Costs	45	83	162	128	1,112	314	975	316	3,135	2,160	975	-	6,000	831	-	-	-	322,324	206	-

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Table F-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Provint V	Volumes		Burial /		Utility and
Activity	•	Decon	Removal	Packaging	Transport	Processing	LLKW Disposal	Other	Total	Total	NKU Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index		Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet			Cu. Feet		Wt., Lbs.	Manhours	Manhours
Period 2d	Period-Dependent Costs																				
2d.4.1	Decon supplies	236	-	-	-	-	-	-	59	295	295	-	-	-	-	_	_	-	-	-	-
2d.4.2	Insurance	-	-	-	-	-	-	378	38	416	416	-	-	-	-	-	-	-	-	-	-
2d.4.3	Property taxes	-	-	-	-	-	-	2,004	200	2,204	2,204	-	-	-	-	-	-	-	-	-	-
2d.4.4	Health physics supplies	-	794	-	-	-	-	-	198	992	992	-	-	-	-	-	-	-	-	-	-
2d.4.5	Heavy equipment rental	-	2,007	-	-	-	-	-	301	2,308	2,308	-	-	-	-	-	-	-	-	-	-
2d.4.6 2d.4.7	Disposal of DAW generated Plant energy budget	-	-	40	16	-	165	506	48 76	268 582	268 582	-	-	-	2,002	-	-	-	40,031	65	-
2d.4.7 2d.4.8	NRC Fees	-	-	-	-	-		277	28	305	305	-	-	-	-			-	-	-	-
2d.4.9	Emergency Planning Fees	-		-	-	-	-	58	6	64	-	64	-	-	-	_	-	-	-	-	-
2d.4.10	Fixed Overhead	_	_	-	-	-	-	929	139	1,068	1,068	-	-	-	-	_	-	_	-	_	-
2d.4.11	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	332	50	381	381	-	-	-	-	-	-	-	-	-	-
2d.4.12	ISFSI Operating Costs	-	-	-	-	-	-	44	7	50	-	50	-	-	-	-	-	-	-	-	-
2d.4.13	Railroad Track Maintenance	-	-	-	-	-	-	49	7	56	56	-	-	-	-	-	-	-	-	-	-
2d.4.14	Remedial Actions Surveys	-	-	-	-	-	-	875	131	1,006	1,006	-	-	-	-	-	-	-	-	-	-
2d.4.15	Security Staff Cost	-	-	-	-	-	-	5,782	867	6,649	4,694	1,955	-	-	-	-	-	-	-	-	84,454
2d.4.16	DOC Staff Cost	-	-	-	-	-	-	6,401	960	7,361	7,361	-	-	-	-	-	-	-	-	-	70,243
2d.4.17	Utility Staff Cost	-	2,801	- 40	- 10	-	165	8,100 25,734	1,215	9,315 33,321	8,858 30,796	456 2,525	-	-	- 0.000	-	-	-	40.001	- 65	126,681 281,377
2d.4	Subtotal Period 2d Period-Dependent Costs	236	2,801	40	16	-	160	25,734	4,330	33,321	30,796	2,525	-	-	2,002	-	-	-	40,031	69	281,377
2d.0	TOTAL PERIOD 2d COST	1,689	6,941	343	346	3,969	1,496	27,746	7,403	49,932	46,432	3,501	-	23,046	6,931	-	-	-	1,290,933	66,348	287,617
PERIOD	2f - License Termination																				
Period 2f	Direct Decommissioning Activities																				
2f.1.1	ORISE confirmatory survey	-	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-
2f.1.2	Terminate license									a											
2f.1	Subtotal Period 2f Activity Costs	-	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-
	Additional Costs																				
2f.2.1	License Termination Survey	-	-	-	-	-	-	7,041	2,112	9,154	9,154	-	-	-	-	-	-	-	-	100,895	3,120
2f.2	Subtotal Period 2f Additional Costs	-	-	-	-	-	-	7,041	2,112	9,154	9,154	-	-	-	-	-	-	-	-	100,895	3,120
Period 2f	Collateral Costs																				
2f.3.1	DOC staff relocation expenses	-	-	-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-
2f.3.2	Prairie Island Indian Community Payments	-	-	-	-	-	-	934	-	934	-	934	-	-	-	-	-	-	-	-	-
2f.3	Subtotal Period 2f Collateral Costs	-	-	-	-	-	-	2,198	190	2,388	1,454	934	-	-	-	-	-	-	-	-	-
	Period-Dependent Costs																				
2f.4.1	Insurance	-	-	-	-	-	-	362	36	398	398	-	-	-	-	-	-	-	-	-	-
2f.4.2	Property taxes	-	-	-	-	-	-	1,771	177	1,948	1,948	-	-	-	-	-	-	-	-	-	-
2f.4.3	Health physics supplies	-	710	٠	-	-	-	-	178	888	888	-	-	-	-	-	-	-	-	-	-
2f.4.4	Disposal of DAW generated	-	-	7	3	-	28	- 0.40	8	45	45	-	-	-	334	-	-	-	6,685	11	-
2f.4.5	Plant energy budget	-	-	-	-	-	-	243 263	36 26	279	279	-	-	-	-	-	-	-	-	-	-
2f.4.6 2f.4.7	NRC Fees Emergency Planning Fees	-	-	-	-	-	-	263 55	6	290 61	290	61	-	-	-	-	-	-	-	-	-
2f.4.8	Fixed Overhead	•	-	-	-	-	-	890	133	1,023	1,023	01	-	-	-	-	-	-	-	-	-
2f.4.9	ISFSI Operating Costs	_			_			42	6	48	1,025	48	_							_	_
2f.4.10	Railroad Track Maintenance	-	-	-	-	-	-	47	7	54	54	- 40	-	-	-		-	-	-	-	-
2f.4.11	Security Staff Cost	_	-	-	-	-	-	5,538	831	6,369	4,497	1,873	_	_	-	_	_	-	-	-	80,898
2f.4.12	DOC Staff Cost	=	-	-	-	-	-	4,238	636	4,874	4,874	-,	-	-	-	-	-	-	-	-	46,283
2f.4.13	Utility Staff Cost	-	-	-	-	-	-	4,011	602	4,613	4,175	438	-	-	-	-	-	-	-	-	59,507
2f.4	Subtotal Period 2f Period-Dependent Costs	-	710	7	3	-	28	17,461	2,682	20,890	18,470	2,420	-	-	334	-	-	-	6,685	11	186,687
2f.0	TOTAL PERIOD 2f COST	-	710	7	3	-	28	26,867	5,034	32,648	29,294	3,354	-	-	334	-	-	-	6,685	100,906	189,807

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Table F-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(The	ousands o	of 2020 Dollars	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Dunial	Volumes		Burial /		Utility and
Activity		Decon	Removal	Packaging	Transport		Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet			Cu. Feet		Wt., Lbs.	Manhours	
PERIOD	3b - Site Restoration																				
Period 3b	Direct Decommissioning Activities																				
	n of Remaining Site Buildings																				
3b.1.1.1		=	4,645		-	-	-	-	697	5,342	-	-	5,342	-	-	-	-	-	-	44,679	
	Auxiliary Condensate Storage Tank Foundation	-	1,993 7	-	-	-	-	-	299 1	2,291	-	-	2,291 8	-	-	-	-	-	-	11,902 33	
	Construction Warehouse & Fab Shop	-	130	-	-	-	-	-	19	149	-	-	149	-	-	-	-	-	-	1,405	
	D3/D4 Emergency Generator	-	14		_	_	-	-	2	16	-	-	16	-	-	_	-	-	-	84	
	Drum Transfer & Truck Loading Enclosure	-	20		-	-	-	-	3	24	-	-	24	-	-	-	-	-	-	221	-
	Hydrogen House	-	6		-	-	-	-	1	7	-	-	7	-	-	-	-	-	-	47	
3b.1.1.8	LLRW Storage Enclosure	-	128		-	-	-	-	19	147	-	-	147	-	-	-	-	-	-	853	
	Misc Structures 2017	-	2,617 176		-	-	-	-	393 26	3,009 202	-	-	3,009	-	-	-	-	-	-	22,582	
3b.1.1.10	Radwaste Resin Disposal	-	176		-	-	-	-	26	202 16	-	-	202 16	-	-	-	-	-	-	1,400 120	
	Structures below 3' below grade		1,785		-		-	-	268	2,052	-	-	2.052	-	-	-	-	_	-	9,238	
	Sulfuric Acid Tank Enclosure	-	3		_	_	-	-	0	4	-	-	2,002	-	-	_	-	-	-	35	
3b.1.1.14		-	2,140	-	-	-	-	-	321	2,461	-	-	2,461	-	-	-	-	-	-	21,997	
3b.1.1.15	Turbine Pedestal	-	365	-	-	-	-	-	55	420	-	-	420	-	-	-	-	-	-	1,857	-
	Warehouse #2	-	24		-	-	-	-	4	27	-	-	27	-	-	-	-	-	-	213	
	Waste Neutralizing Tank House	-	7		-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	56	
	Waste Oil Storage	-	9		-	-	-	-	1	10	-	-	10	-	-	-	-	-	-	70	
	Water Treatment Fuel Handling of Aux Building	-	324 1.095		-	-	-	-	49 164	373 1,259	-	-	373 1.259	-	-	-	-	-	-	2,690 8,240	
	Totals	-	15,501		-	-	-	-	2,325	17,826	-	-	17,826	-	-	-	-	-	-	127,723	
00.1.1	Totals		10,001						2,020	11,020			17,020							121,120	
Site Close	out Activities																				
	Remove Rubble	-	1,330	-	-	-	-	-	200	1,530	-	-	1,530	-	-	-	-	-	-	6,495	
	Grade & landscape site	-	448	-	-	-	-	-	67	515	-	-	515	-	-	-	-	-	-	921	
	Final report to NRC	-	-	-	-	-	-	86	13		99	-	-	-	-	-	-	-	-	-	667
3b.1	Subtotal Period 3b Activity Costs	•	17,279	-	-	-	-	86	2,605	19,969	99	-	19,871	-	-	-	-	-	-	135,138	667
Period 3b	Additional Costs																				
	Clean Concrete Disposal	-	4,912	-	-	-	-	10	738	5,660	-	-	5,660	-	-	-	-	_	-	18,372	-
	Intake Structure Cofferdam	-	442		-	-	-	-	66	508	-	-	508	-	-	-	-	-	-	3,552	
	Construction Debris	-	-	-	-	-	-	2,150		2,473	-	-	2,473	-	-	-	-	-	-	-	-
	Backfill	-	9,257		-	-	-	-	1,388	10,645	-	-	10,645	-	-	-	-	-	-	9,327	
	Disposition of Original Casks	-	24				2,390		728	3,640	3,640		-	-	8,929	-	-	-	1,059,612		
3b.2	Subtotal Period 3b Additional Costs	-	14,634	80	418	-	2,390	2,160	3,244	22,926	3,640	-	19,286	-	8,929	-	-	-	1,059,612	31,397	=
	Collateral Costs																				
	Small tool allowance	-	212	-	-	-	-	-	32	244	-	-	244	-	-	-	-	-	-	-	-
	Prairie Island Indian Community Payments	-	-	-	-	-	-	2,649		2,649	-	2,649		-	-	-	-	-	-	-	-
3b.3	Subtotal Period 3b Collateral Costs	-	212	-	-	-	-	2,649	32	2,893	-	2,649	244	-	-	-	-	-	-	-	-
Period 3b	Period-Dependent Costs																				
3b.4.1	Insurance	-	-	-	-	-	-	513		565	565	-	-	-	-	-	-	-	-	-	-
3b.4.2	Property taxes	-	-	-	-	-	-	4,167		4,583	-	4,583		-	-	-	-	-	-	-	-
	Heavy equipment rental	=	7,144	-	-	-	-	-	1,072	8,215	-	-	8,215	-	-	-	-	-	-	-	-
3b.4.4	Plant energy budget	-	-	-	-	-	-	344	52 22	395 239	-	395	-	-	-	-	-	-	-	-	-
3b.4.5 3b.4.6	NRC ISFSI Fees Emergency Planning Fees	-	-	-	-	-	-	218 157	22 16	239 173	-	239 173	-	-	-	-	-	-	-	-	-
	Fixed Overhead	-	-	-	-	-	-	1,024		1,178	397	781	-	-	-	-	-	-	-	-	-
	ISFSI Operating Costs	-	-	-	-	-	-	119			-	136	-	-	-	-	-		-	-	-
	Railroad Track Maintenance	-	_	_	_	-	-	361	54	416	153		-	-	-	-	-	-	_	-	-
	Security Staff Cost	-	-	-	-	-	-	4,616	692	5,308	-	5,308	-	-	-	-	-	-	-	-	57,340
3b.4.11	DOC Staff Cost	=	-	-	-	-	-	10,921	1,638	12,559	-	· -	12,559	-	-	-	-	-	-	-	116,885
	Utility Staff Cost	-	-	-	-	-	-	5,170		5,946	-	1,278		-	-	-	-	-	-	-	76,637
3b.4	Subtotal Period 3b Period-Dependent Costs	-	7,144	-	-	-	-	27,610	4,960	39,714	1,114	13,158	25,442	-	-	-	-	-	-	-	250,861
3b.0	TOTAL PERIOD 3b COST	-	39,269	80	418		2,390	32,505	10,840	85,502	4,853	15,807	64,843	_	8,929	-	-	-	1,059,612	166,534	251,528
			,					,				,	, , ,							,	, ,

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Table F-2
Prairie Island DECON Unit 2
DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(Th	ousands o	of 2020 Dollars	s)											
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 3c - Fu	el Storage Operations/Shipping																				
Period 3c Direct I	Decommissioning Activities																				
Period 3c Collater																					
	Fuel Capital and Transfer	-	-	-	-	-	-	625,425	93,814		-	719,239	-	-	-	-	-	-	-	-	-
	e Island Indian Community Payments al Period 3c Collateral Costs	-	-	-	-	-	-	219,357 $844,782$	93,814	219,357 938,596	-	219,357 938,596	-	-	-	-	-	-	-	-	-
Period 3c Period-l	Dependent Costs																				
3c.4.1 Insura		-	-	-	-	-	-	42,518	4,252	46,770	-	46,770	-	-	-	-	-	-	-	-	-
	ty taxes SFSI Fees	-	-	-	-	-	-	242,919 19,571	24,292 1,957	267,210 21,528	-	267,210 21,528	-	-	-	-	-	-	-	-	-
	ency Planning Fees	-	-	-	-	-	-	13,018	1,302	14,320	-	14,320	-	-	-	-	-	-	-	-	-
	Overhead	-	-	-	-	-	-	28,613	4,292	32,905	-	32,905	-	-	-	-	-	-	-	-	-
	Operating Costs	-	-	-	-	-	-	9,828	1,474	11,302	-	11,302	-	-	-	-	-	-	-	-	-
	ad Track Maintenance ty Staff Cost	-	-	-	-	-	-	10,979 382,242	1,647 57,336	12,626 439,578	-	12,626 439,578	-	-	-	-	-		-	-	4,748,37
	Staff Cost	-	-	-	-	_	-	26,917	4,038	30,955	-	30,955	-	-	-	-	-	-	-	-	182,63
	Staff Cost	-	-	-	-	-	-	165,731	24,860	190,591	-	190,591	-	-	-	-	-	-	-	-	2,419,84
3c.4 Subtot	al Period 3c Period-Dependent Costs	-	-	-	-	-	-	942,335	125,449	1,067,784	-	1,067,784	-	-	-	-	-	-	-	-	7,350,84
3c.0 TOTAL	L PERIOD 3c COST	-	-	-	-	-	-	1,787,117	219,263	2,006,380	-	2,006,380	-	-	-	-	-	-	-	-	7,350,84
PERIOD 3d - GT	FCC shipping																				
Period 3d Direct I	Decommissioning Activities																				
Nuclear Steam Su	ipply System Removal																				
3d.1.1.1 Vessel	& Internals GTCC Disposal	-	-	1,444	-	-	8,680	-	1,663	11,787	11,787	-	-	-	-	-	-	1,773	344,823	-	-
3d.1.1 Totals	al Period 3d Activity Costs	-	-	1,444	-	-	8,680 8,680	-	1,663 1,663	11,787	11,787	-	=	-	-	-	-	1,773	344,823 344,823	÷	-
	•	-	-	1,444	-	-	8,680	-	1,663	11,787	11,787	-	-	-	-	-	-	1,773	344,823	-	-
Period 3d Collater 3d.3.1 Spent	ral Costs Fuel Capital and Transfer							28	4	32		32									
	e Island Indian Community Payments	-	-	-	-	-	-	48	- 4	48	-	48	-	-	-	-	-	-	-	-	-
	al Period 3d Collateral Costs	-	-	-	-	-	-	76	4	80	-	80	-	-	-	-	-	-	-	-	-
Period 3d Period-																					
3d.4.1 Insura		-	-	-	-	-	-	9	1	10	10		-	-	-	-	-	-	-	-	-
	ty taxes SFSI Fees	-	-	-	-	-	-	53 4	5	58 4	58	- 4	-	-	-	-	-	-	-	-	-
	ency Planning Fees	-	-	-	-	-	-	3	0	3	-	3	-	-	-	-	-	-	-	-	-
	Overhead	-	-	-	-	-	-	6	1	7	7	-	-	-	-	-	-	-	-	-	-
	ad Track Maintenance ty Staff Cost	-	-	-	-	-	-	2 83	0 13	3 96	3 96		-	-	-	-	-	-	-	-	1,03
	Staff Cost	-	-	-	-	-	-	19	3	22	22		-	-	-	-	-	-	-	-	269
	al Period 3d Period-Dependent Costs	-	-	-	-	-	-	181	24	204	197		-	-	-	-	-	-	-	-	1,300
3d.0 TOTAL	L PERIOD 3d COST	-	-	1,444	-	-	8,680	256	1,691	12,071	11,984	87	-	-	-	-	-	1,773	344,823	-	1,300
PERIOD 3e - IS	FSI Decontamination																				
Period 3e Direct I	Decommissioning Activities																				
Period 3e Addition																					
3e.2.1 Licens	e Termination ISFSI	-	0	2	17	-	142		339	1,696	1,696	-	-	-	424		-	-	65,754	5,882	1,16
	al Period 3e Additional Costs	Ē	0	2	17	-	142	1,197	339	1,696	1,696	-	-	-	424	-	-	-	65,754	5,882	1,16
Period 3e Period-l								0.2	~~	440	440										
3e.4.1 Insura 3e.4.2 Proper	nce ty taxes	-	-	-	-	-	-	93 56	23 14	116 69	116 69		-	-	-	-	-	-	-	-	-
	energy budget	-	-	-	-	-	-	11	3	13			-	-	-	-	-	-	-	-	-
3e.4.4 Fixed	Overhead	-	-	-	-	-	-	54	14	68	68	-	-	-	-	-	-	-	-	-	-
	ad Track Maintenance	-	-	=	-	-	-	21	5	26 217	26		=	-	-	-	-	-	-	÷	
	ty Staff Cost Staff Cost	-	-	-	-	-	-	174 129	43 32	161	217 161	-	-	-	-	-	-	-	-	-	2,50 1,89
	al Period 3e Period-Dependent Costs	-	-	-	-	-	_	536	134	670	670	-	-	-	_	-	-	-	-	-	4,39

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

#### Table F-2 Prairie Island DECON Unit 2 DECON Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage (Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
3e.0	TOTAL PERIOD 3e COST	-	0	2	17	-	142	1,733	473	2,367	2,367	-	-	-	424	-	-	-	65,754	5,882	5,556
PERIO	D 3f - ISFSI Site Restoration																				
Period 3	of Direct Decommissioning Activities																				
Period 3 3f.2.1 3f.2	of Additional Costs Demolition and Site Restoration of ISFSI Subtotal Period 3f Additional Costs	-	1,121 1,121	-	-	- -	-	161 161	192 192	1,474 1,474	-	-	1,474 1,474	-	-	- -	- -	-	-	4,846 4,846	80 80
Period 3 3f.3.1 3f.3	of Collateral Costs Small tool allowance Subtotal Period 3f Collateral Costs	-	7 7	- -	-	<u>-</u> -	-	-	1 1	8	- -	-	8 8	-	-	-	-	-	- -	-	- -
3f.4.2	of Period-Dependent Costs Property taxes	-	-	-	-	-	-	28	3	31	-	-	31	-	-	-	-	-	-	-	-
3f.4.3 3f.4.4	Heavy equipment rental Plant energy budget	-	59	-	-	-	-	- 6	9	68 6	-	-	68 6	-	-	-	-	-	-	-	-
3f.4.5 3f.4.6	Fixed Overhead Railroad Track Maintenance	-	-	-	-	-	-	28 11	4 2	32 12	-	-	32 12	-	-	-	-	-	-	-	-
3f.4.7 3f.4.8	Security Staff Cost Utility Staff Cost	-	-	-	-	-	-	89 55	13	102 63	-	-	102 63	-	-	-	-	-	-	-	1,281 795
3f.4	Subtotal Period 3f Period-Dependent Costs	-	59	-	-	-	-	216	40	315	-	-	315	-	-	-	-	-	-	-	2,076
3f.0	TOTAL PERIOD 3f COST	-	1,187	-	-	-	-	377	233	1,798	-	-	1,798	-	-	-	-	-	-	4,846	2,156
PERIO	D 3 TOTALS	-	40,456	1,525	435	-	11,212	1,821,988	232,501	2,108,117	19,203	2,022,273	66,641	-	9,353	-	-	1,773	1,470,189	177,262	7,611,392
TOTAL	COST TO DECOMMISSION	13,876	116,855	23,184	8,596	26,793	61,273	2,194,551	341,405	2,786,532	591,409	2,121,394	73,730	169,384	184,108	826	673	1,773	17,058,250	981,176	10,289,830

TOTAL COST TO DECOMMISSION WITH 13.96% CONTINGENCY:	\$2,786,532	thousands of 2020 dollars
TOTAL NRC LICENSE TERMINATION COST IS 21.22% OR:	\$591,409	thousands of 2020 dollars
SPENT FUEL MANAGEMENT COST IS 76.13% OR:	\$2,121,394	thousands of 2020 dollars
NON-NUCLEAR DEMOLITION COST IS 2.65% OR:	\$73,730	thousands of 2020 dollars
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	185,606	Cubic Feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	1,773	Cubic Feet
TOTAL SCRAP METAL REMOVED:	42,328	Tons
TOTAL CRAFT LABOR REQUIREMENTS:	981,176	Man-hours

End Notes: n/a - indicates that this activity not charged as decommissioning expense a - indicates that this activity performed by decommissioning staff 0 - indicates that this value is less than 0.5 but is non-zero A cell containing " - " indicates a zero value  $\frac{1}{2} \frac{1}{2} \frac{1}{$ 

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis Document X01-1775-001, Rev. 0 Appendix G, Page 1 of 22

### **APPENDIX G**

### **DETAILED COST ANALYSIS**

### **SCENARIO 5: SAFSTOR with 42 Year DFS**

	Page
Prairie Island Nuclear Generating Plant, Unit 1	G-2
Prairie Island Nuclear Generating Plant, Unit 2	G-12

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Table G-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(11	iousanus	oi 2020 Dolla	15)											
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
	a - Shutdown through Transition	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., LDS.	Mannours	wannours
	Direct Decommissioning Activities																				
1a.1.1	SAFSTOR site characterization survey	_		_		-		415	124	539	539	_		_				_	_	_	_
1a.1.2	Prepare preliminary decommissioning cost	-	-	-	-	-	-	167	25	192	192	-	-	-	-	-	-	-	-	-	1,300
	Notification of Cessation of Operations Remove fuel & source material									a n/a											
	Notification of Permanent Defueling									a											
	Deactivate plant systems & process waste Prepare and submit PSDAR							257	39	a 296	296										9 000
	Review plant dwgs & specs.	-	-	-	-	-	-	167	39 25	192	192	-	-	-	-	-	-	-	-	-	2,000 1,300
1a.1.9	Perform detailed rad survey									a											
	Estimate by-product inventory End product description	-	-	-	-	-	-	129 129	19 19	148 148	148 148	-	-	-	-	-	-	-	-	-	1,000 1,000
1a.1.12	Detailed by-product inventory	-	-	-	-	-	-	193	29	222	222	-	-	-	-	-	-	-	-	-	1,500
	Define major work sequence	-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	1,000
	Perform SER and EA Perform Site-Specific Cost Study	-	-	-	-	-	-	398 643	60 96	458 739	458 739	-	-	-	-	-	-	-	-	-	3,100 5,000
																					-,
	ecifications Prepare plant and facilities for SAFSTOR							632	95	727	727										4.920
	Plant systems	-	-	-	-	-	-	536	80	616	616	-	-	-	-	-	-		-	-	4,167
1a.1.16.3	Plant structures and buildings	-	-	-	-	-	-	401	60	461	461	-	-	-	-	-	-	-	-	-	3,120
	Waste management Facility and site dormancy	-	-	-	-	-	-	257 257	39 39	296 296	296 296	-	-	-	-	-	-	-	-	-	2,000 2,000
1a.1.16.5		-	-	-	-	-	-	2,083	312	2,395	2,395	-	-	-	-	-	-	-	-		16,207
	ork Procedures Plant systems	_	_	_	_	_	_	152	23	175	175	_	_		_	_	_	_	_	_	1,183
1a.1.17.2	Facility closeout & dormancy	-	-	-	-	-	-	154	23	177	177	-	-	-	-	-	-	-	-	-	1,200
1a.1.17	Total	÷	-	-	-	-	-	306	46	352	352	=	-	-	-	-	-	-	-	-	2,383
1a.1.18	Procure vacuum drying system	-	-	-	-	_	-	13	2	15	15	-	-	-	-	-	-	-	-	-	100
1a.1.19	Drain/de-energize non-cont. systems									a											
	Drain & dry NSSS Drain/de-energize contaminated systems									a											
	Decon/secure contaminated systems									a											
1a.1	Subtotal Period 1a Activity Costs	-	-	-	-	-	-	5,027	816	5,844	5,844	-	-	-	-	-	-	-	-	-	35,890
Period 1a C	Collateral Costs																				
1a.3.1	Prairie Island Indian Community Payments	-	-	-	-	-	-	1,249	-	1,249	-	1,249		-	-	-	-	-	-	-	-
1a.3	Subtotal Period 1a Collateral Costs	=	-	-	-	-	-	1,249	-	1,249	-	1,249	-	-	-	-	-	-	-	-	-
	Period-Dependent Costs																				
	Insurance Property taxes	-	-	-	-	-	-	1,660 3,623	166 362	1,826 3,985	1,826 3,985	-	-	-	-	-	-	-	-	-	-
	Health physics supplies	-	614		-	-	-	ə,62ə -	153	767	5,965 767	-	-	-	-	-	-		-	-	-
1a.4.4	Heavy equipment rental	-	753			-	-	-	113	866	866	-	-	-	-	-	-	-		-	-
	Disposal of DAW generated Plant energy budget	-	-	12	2 5	-	50	1,621	14 243	82 1,864	82 1,864	-	-	-	610	-	-	-	12,190	20	-
	NRC Fees	- -	-	-	-	-	-	892	89	981	981	-	-	-	-	-	-	-	-	-	-
	Emergency Planning Fees	-	-	-	-	-	-	2,174	217	2,392	-	2,392	-	-	-	-	-	-	-	-	-
	Fixed Overhead Spent Fuel Pool O&M	-	-	-	-	-	-	1,440 422	216 63	1,656 486	1,656	486	-	-	-	-	-	-	-	-	-
1a.4.11	ISFSI Operating Costs	-	-	-	-	-	-	56	8	64	-	64	-	-	-	-	-	-	-	-	-
	Railroad Track Maintenance Security Staff Cost	=	-	-	-	-	-	63 8,328	9 1,249	72 9,577	72 9,577	-	-	-	-	-	-	-	-	-	122,720
	Security Staff Cost Utility Staff Cost	-	-	-		-	-	8,328 26,931	1,249 4,040	30,971	30,971	-	-	-	-	-	-	-	-	-	122,720 422,240
	Subtotal Period 1a Period-Dependent Costs	-	1,367	12	2 5	-	50		6,945	55,590	52,648	2,942	-	-	610	-	-	-	12,190	20	
1a.0	TOTAL PERIOD 1a COST	-	1,367	12	2 5	-	50	53,487	7,761	62,683	58,492	4,191	-	-	610	-	-	-	12,190	20	580,850

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Table G-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(Th	ousands	of 2020 Dolla	rs)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial/		Utility and
Activity		Decon	Removal		Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
PERIOD	1b - SAFSTOR Limited DECON Activities																				
Period 1b	Direct Decommissioning Activities																				
Decontan	nination of Site Buildings																				
	Reactor	1,199	-	-	-	-	-	-	599	1,798 1,798	1,798	-	-	-	-	-	-	-	-	17,003	-
1b.1.1	Totals	1,199	-	-	-	-	-	-	599		1,798	-	-	-	-	-	-	-	-	17,003	-
1b.1	Subtotal Period 1b Activity Costs	1,199	-	-	-	-	-	-	599	1,798	1,798	-	-	-	-	-	-	-	-	17,003	-
	Additional Costs							10.055	1 001	14.550	14.550										
1b.2.1 1b.2	Spent Fuel Pool Isolation Subtotal Period 1b Additional Costs	-	-	-	-	-	-	$12,675 \\ 12,675$	1,901 1,901	$14,576 \\ 14,576$	$14,576 \\ 14,576$	-	-	-	-	-	-	-	-	-	-
Period 1b	Collateral Costs																				
1b.3.1	Decon equipment	1,055	-	-	-	-	-	-	158	1,213	1,213	-	-	-	-	-	-	-		-	-
1b.3.2 1b.3.4	Process decommissioning water waste Small tool allowance	79	20	52	94		212	-	112 3	549 23	549 23	-	-	-	487	-	-	-	29,193	95	-
1b.3.4 1b.3.5	Prairie Island Indian Community Payments	-	- 20	-	-	-	-	311	-	311	-	311	-	-	-	-	-	-	-	-	-
1b.3	Subtotal Period 1b Collateral Costs	1,134	20	52	94	-	212		273	2,097	1,785	311	-	-	487	-	-	-	29,193	95	-
	Period-Dependent Costs																				
1b.4.1 1b.4.2	Decon supplies Insurance	449	-	-	-	-	-	414	112 41	561 455	561 455	-	-	-	-	-	-	-	-	-	-
1b.4.2 1b.4.3	Property taxes	-	-	-	-	-	-	903	90	994	994	-	-	-	-	-	-	-	-	-	-
1b.4.4	Health physics supplies	-	250	-	-	-	-	-	63	313	313	-	-	-	-	-	-	-	-	-	-
1b.4.5	Heavy equipment rental	-	188		-	-	-	-	28	216	216	-	-	-	-	-		-	-	-	-
1b.4.6 1b.4.7	Disposal of DAW generated Plant energy budget	-	-	6	3	-	27	404	8 61	43 465	43 465	-	-	-	324	-	-	-	6,486	11	-
1b.4.7 1b.4.8	NRC Fees	-	-	-	-	-	-	161	16	177	177	-	-	-		-	-	-	-	-	-
1b.4.9	Emergency Planning Fees	-	-	-	-	-	-	542	54	596	-	596	-	-	-	-		-	-	-	-
1b.4.10	Fixed Overhead	-	-	-	-	-	-	359	54	413	413	-	-	-	-	-	-	-	-	-	-
1b.4.11 1b.4.12	Spent Fuel Pool O&M ISFSI Operating Costs	-	-	-	-	-	-	105 14	16 2	121 16	-	121 16	-	-	-	-	-	-	-	-	-
1b.4.13	Railroad Track Maintenance	-	-	-	_	-	_	16	2	18	18	-	-	_	_	-	_	-	_	-	-
1b.4.14	Security Staff Cost	-	-	-	-	-	-	2,076	311	2,388	2,388	-	-	-	-	-	-	-	-	-	30,596
1b.4.15	Utility Staff Cost	-	-	-	-	-	-	6,714	1,007	7,722	7,722	-	-	-	- 004	-	-	-	- 400	-	105,271
1b.4	Subtotal Period 1b Period-Dependent Costs	449	438				27		1,866	14,498	13,764	733	-	-	324	-	-	-	6,486	11	135,867
1b.0	TOTAL PERIOD 1b COST	2,781	458	59	97	-	239	24,696	4,640	32,969	31,924	1,045	-	-	811	-	-	-	35,678	17,108	135,867
	1c - Preparations for SAFSTOR Dormancy																				
Period Ic	Direct Decommissioning Activities																				
1c.1.1	Prepare support equipment for storage	-	527		-	-	-	-	79	606	606	-	-	-	-	-	-	-	-	3,000	-
1c.1.2 1c.1.3	Install containment pressure equal. lines Interim survey prior to dormancy	-	54	-	-	-	-	733	8 220	62 953	62 953	-	-	-	-	-	-	-	-	700 12,801	-
1c.1.4	Secure building accesses							.00	220	a	000									12,001	
1c.1.5	Prepare & submit interim report	-	-	-	-	-	-	75	11	86	86	-	-	-	-	-	-	-	-	-	583
1c.1	Subtotal Period 1c Activity Costs	-	581	-	-	-	-	808	318	1,707	1,707	-	-	-	-	-	-	-	-	16,501	583
	Collateral Costs						2.5			221											
1c.3.1 1c.3.3	Process decommissioning water waste Small tool allowance	91	- 5	60	109		245	-	129 1	634 6	634 6	-	-	-	561	-	-	-	33,685	109	-
1c.3.4	Spent Fuel Capital and Transfer	-	-	-	-	_	-	163	25	188	-	188	-	_	-	-	-	-	_	-	-
1c.3.5	Retention and Severance	-	-	-	-	-	-	1,032	155	1,187	1,187	=	-	-	-	-	-	-	-	-	-
1c.3.6 1c.3	Prairie Island Indian Community Payments Subtotal Period 1c Collateral Costs	91	- 5	60	109		245	311 1,507	309	311 2,325	1,826	311 499	-	-	561	-	-	-	33,685	109	-
Period 1c	Period-Dependent Costs																				
1c.4.1	Insurance	-	-	-	-	-	-	414	41	455	455	-	-	-	-	-	-	-	-	-	-
1c.4.2	Property taxes Health physics supplies	-	248	-	-	-	-	903	90 62	994 309	994 309	-	-	-	-	-	-	-	-	-	-
1c.4.3 1c.4.4	Health physics supplies Heavy equipment rental	-	248 188		-	-	-	-	62 28	309 216	309 216	- -	-		-	-	-	-	-	-	- -
1c.4.5	Disposal of DAW generated	-	-	3			13	-	4	20	20	-	-	-	152	-	-	-	3,039	5	-
1c.4.6	Plant energy budget	-	-	-	-	-	-	404	61	465	465	-	-	-	-	-	-	-	-	-	-

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Table G-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							`		01 2020 Dona												
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial/		Utility and
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	g Disposal Costs		Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
	c Period-Dependent Costs (continued)																		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
1c.4.7	NRC Fees	-	-	-	-	-	_	161	16	177	177	-	_	-	_	_	_	_	_	_	_
1c.4.8	Emergency Planning Fees	-	-	-	-	-	-	542		596	-	596	-	-	-	-	-	-	-	-	=
1c.4.9	Fixed Overhead	-	-	-	-	-	-	359		413			-	-	-	-	-	-	-	-	-
1c.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	105		121		121	-	-	-	-	-	-	-	-	-
1c.4.11 1c.4.12	ISFSI Operating Costs Railroad Track Maintenance	-	-	-	-	-	-	14 16		16 18	18	16	-	-	-	-	•	-	-	-	-
1c.4.12	Security Staff Cost		-	-	-	-	-	2,076		2,388			-	-	-	-		-	-	-	30,596
1c.4.14	Utility Staff Cost	-	-	-	-	-	-	6,714		7,722			-	-	-	-	-	-	-	-	105,271
1c.4	Subtotal Period 1c Period-Dependent Costs	-	435	3	3	1 -	13	11,709	1,749	13,910	13,177	733	-	-	152	-	-	-	3,039	5	135,867
1c.0	TOTAL PERIOD 1c COST	91	1,021	63	3 11	0 -	257	14,024	2,376	17,943	16,710	1,233	-	-	713	-	-	-	36,724	16,615	136,450
PERIO	D 1 TOTALS	2,873	2,846	134	1 21	2 -	546	92,207	14,777	113,594	107,126	6,468	-	-	2,134	-	-	-	84,593	33,743	853,167
PERIO	D 2a - SAFSTOR Dormancy with Wet Spent Fuel Storage																				
	a Direct Decommissioning Activities																				
2a.1.1 2a.1.2	Quarterly Inspection Semi-annual environmental survey									a a											
2a.1.3	Prepare reports									a											
2a.1.4	Bituminous roof replacement	-	-	-	-	-	-	54		62			-	-	-	-	-	-	-	-	-
2a.1.5	Maintenance supplies	-	-	-	-	-	-	520		650			-	-	-	-	-	-	-	-	-
2a.1	Subtotal Period 2a Activity Costs	-	-	-	-	-	-	574	138	712	712	-	-	-	-	-	-	-	-	-	-
	a Additional Costs																				
2a.2.1	Security Modifications Subtotal Period 2a Additional Costs	-	-	-	-	-	-	4,348		5,000	5,000		-	-	-	-	-	-	-	-	-
2a.2	Subtotal Period 2a Additional Costs	-	-	-	-		-	4,348	652	5,000	5,000	-	-	-	-	-	-	-	-	-	-
	a Collateral Costs																				
2a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	60,919		70,057	-	70,057	-	-	-	-	-	-	-	-	-
2a.3.2 2a.3.3	Retention and Severance	-	-	-	-	-	-	22,434 4,654	3,365	25,799 4,654	25,799	4,654	-	-	-	-	-	-	-	-	-
2a.3.3	Prairie Island Indian Community Payments Subtotal Period 2a Collateral Costs	-	-	-	-		-	88,007	12,503	100,510	25,799			-	-	-	-	-	-	-	-
	a Period-Dependent Costs																				
2a.4.1	Insurance	-	-	-	-	-	-	1,804	180	1,985	1,985		-	-	-	-	-	-	-	-	-
2a.4.2 2a.4.3	Property taxes Health physics supplies	-	801	-	-	-	-	13,489	1,349 200	14,838 1,001	14,838 1,001		-	-	-	-	-	-	-	-	=
2a.4.5 2a.4.4	Disposal of DAW generated	-	- 601	14	1	6 -	59	-	17	96	1,001		-	-	714	-	-	-	14,273	23	-
2a.4.5	Plant energy budget	_	_	-		-	-	1,208	181	1,389	1.389		_	-	-	-	_	-	- 14,270	-	_
2a.4.6	NRC Fees	-	-	-	-	-	_	908	91	999	999	-	-	-	-	-	-	-	-	-	-
2a.4.7	Emergency Planning Fees	-	-	-	-	-	-	6,924	692	7,616		7,616	-	-	-	-	-	-	-	-	-
2a.4.8	Fixed Overhead	-	-	-	-	-	-	4,432	665	5,097	5,097	-	-	-	-	-	-	-	-	-	-
2a.4.9 2a.4.10	Spent Fuel Pool O&M ISFSI Operating Costs	-	-	-	-	-	-	1,573 209	236 31	1,809 240	-	1,809 240	-	-	-	-	-	-	-	-	=
2a.4.10 2a.4.11	Railroad Track Maintenance	-	-	-	-	-	-	462		531	531		-	-	-	-		-	-	-	-
2a.4.12	Security Staff Cost	-	-	-	-	-	_	29,334	4,400	33,734	24,289		-	-	-	-	_	-	-	-	431,215
2a.4.13	Utility Staff Cost	-	-	-	-	-	-	3,645	547	4,192	3,517	675	-	-	-	-	-	-	-	-	58,126
2a.4	Subtotal Period 2a Period-Dependent Costs	-	801	14	1	-	59	63,988	8,659	73,527	53,741	19,786	-	-	714	-	-	-	14,273	23	489,341
2a.0	TOTAL PERIOD 2a COST	-	801	14	1	-	59	156,917	21,952	179,749	85,251	94,498	-	-	714	-	-	-	14,273	23	489,341
PERIO	D 2b - SAFSTOR Dormancy with Dry Spent Fuel Storage																				
	b Direct Decommissioning Activities																				
2b.1.1	Quarterly Inspection									a											
2b.1.2 2b.1.3	Semi-annual environmental survey Prepare reports									a a											
2b.1.3 2b.1.4	Bituminous roof replacement	-		-	-	-	_	524	79	602	602	-	-	-	_	-		_	_	-	-
2b.1.5	Maintenance supplies	-	-	-	-	-	-	5,052		6,315			-	-	-	-	-	-	-	-	-
2b.1	Subtotal Period 2b Activity Costs	-	-	-	-	-	-	5,575		6,917	6,917		-	-	-	-	-	-	-	-	-
Period 2	b Collateral Costs																				
2b.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	15,884	2,383	18,267	-	18,267	-	-	-	-	-	-	-	-	-
2b.3.2	Prairie Island Indian Community Payments	-	-	-	-	-	-	45,219		45,219	-	45,219	-	-	-	-	-	-	-	-	-
2b.3	Subtotal Period 2b Collateral Costs	-	-	-	-	-	-	61,103	2,383	63,486	-	63,486	-	-	-	-	-	-	-	-	-

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Table G-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(Tł	ousands	of 2020 Dolla	rs)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Rurial	Volumes		Burial /		Utility and
Activit		Decon	Removal	Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C		Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Period 2	2b Period-Dependent Costs																				
2b.4.1	Insurance	-	-	-	-	-	-	17,530		19,283	19,283	-	-	-	-	-	-	-	-	-	-
2b.4.2	Property taxes	-	- 4110	-	-	-	-	131,056		144,162	144,162	-	-	-	-	-	-	-	-	-	-
2b.4.3 2b.4.4	Health physics supplies Disposal of DAW generated	-	4,112	74	30	- ) -	308	-	1,028 89	5,140 501	5,140 501	-	-	-	3,739	-	-	-	74,786	122	-
2b.4.5	Plant energy budget	-	-	-	-	-	-	5,869	880	6,749	6,749	-	-	-	-	-	-	-	-	-	-
2b.4.6	NRC Fees	-	-	-	-	-	-	8,234	823	9,058	9,058	- 0.050	-	-	-	-	-	-	-	-	-
2b.4.7 2b.4.8	Emergency Planning Fees Fixed Overhead		-	-	-	-		2,684 5,898	268 885	2,952 6,783	6,783	2,952	-	-			-	-	-		-
2b.4.9	ISFSI Operating Costs	-	-	-	-	-	-	2,026	304	2,330	-	2,330	-	-	-	-	-	-	-	-	-
2b.4.10	Railroad Track Maintenance	-	-	-	-	-	-	2,263	339	2,603	2,603	-	-	-	-	-	-	-	-	-	-
2b.4.11 2b.4.12	Security Staff Cost Utility Staff Cost	-	-	-	-	-	-	101,034 49,438	15,155 7,416	116,189 56,854	25,562 35,704	90,627 21,150	-	-	-	-	-	-	-	-	1,355,328 752,960
2b.4.12	Subtotal Period 2b Period-Dependent Costs	-	4,112	74	30	) -	308			372,602	255,544	117,059	-	-	3,739	-	-	-	74,786	122	2,108,288
2b.0	TOTAL PERIOD 2b COST	_	4,112	74	30	) -	308	392,710	45,771	443,005	262,461	180,544	_	_	3,739	_	_	_	74,786	122	2,108,288
	D 2c - SAFSTOR Dormancy without Spent Fuel Storage		4,112	1-1		,	000	502,110	10,171	440,000	202,401	100,044			0,100				14,100	122	2,100,200
Period 2 2c.1.1	2c Direct Decommissioning Activities Quarterly Inspection																				
2c.1.1 2c.1.2	Quarterly inspection Semi-annual environmental survey									a a											
2c.1.3	Prepare reports									a											
2c.1.4	Bituminous roof replacement	-	-	-	-	-	-	180		207	207	-	-	-	-	-	-	-	-	-	-
2c.1.5 2c.1	Maintenance supplies Subtotal Period 2c Activity Costs	-		-	-	-	-	1,740 1,921	435 462	2,176 2,383	2,176 2,383	-	-	-	-	-	-	-	-	-	-
								1,021	102	2,000	2,000										
	2c Period-Dependent Costs							0.404	940	0.000	0.000										
2c.4.1 2c.4.2	Insurance Property taxes		-	-	-	-	-	3,484 28,957		3,833 31,852	3,833 31,852	-	-	-			-	-	-	-	-
2c.4.3	Health physics supplies	-	1,401	-	-	-	-	-	350	1,752	1,752	-	-	-	-	-	-	-	-	-	-
2c.4.4	Disposal of DAW generated	-	-	25	5 10	-	105		30	170	170	-	-	-	1,269	-	-	-	25,389	41	-
2c.4.5 2c.4.6	Plant energy budget NRC Fees	-	-	-	-	-	-	2,022 2,559	303 256	2,325 2,814	2,325 2,814	-	-	-	-	-	-	-	-	-	-
2c.4.6 2c.4.7	Fixed Overhead		-	-	-	-	-	2,032		2,337	2,337	-	-	-	-	-	-	-	-	-	-
2c.4.8	Railroad Track Maintenance	-	-	-	-	-	-	780	117	897	897	-	-	-	-	-	-	-	-	-	-
2c.4.9	Security Staff Cost	-	-	-	-	-	-	29,821	4,473	34,295	34,295	-	-	-	-	-	-	-	-	-	389,103
2c.4.10 2c.4	Utility Staff Cost Subtotal Period 2c Period-Dependent Costs	-	1,401	25	10	-	105	14,461 84,116	2,169 11,248	16,630 96,905	16,630 96,905	-	-	-	1,269	-	-	-	25,389	41	226,977 616,079
	•		,												,				,		
2c.0	TOTAL PERIOD 2c COST	-	1,401	25			105		,	99,288	99,288		Ē	-	1,269	-	-	-	25,389	41	616,079
PERIO	D 2 TOTALS	-	6,314	113	3 46	-	472	635,664	79,433	722,042	447,000	275,042	-	-	5,722	-	-	-	114,448	187	3,213,708
PERIO	D 3a - Reactivate Site Following SAFSTOR Dormancy																				
Period 3 3a.1.1	Ba Direct Decommissioning Activities Prepare preliminary decommissioning cost							167	25	192	192										1,300
3a.1.1 3a.1.2	Review plant dwgs & specs.	-	-	-	-	-	-	591		680	680	-	-	-	-	-		-	-	-	4,600
3a.1.3	Perform detailed rad survey									a											2,000
3a.1.4	End product description	-	-	-	-	-	-	129		148	148	-	-	-	-	-	-	-	-	-	1,000
3a.1.5 3a.1.6	Detailed by-product inventory Define major work sequence	-	-	-	-	-	-	167 964		192 1,108	192 1,108	-	-	-	-	-	-	-	-	-	1,300 7,500
3a.1.7	Perform SER and EA		-	-	-	-	-	398		458	458	-	-	-	-	-	-	-	-	-	3,100
3a.1.8	Prepare/submit Defueled Technical Specifications	-	-	-	-	-	-	964	145	1,108	1,108	-	-	-	-	-	-	-	-	-	7,500
3a.1.9	Perform Site-Specific Cost Study Prepare/submit Irradiated Fuel Management Plan	-	-	-	-	-	-	643		739	739	-	-	-	-	-	-	-	-	-	5,000
3a.1.10	Prepare/submit Irradiated Fuel Management Plan	-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	1,000
	Specifications																				
	1 Re-activate plant & temporary facilities 2 Plant systems	-	-	-	-	-	-	947 536		1,089 616	980 554	-	109 62	-	-	-	-	-	-	-	7,370 4,167
	2 Plant systems 3 Reactor internals	-	-	-	-	-	-	912		1,049	1,049	-	- 62	-	-	-	-	-	-	-	7,100
3a.1.11.	4 Reactor vessel	-	-	-	-	-	-	835	125	961	961	-	-	-	-	-	-	-	-	-	6,500
	5 Biological shield	-	-	-	-	-	-	64		74	74	-	-	-	-	-	-	-	-	-	500
	6 Steam generators 7 Reinforced concrete	-	-	-	-	-	-	401 206		461 236	461 118	-	118	-	-	-	-	-	-	-	3,120 1,600
	8 Main Turbine	-			-	-		51		236 59	- 116	-	59			-	-	-	-		400
	9 Main Condensers	-	-	-	-	-	-	51		59	-	-	59	-	-	-	-	-	-	-	400

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Table G-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

Activity Decon Removal Packaging Transport Processing Disposal Other Total Lic. Term. Man	pent Fuel Sittinggement Restora Costs Cost	ation Volume	Class A	Class B		GTCC	Burial / Processed	Craft	Utility and
Nativity   Nativity	nagement Restora Costs Cos	ation Volume ts Cu. Feet	Class A	Class B	Class C			Craft	Cully and
Activity Specifications (continued)  3a.1.11.10 Plant structures & buildings  3a.1.11.11 Waste management  3a.1.11.11 Waste management  3a.1.11.11 Waste management  3a.1.11.11 Waste management  3a.1.11.11 Total  3a.1.11.12 Total  3a.1.11.12 Total  3a.1.11.13 Total  3a.1.11.15 Planting & Site closeout  4a.1.12 Preparations  4a.1.12 Preparations  4a.1.13 Planting sequence  4a.1.12 Prepare dismantling sequence  5a.1.13 Plant prep. & temp. svces  5a.1.13 Plant prep. & temp. svces  5a.1.14 Rigging/Cont. Clut Envloystooling/etc.  5a.1.15 Rigging/Cont. Clut Envloystooling/etc.  5a.1.16 Rigging/Cont. Clut Envloystooling/etc.  5a.1.17 Verical & Additional Costs  5a.1.18 Site Characterization  5a.1.19 Site Characterization  5a.1.10 Site Characterization  5a.1.11 Site Characterization  5a.1.12 Site Characterization  5a.1.13 Site Characterization  5a.1.14 Site Characterization  5a.1.15 Site Characterization  5a.1.16 Site Characterization  5a.1.17 Verical & Site Characterization  5a.1.18 Site Characterization  5a.1.19 Site Characterization  5a.1.10 Site Characterization  5a.1.10 Site Characterization  5a.1.11 Site Characterization  5a.1.12 Site Characterization  5a.1.13 Site Characterization  5a.1.14 Site Characterization  5a.1.15 Site Characterization  5a.1.16 Site Characterization  5a.1.17 Verical & Site Characterization  5a.1.18 Site Characterization  5a.1.19 Site Characterization  5a.1.19 Site Characterization  5a.2.10 Site Characterization	-		Cu. Feet	Cu. Feet	Cu. Feet				Contractor
Sal.11.10   Plant structures & buildings	- - -	231 -				Cu. Feet	Wt., Lbs.	Manhours	Manhours
Sa.1.1.11   Waste management	-	231 -							
Salitity   Section   Sec	- -		-	-	-	-	-	-	3,120
	•	67	-	-	-	-	-	-	4,600 900
Planning   Site Preparations   Site Preparat	-	704	-	-	-	-	-	-	39,777
Prepare dismantling sequence									,
Sal.13   Plant prep. & temp. svees									9.406
Sal.1.14   Design water clean-up system	-		-	-	_	-	-	-	2,400
Sal.1.15   Rigging/Cont. Cntrl Envips/tooling/etc.   -   -   -   -   -   -   2,400   360   2,760   2,760   3a.1.16   Procure casks/liners & containers   -   -   -   -   -   -   2,400   360   2,760   2,760   3a.1.16   Procure casks/liners & containers   -   -   -   -   -   -   2,400   360   2,760   2,760   3a.1.16   Procure casks/liners & containers   -   -   -   -   -   -   1,580   24   182   182   182   3a.1   Subtotal Period 3a Activity Costs   -   -   -   -   -   -   -   -   1,5810   2,371   18,181   17,477	-		_	_	_	_	_	_	1,400
Subtotal Period 3a Activity Costs   Subtotal Period 3a Activity Costs   Subtotal Period 3a Additional Costs   Subtotal Period 3a Additional Cost   Subtotal Period 3a Collateral Cost   Subtotal P	-		-	-	-	-	-	=	-
Period 3a Additional Costs   3a.2.1   Site Characterization   Site Character	-		-	-	-	-	-	-	1,230
3a.2.1         Site Characterization         . </td <td>-</td> <td>704 -</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>77,107</td>	-	704 -	-	-	-	-	-	-	77,107
3a.2.2       Mixed/Hazardous Waste       -       -       353       94       178       -       -       76       702       702         3a.2.3       Asbestos Abatement       -       2,526       3       150       -       1,369       -       996       5,044       5,044         3a.2       Subtotal Period 3a Additional Costs       -       2,526       36       244       178       1,369       -       996       5,044       5,044         Period 3a Collateral Costs         3a.3.1       Small tool allowance       -       34       -       -       -       -       5       39       39         3a.3       Subtotal Period 3a Collateral Costs       -       34       -       -       -       -       5       39       39         Period 3a Period-Dependent Costs         3a.4.1       Insurance       -       -       -       -       -       279       28       307       307         3a.4.2       Property taxes       -       -       -       -       2,320       232       2,553       2,553         3a.4.3       Health physics supplies       -       669       -       - <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
3a.2.3 Asbestos Abatement       2,526       3       150       -       1,369       -       996       5,044       5,044         3a.2 Subtotal Period 3a Additional Costs       -       2,526       36       244       178       1,369       -       996       5,044       5,044         Period 3a Collateral Costs         3a.3.1 Small tool allowance       -       34       -       -       -       -       5       39       39         3a.3 Subtotal Period 3a Collateral Costs       -       34       -       -       -       -       -       5       39       39         Period 3a Period-Dependent Costs         3a.4.1 Insurance       -       -       -       -       -       2.79       28       307       307         3a.4.2 Property taxes       -       -       -       -       -       2.320       232       2,553       2,553         3a.4.3 Health physics supplies       -       669       -       -       -       -       -       167       836       836         3a.4.4 Heavy equipment rental       -       753       -       -       -       -       -       1113       866       8	-		-	-	-	-	-	21,020	8,332
3a.2       Subtotal Period 3a Additional Costs       2,526       356       244       178       1,369       3,520       2,129       10,321       10,321         Period 3a Collateral Costs         3a.3.1       Small tool allowance       34       -       -       -       -       -       5       39       39         3a.3.3       Subtotal Period 3a Collateral Costs         Period 3a Period-Dependent Costs         3a.4.1       Insurance       -       -       -       -       279       28       307       307         3a.4.2       Property taxes       -       -       -       -       2,320       232       2,553       2,553         3a.4.3       Health physics supplies       -       669       -       -       -       -       -       113       866       866	-	- 6,132	2 - 12,843	-	-	-	351,977 166,959	2,348 20,907	-
Period 3a Collateral Costs   34	-	- 6,132			-	-	518,936	20,907 44,275	8,332
3a.3.1       Small tool allowance       34       -       -       -       5       39       39         3a.3.1       Subtotal Period 3a Collateral Costs         Period 3a Period-Dependent Costs         3a.4.1       Insurance       -       -       -       279       28       307       307         3a.4.2       Property taxes       -       -       -       2,320       232       2,553       2,553         3a.4.3       Health physics supplies       -       669       -       -       -       113       866       866         3a.4.4       Heavy equipment rental       -       753       -       -       -       -       113       866       866		0,102	12,040				010,000	44,270	0,992
3a.3     Subtotal Period 3a Collateral Costs     34     -     -     -     5     39     39       Period 3a Period-Dependent Costs       3a.4.1     Insurance     -     -     -     -     279     28     307     307       3a.4.2     Property taxes     -     -     -     -     2,320     232     2,553     2,553       3a.4.3     Health physics supplies     -     669     -     -     -     -     113     866     866       4     Heavy equipment rental     -     753     -     -     -     -     113     866     866									
Period 3a Period-Dependent Costs       3a.4.1 Insurance     1     1     1     279     28     307     307       3a.4.2 Property taxes     1     1     2     232     2,553     2,553       3a.4.3 Health physics supplies     669     1     1     167     836     836       3a.4.4 Heavy equipment rental     753     1     1     113     866     866	-		-	-	-	-	-	-	-
3a.4.1     Insurance     -     -     -     -     279     28     307     307       3a.4.2     Property taxes     -     -     -     -     -     2,320     232     2,553     2,553       3a.4.3     Health physics supplies     -     -     -     -     -     -     -     -     167     836       3a.4.4     Heavy equipment rental     -     753     -     -     -     -     113     866     866									
3a.4.2     Property taxes     -     -     -     -     -     -     2,320     232     2,553     2,553       3a.4.3     Health physics supplies     -     669     -     -     -     -     -     167     836     836       3a.4.4     Heavy equipment rental     -     753     -     -     -     -     -     113     866     866									
3a.4.3     Health physics supplies     -     669     -     -     -     -     -     167     836     836       3a.4.4     Heavy equipment rental     -     753     -     -     -     -     -     113     866     866	-		-	-	-	-	-	-	-
3a.4.4 Heavy equipment rental - 753 113 866 866	-		-	-	-	-	-	-	-
3a.4.5 Disposal of DAW generated 10 4 - 42 - 12 69 69	-		-	-	-	-	-	=	-
	-		514	-	-	-	10,287	17	-
3a.4.6 Plant energy budget 1,621 243 1,864 1,864 3a.4.7 NRC Fees 335 33 368 368	-		-	-	-	-	-	-	-
3a.4.7 NRC Fees	-		-	-	-	-	-	-	-
3a.4.9 Railroad Track Maintenance 63 9 72 72	-	_	-	-	-	-	-	-	-
3a.4.10 Security Staff Cost 4,386 658 5,044 5,044	-		-	-	-	-	-	-	65,000
3a.4.11     Utility Staff Cost     -     -     -     -     -     16,379     2,457     18,835     18,835       3a.4     Subtotal Period 3a Period-Dependent Costs     1,422     10     4     -     42     26,823     4,169     32,471     32,471	- -		514	-	-	-	10,287	17	257,920 322,920
	-	-	514	-	-	•	10,287	17	322,320
3a.0 TOTAL PERIOD 3a COST - 3,982 366 248 178 1,411 46,153 8,674 61,013 60,308	-	704 6,132	13,357	-	-	-	529,223	44,292	408,359
PERIOD 3b - Decommissioning Preparations									
Period 3b Direct Decommissioning Activities									
Detailed Work Procedures									
36.1.1.1 Plant systems 608 91 700 630	-	70 -	-	_	_	-	_	_	4,733
3b.1.1.2 Reactor internals 321 48 369 369	-		-	-	-	-	-	-	2,500
3b.1.1.3 Remaining buildings 174 26 200 50	-	150 -	-	-	-	-	-	-	1,350
3b.1.1.4 CRD cooling assembly 129 19 148 148 3b.1.1.5 CRD housings & ICI tubes 129 19 148 148	- -	-	-	-	-	-	-	-	1,000 1,000
30.1.1.6 Incore instrumentation 129 19 148 148	-		-	-	-	-	-	-	1,000
3b.1.1.7 Reactor vessel 467 70 537 537	-		-	-	-	-	-	-	3,630
3b.1.1.8 Facility closeout 154 23 177 89	-	89 -	-	-	-	-	-	-	1,200
3b.1.1.9 Missile shields 58 9 67 67	-	-	-	-	-	-	-	-	450
3b.1.1.10 Biological shield 154 23 177 177 3b.1.1.11 Steam generators 591 89 680 680	- -		-	-	-	-	-	-	1,200 4,600
35.1.1.12 Reinforced concrete 129 19 148 74	-	74 -	_	_	_	_	_	_	1,000
3b.1.1.13 Main Turbine 200 30 231 -	-	231 -	-	-	-	-	-	-	1,560
3b.1.1.14 Main Condensers 200 30 231 -	-	231 -	-	-	-	-	-	-	1,560
3b.1.1.15 Auxiliary building 351 53 403 363 3b.1.1.16 Reactor building	<del>.</del>	40 - 40 -	-	-	-	-	-	-	2,730 2,730
35.1.1.16 Reactor outliding	-	924	-	-	-	-	-	-	32,24
3b.1 Subtotal Period 3b Activity Costs 4,144 622 4,765 3,841	-	924	-	-	-	-	-	=	32,24
Period 3b Collateral Costs									
10.13	-		-	-	-	-	-	-	-
3b.3.2 DOC staff relocation expenses 1,264 190 1,454 1,454							-	_	-
3b.3.3 Pipe cutting equipment - 1,200 180 1,380 1,380	<del>-</del>		-	-	-	-	-		-

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Table G-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(111	ousunus	oi 2020 Dolla												
Ī.						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed	·		Volumes		Burial/		Utility and
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
3b.3	Subtotal Period 3b Collateral Costs	1,055	1,200	-	-	-	-	1,264	528	4,047	4,047	-	-	-	-	-	-	-	-	-	-
	Period-Dependent Costs																				
3b.4.1	Decon supplies	38	-	-	-	-	-	-	9	47	47	-	-	-	-	-	-	-	-	-	-
3b.4.2 3b.4.3	Insurance Property taxes	-	-	-	-	-	-	241 1,155	24 116	266 1,271	266 1,271	-	-	-	-	•	•	-	-	-	-
3b.4.4	Health physics supplies	-	295	-	-	-	-	1,155	74	369	369	-	-	-	-			-	-	-	-
3b.4.5	Heavy equipment rental	-	375	-	-	-	-	-	56	432	432	-	-	-	-	-	-	-	-	-	-
3b.4.6	Disposal of DAW generated	-	-	6	2	-	24	-	7	39	39	-	-	-	290	-	-	-	5,802	9	-
3b.4.7 3b.4.8	Plant energy budget NRC Fees	-	-	-	-	-	-	808 167	121 17	930 183	930 183	-	-	-	-	-	-	-	-	-	-
3b.4.9	Fixed Overhead	-	-	-	-	-	-	718	108	826	826	-	-	-	-			-	-	-	-
3b.4.10	Railroad Track Maintenance	-	-	-	-	-	-	31	5	36	36	-	-	-	-	-	-	-	-	-	-
3b.4.11	Security Staff Cost	-	-	-	-	-	-	2,187	328	2,515	2,515	-	-	-	-	-	-	-	-	-	32,41
3b.4.12	DOC Staff Cost	-	-	-	-	-	-	5,344	802	6,146	6,146	-	-	-	-	-	-	-	-	-	58,08
3b.4.13 3b.4	Utility Staff Cost Subtotal Period 3b Period-Dependent Costs	38	670	- 6	2	-	24	8,167 18,820	1,225 2,891	9,392 $22,450$	9,392 22,450	<del>-</del> -	-	-	290	-	-	-	5,802	9	128,60 219,09
3b.0	TOTAL PERIOD 3b COST	1,092	1,870	6	2	-	24	24,227	4,040	31,262	30,338	-	924	-	290	-	-	-	5,802	9	251,341
PERIOD	3 TOTALS	1,092	5,852	372	251	178	1,435	70,380	12,715	92,275	90,647	-	1,628	6,132	13,647	-	-	-	535,025	44,301	659,700
PERIOD	) 4a - Large Component Removal																				
Period 4a	a Direct Decommissioning Activities																				
Nuclear S	Steam Supply System Removal																				
	Reactor Coolant Piping	11 5			11 7	66	94		52	285	285	-	-	240			-	-	33,680		
4a.1.1.2 4a.1.1.3	Pressurizer Relief Tank Reactor Coolant Pumps & Motors	13	19 60		7 85	44	62 463		31 155	174 822	174 822	-	-	160	2,332		•	-	22,441 295,800		
	Pressurizer	-	77		91	-	776		265	1,591	1,591	-	-	-	2,196			-	158,199		
4a.1.1.5	Steam Generators	-	3,307	1,690	1,743	2,409	3,885	-	2,590	15,625	15,625	-	-	18,672				-	1,581,180		
4a.1.1.6	CRDMs/ICIs/Service Structure Removal	63		205	44	326	454		283	1,623	1,623	-	-	2,138			<u>-</u>	-	165,025		
4a.1.1.7	Reactor Vessel Internals	53	4,650	11,331	828	-	8,610	278	10,900	36,649	36,649	-	-	-	1,174	-	742		167,605		1,05
4a.1.1.8 4a.1.1.9	Vessel & Internals GTCC Disposal Reactor Vessel	-	5,835	1,653	442	-	8,680 3,268	278	1,302 6,576	9,982 18,053	9,982 18,053	-	-	-	9,245	-	-	1,773	344,823 579,324		1,05
4a.1.1	Totals	146		15,324	3,250	2,845	26,293		22,154	84,804	84,804	-	-	21,210			742	1,773			
	of Major Equipment																				
4a.1.2	Main Turbine/Generator	-	292	116 79	35 33	555	-	-	173	1,170	1,170	-	-	2,243		-	-	-	134,601 180,000		
4a.1.3	Main Condensers	-	2,510	79	33	742	-	-	752	4,115	4,115	-	-	4,000	-	-	-	-	180,000	34,978	-
Cascadin	g Costs from Clean Building Demolition Reactor		794						119	913	913								_	7,589	-
4a.1.4.1 4a.1.4	Totals	-	794	-	-	-	-	-	119	913	913	-	-	-	-	-	-	-	-	7,589	
	of Plant Systems																				
4a.1.5.1	Air Removal	=	31	-	-	-	-	-	5	36	-	-	36	-	-	-	-	-	-	452	
4a.1.5.2 4a.1.5.3	Auxiliary Feedwater Auxiliary Feedwater - RCA	<u> </u>	46 47	- 0	2	36	-	-	7 17	53 102	102	-	53	215	-	-	-	-	8,722	670 601	
4a.1.5.3 4a.1.5.4	Bleed Steam	-	90	-		-	-	-	14	102	102	-	104	-	-				0,122	1.335	
4a.1.5.5	Caustic Addition - RCA	-	38	0	2	39	-	-	16	95	95	-	-	233	-	-	_	-	9,453		
4a.1.5.6	Chemical Feed	-	20	-	-	-	-	-	3	23	-	-	23	-	-	-	-	-	-	304	
4a.1.5.7	Chemical Feed - RCA	-	1	0	0	1	-	-	0	3	3	-	-	6	-	-	-	-	243		
4a.1.5.8 4a.1.5.9	Circulating Water Condensate	-	42 474		-	-	-	-	6 71	49 545	-	-	49 545	-	-	-	-	-	-	619 6,837	
	Condensate Polishing	- -	235	-	-	-	-	-	35	271	-	-	271	-	-			-	-	3,420	
4a.1.5.11	Condensate Polishing - RCA	-	183	4	15	348	-	-	101	651	651	-	-	2,078	-	-	-	-	84,395	2,329	
	Electro-hydraulic	-	9	-	-	-	-	-	1	10	-	-	10	-	-	-	-	-	-	127	-
	Feedwater Foodwater BCA	-	153 195		24	537	-	-	23 133	175 895	895	-	175	3,208	-	-	-	-	130,294	2,215 2,651	-
	Feedwater - RCA Gland Seal	-	34	. '	- 4	99 <i>1</i>	-	-	133	895 39	949	-	39	5,4U8 -	-	-	-	-	150,294	2,651	-
	Heater Drain	-	400	-	-	-	-	-	60	460	-	-	460	-	-	-	-	-	-	5,881	-
4a.1.5.17	Internal Circ Water & CDSR	=	27	-	-	-	-	-	4	31	-	-	31	-	-	-	-	-	-	389	-
	Main Gen/Exciter/Transformer	-	0	-	-	-	-	-	0	0	-	-	0	-	-	-	-	-	-	5	-
	Main Steam Main Steam - RCA	-	115 366	10	37	844	-	-	17 225	133 1,482	1,482	-	133	5 O44	-	-	-	-	204,825	1,690 4,956	
	Main Steam - RCA Steam Generator Blowdown	<del>-</del>	366 434		29	844 340	234	-	225 224	1,482 1,282	1,482	-	-	5,044 2,031	686	-	-	-	204,825 126,640		
-a.1.0.41	Dicam denerator Diowdowii	-	404	44	49	940	204	-	444	1,404	1,404	-	-	2,031	000	-	-	-	140,040	0,314	-

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Table G-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(Th	ousanas	of 2020 Dolla	rs)											
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Burial Class B		GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Dienoen	of Plant Systems (continued)																				
	2 Steam Generators	-	5	-	-	-	-	-	1	6	_	_	6	-	-	-	-	-	_	75	-
4a.1.5.2	3 Turbine & Moisture Separators	-	386	-	-	-	-	-	58	444	-	-	444	-	-	-	-	-	-	5,609	-
	4 Turbine Oil Purification	=	70	-	-	-	-	-	11	81	-	-	81	-	-	-	-	-	-	1,003	-
4a.1.5	Totals	-	3,401	44	108	2,144	234	-	1,037	6,967	4,510	-	2,458	12,815	686	-	-	-	564,572	48,101	-
4a.1.6	Scaffolding in support of decommissioning	-	909	3	1	26	4	-	233	1,176	1,176	-	-	138	12	-	-	-	6,985	6,020	-
4a.1	Subtotal Period 4a Activity Costs	146	22,144	15,566	3,426	6,311	26,530	556	24,467	99,147	96,689	-	2,458	40,406	29,203	-	742	1,773	4,234,235	163,954	5,187
	a Additional Costs																				
4a.2.1 4a.2	Retired RPV upper internals package Subtotal Period 4a Additional Costs	-	128 128	166 166	58 58		1,583 1,583	-	944 944	2,879 2,879	2,879 2,879	-	-	-	572 572		-	-	49,800 49,800	1,667 1,667	67 67
Poriod 4	a Collateral Costs																				
4a.3.1	Process decommissioning water waste	2	-	4	8	-	17	-	7	38	38	-	-	-	39	-	-	-	2,337	8	-
4a.3.3	Small tool allowance	-	213	-	-	-	-	-	32	245	220	-	24		-	-	-	-	-	-	-
4a.3	Subtotal Period 4a Collateral Costs	2	213	4	8	-	17	-	39	283	258	-	24	-	39	-	-	-	2,337	8	-
Period 4	a Period-Dependent Costs																				
4a.4.1	Decon supplies	100	-	-	-	-	-	-	25	125	125	-	-	-	-	-	-	-	-	-	-
4a.4.2	Insurance	-	-	-	-	-	-	643	64	708 2,987	708 2,987	-	-	-	-	-	-	-	-	-	-
4a.4.3 4a.4.4	Property taxes Health physics supplies	-	1,743	-	-	-	-	2,715	272 436	2,987	2,987	-	-	-	-	-	-	-	-	-	-
4a.4.4 4a.4.5	Heavy equipment rental		3,325	-	-		-	-	499	3,824	3,824	-	-	-	-	-	-	-	-	-	
4a.4.6	Disposal of DAW generated	-	-	59	24	_	245		71	398	398	_	-	-	2,971	-	-	-	59,418	97	-
4a.4.7	Plant energy budget		-	-	-	-	- 1	2,047	307	2,354	2,354	-	-	-	-	-	-	-	-	-	-
4a.4.8	NRC Fees	=	-	-	-	-	-	643	64	707	707	-	-	-	-	-	-	-	-	-	-
4a.4.9	Fixed Overhead	-	-	-	-	-	-	1,581	237	1,818	1,818	-	-	-	-	-	-	-	-	-	-
4a.4.10	Liquid Radwaste Processing Equipment/Services	=	-	-	-	-	-	565	85	649	649	-	-	-	-	-	-	-	-	-	-
4a.4.11		-	-	-	-	-	-	83	12	96	96	-	-	-	-	-	-	-	-	-	-
4a.4.12 4a.4.13		-	-	-	-	-	-	1,489 5,167	223 775	1,712 5,943	1,712 5,943	-	-	-	-	-	-	-	-	-	76,832
4a.4.13			-	-	-		-	17,190	2,579	19,769	19,769	-	-	-	-	-	-	-	-	-	189,964
4a.4.15	Utility Staff Cost	-	-	-	_	-	-	21,633	3,245	24,877	24,877	_	-	-	-	-	-	-	-	-	340,664
4a.4	Subtotal Period 4a Period-Dependent Costs	100	5,068	59	24	-	245	53,755	8,894	68,145	68,145	-	-	-	2,971	-	-	-	59,418	97	607,460
4a.0	TOTAL PERIOD 4a COST	248	27,553	15,796	3,516	6,311	28,375	54,311	34,343	170,454	167,972	-	2,482	40,406	32,785	125	742	1,773	4,345,791	165,725	612,713
PERIO	D 4b - Site Decontamination																				
	b Direct Decommissioning Activities																				
4b.1.1	Remove spent fuel racks	314	35	86	41	-	703	-	356	1,535	1,535	-	-	-	2,092	-	-	-	132,919	576	-
	of Plant Systems		0	0	0					0	0			0					1.40	0.0	
4b.1.2.1 4b.1.2.3		-	2 5	Ü	0	1	-	-	1	3 5	3	-	- 5	3	-	-	-	-	140	26 65	-
4b.1.2.4			1,263	89	90	753	973		694	3,861	3,861	-	-	4,498	2,846	-		-	366,565	17,235	-
4b.1.2.5		=	858	25	91			-	543	3,597	3,597	-	-	12,427	-,010	-	-	-	504,675	11,242	-
4b.1.2.6	Containment Cooling	-	74	-	-	· -	-	-	11	85	-	-	85	· -	-	-	-	-	-	1,086	-
4b.1.2.7		-	304	7	25			-	166	1,070	1,070	-	-	3,400	-	-	-	-	138,090	3,971	-
4b.1.2.8		-	30	0	1			-	10	59	59	-	-	105	-	-	-	-	4,278	401	-
4b.1.2.9		-	93	2	6			-	46	293	293	-	-	868	-	-	-	-	35,249	1,217	-
	O Containment Ventilation O Cooling Water	-	229 163	24	51	828	248	-	254 24	1,635 187	1,635	-	187	4,951	737	-	-	-	247,952	3,278 2,396	-
	Cooling Water - RCA		658	16	57	1,293	-		368	2,392	2,392	-	107	7,728	-	-		-	313,832	8,594	-
	B D1 Emergency Diesel	-	50	-	-		-		8	58	2,002	_	58	- 1,120	-	_	-	_		730	-
	4 D2 Emergency Diesel	-	36	-	_	-	-	-	5	41	-	-	41	-	-	-	-	-	-	522	-
	5 Diesel Rooms Ventilation	-	9	-	-	-	-	-	1	11	-	-	11	-	-	-	-	-	-	135	-
	3 Electrical - Clean	-	1,905	-	-	-		-	286	2,191		-	2,191			-	-	-		26,981	-
	7 Electrical - Contaminated	-	553	7	20				213	1,248	1,248	-	-	2,527	95		-	-	108,690	7,488	-
	8 Electrical - Contaminated - Fuel Pool 9 Electrical - Decontaminated	-	137 3,787	2 48	5 173			-	53 1,569	307 9,518	307 9,518	-	-	615 23,551	23	-	-	-	26,449 956,401	1,857 49,378	-
	DELectrical - Decontaminated - Fuel Pool	-	947	12	43			-	392	2,380	2,380	-	-	5,893	-	-	-	-	239,327	12,340	-
	Fuel Handling	-	108	6	11			-	70	421	421	-	-	908	218	-	-	-	50,723	1,595	-
	2 Fuel Oil	-	121	- "	-		-	-	18	140	-	-	140	-	-	-	-	-		1,697	-
	B HVAC - Clean	-	120	-	-	-	-	-	18	138	-	-	138	-	-	-	-	-	-	1,891	-
4b.1.2.2	4 HVAC - Contaminated	-	337	9	26	546	41	-	181	1,141	1,141	-	-	3,261	123	-	-	-	140,257	4,335	-

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

Table G-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(		of 2020 Dolla	/											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Rurial	Volumes		Burial/		Utility and
Activity	Ÿ	Decon	Removal	Packaging	Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Disposal	of Plant Systems (continued)																				
	HVAC - Contaminated - Fuel Pool	-	145	4	11	234	18	-	78	489	489	-	-	1,398	53	-	-	-	60,110	1,858	-
4b.1.2.26	Incore Instrumentation	-	25	1	2			-	13	70	70	-	-	60		-	-	-	6,058	382	=
	Misc Drains & Vents	-	212	15	13			-	110	592	592	-	-	390	514	-	-	-	49,062	2,764	-
	Reactor Coolant	-	283	21	18 7			-	150	796	796	-	-	344		-	-	-	64,085	3,865	-
	Reactor Hot Sampling Reactor Makeup	-	125 73	12	- 1	11	118	-	65 11	339 84	339	-	84	66	342	-	-	-	25,063	1,611 1,042	-
	Reactor Vessel	-	19	1	0	4	5	-	7	36	36	-	-	26		-	-		2.000	260	-
	Residual Heat Removal	-	378	85	86	484	1,105	-	465	2,603	2,603	-	-	2,895		-	-	-	326,425	5,374	-
	Safeguards Chilled Water	-	18	-	-	-	-	-	3	20	-	-	20	-	-	-	-	-	-	259	-
	Safeguards Chilled Water - RCA	-	85	1	4	83	-	-	34	207	207	-	-	495	-	-	-	-	20,100	1,019	
	Safety Injection Sampling	-	809 54	42	73 3	1,136 10	393 37	-	486 25	2,939 133	2,939 133	-	-	6,788 59	1,156 107	-	-	-	349,908 9,420	11,276 731	-
	Shield Bldg Ventilation	-	125	14	26				132	821	821	-	-	2,152		-	-	-	118,583	1,811	-
	Spent Fuel Pool Cooling	-	324	34	32			-	222	1,198	1,198	-	-	806	1,325	-	-	-	117,816	4,400	-
	Station & Instrument Air	-	20	-	-	-	-	-	3	23	-	-	23	-	-	-	-	-	· -	300	-
	Station & Instrument Air - RCA	-	81	1	2			-	29	169	169	-	-	332	-	-	-	-	13,496	1,053	-
4b.1.2.41	Station & Instrument Air - RCA Fuel Pool Turbine Bldg Traps & Drains	-	20 50	0	1	14	-	-	7	42 58	42	-	- 58	83	-	-	-	-	3,374	263 767	-
	Unit Coolers	-	42	-	-	-	-	-	6	49	-	-	49	-	-	-	_	-	-	611	-
	Unit Coolers - RCA	_	55	0	2	39	-	-	20	115	115	_	-	230	-	-	-	-	9,348	683	-
4b.1.2	Totals	-	14,735	481	883		4,126	-	6,807	41,565	38,474	-	3,091	86,861	12,129	-	-	-	4,307,475	198,796	=
4b.1.3	Scaffolding in support of decommissioning	_	1,363	4	2	38	6	-	349	1,763	1,763	_	_	207	18	_	_	-	10,477	9,030	_
			-,							-,	-,								,	-,	
	nination of Site Buildings																				
4b.1.4.1 4b.1.4.2	Reactor Backwash Waste Receiving Tank	1,096	2,527 25	240	1,236 17		7,080 97	-	3,215 33	15,766 175	15,766 175	-	-	2,230	67,325 929	-	-	-	3,286,372 43,896	45,729 266	-
4b.1.4.2 4b.1.4	Totals	1,096	2,552	243				-	3,248	15,941	15,941	-	-	2,230	68,254		-		3,330,268	45,995	-
10.1.1	100010	1,000	2,002	2.0	1,200	0.0	,,,,,,		0,210	10,011	10,011			2,200	00,201				0,000,200	10,000	
4b.1.5	Prepare/submit License Termination Plan	-	-	-	-	-	-	526	79	605	605	-	-	-	-	-	-	-	-	-	4,096
4b.1.6	Receive NRC approval of termination plan									a											
4b.1	Subtotal Period 4b Activity Costs	1,410	18,685	814	2,179	14,945	12,012	526	10,839	61,410	58,319	-	3,091	89,298	82,494	-	-	-	7,781,139	254,398	4,096
Period 41	o Additional Costs																				
4b.2.1	License Termination Survey Planning	-	-	-	-	-	-	1,037	311	1,348	1,348	-	-	-	-	-	-	-	_	-	6,240
4b.2.2	Excavation of Underground Services	-	1,175	-	-	-	-	225	328	1,728	1,728	-	-	-	-	-	-	-	-	7,411	-
4b.2.3	Operational Equipment	-	-	11	36			-	97	751	751	-	-	5,880		-	-	-	147,000	16	
4b.2.4	License Termination ISFSI Subtotal Period 4b Additional Costs	-	1 100	81 93	435		2,532	1,375 2,638	1,112	5,560 9,387	5,560 9,387	-	-	5,880	9,355 9,355	-	-	-	1,123,457	3,762	5,460
4b.2	Subtotal Feriod 40 Additional Costs	-	1,199	95	471	606	2,532	2,000	1,848	9,361	9,367	-	-	5,000	9,555	-	-	-	1,270,457	11,189	11,700
	Collateral Costs																				
4b.3.1	Process decommissioning water waste	5	-	9	16		37	-	15	83	83	-	-	-	85	-	-	-	5,092	17	-
4b.3.3 4b.3.4	Small tool allowance Decommissioning Equipment Disposition	-	307	130	67	1,112	178	-	46 234	353 1,722	353 1,722	-	-	6,000	529	-	-	-	303,608	147	-
4b.3.5	On-site survey and release of 0.0 tons clean metallic waste	-	-	-		1,112	-		204	- 1,122	1,722	-	-	0,000	-		-	-	-	147	- -
4b.3	Subtotal Period 4b Collateral Costs	5	307	139	84	1,112	215	-	296	2,158	2,158	-	-	6,000	614	-	-	-	308,700	163	-
Dowind 41	p Period-Dependent Costs																				
4b.4.1	Decon supplies	564	_	-	_	-	_	_	141	705	705	-	_	-	_	-	_	_	-	-	_
4b.4.2	Insurance	-	-	-	-	-	-	862	86	949	949	-	-	-	-	-	-	-	-	-	-
4b.4.3	Property taxes	-	-	-	-	-	-	3,505	351	3,856	3,856	-	-	-	-	-	-	-	-	-	-
4b.4.4	Health physics supplies	-	2,456	-	-	-	-	-	614	3,070	3,070	-	-	-	-	-	-	-	-	-	=
4b.4.5 4b.4.6	Heavy equipment rental Disposal of DAW generated	-	4,577	77	31	-	322	-	687 93	5,263 523	5,263 523	-	-	-	3,905	-	-	-	78,097	127	-
4b.4.7	Plant energy budget		-	- ' '	-	-	-	2,165	325	2,490	2,490	-	-	-	3,300	-		-	10,051	121	-
4b.4.8	NRC Fees	-	-	-	-	-	-	862	86	948	948	-	-	-	-	-	-	-	-	-	-
4b.4.9	Fixed Overhead	-	-	-	-	-	-	2,118	318	2,436	2,436	-	-	-	-	-	-	-	-	-	-
4b.4.10	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	757	113	870	870	-	-	-	-	-	-	-	-	-	=
4b.4.11 4b.4.12	Railroad Track Maintenance Remedial Actions Surveys	-	-	-	-	-	-	111 1,995	17 299	128 2,294	128 2,294	-	-	-	-	-	-	-	-	-	=
4b.4.12 4b.4.13	Security Staff Cost	-	-	-	-	-		1,202	180	1,383	1,383	-	-	-	-	-		-	-	-	20,373
4b.4.14	DOC Staff Cost	-	-	-	-	-	-	15,039	2,256	17,294	17,294	-	-	-	-	-	-	-	-	-	174,093
4b.4.15	Utility Staff Cost	-	-	-	-	-	-	18,793	2,819	21,612	21,612	-	-	-	-	-	-	-	-		311,145
4b.4	Subtotal Period 4b Period-Dependent Costs	564	7,033	77	31	-	322	47,410	8,384	63,822	63,822	-	-	-	3,905	-	-	-	78,097	127	505,611
4b.0	TOTAL PERIOD 4b COST	1,979	27,224	1,123	2,765	16,663	15,081	50,574	21,367	136,776	133,686	-	3,091	101,178	96,368	-	-	-	9,438,392	265,878	521,407

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Table G-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(11)	ousanus	of 2020 Dollar	13)											
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Burial V Class B Cu. Feet		GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD	4e - Delay before License Termination																				
Period 4e	Direct Decommissioning Activities																				
4e.4.2	Period-Dependent Costs Property taxes	-		-	-	-	-	1,476	148	1,623	1,623	-	-	-	-	-	-	-	-	-	
4e.4.3 4e.4.4 4e.4.6	Health physics supplies Disposal of DAW generated NRC Fees	-	- -	2	1	-	6	162	22 2 16	109 11 178	109 11 178	-	-	-	79	-	-	-	1,573	3	- -
4e.4.7 4e.4.8	Fixed Overhead Railroad Track Maintenance	-	- -	-	-		-	939 49	141 7	1,079 57	1,079 57	-	-	-	-	-	-	-	-	-	-
4e.4.9 4e.4	Utility Staff Cost Subtotal Period 4e Period-Dependent Costs	-	87	2	1	-	6	696 3,322	104 440	801 3,858	801 3,858	-	-	-	79	-	-	-	1,573	3	11,488 11,488
4e.0	TOTAL PERIOD 4e COST	-	87	2	1	-	6	3,322	440	3,858	3,858	-	-	-	79	-	-	-	1,573	3	11,488
PERIOD	4f - License Termination																				
4f.1.1	Direct Decommissioning Activities ORISE confirmatory survey	-	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-
4f.1.2 4f.1	Terminate license Subtotal Period 4f Activity Costs	-	-	-	-	-	-	166	50	a 216	216	-	-	-	-	-	-	-	-	-	-
Period 4f 4f.2.1 4f.2	Additional Costs License Termination Survey Subtotal Period 4f Additional Costs	-	- -	- -	-	-	- -	3,199 3,199	960 960	4,159 4,159	4,159 4,159	- -	-	- -	-	-	-	-	- -	40,531 40,531	3,120 3,120
Period 4f 4f.3.1 4f.3	Collateral Costs DOC staff relocation expenses Subtotal Period 4f Collateral Costs	-	-	-	-	-		1,264 1,264	190 190	1,454 1,454	1,454 1,454		-	-	-					-	-
Period 4f 4f.4.2 4f.4.3	Period-Dependent Costs Property taxes Health physics supplies	-	<u>-</u> 499	-	-	- -	- -	1,335	133 125	1,468 624	1,468 624	- -	- -	- -	- -	- -	- -	-	<u>-</u>	- -	<del>-</del>
4f.4.4 4f.4.5 4f.4.6	Disposal of DAW generated Plant energy budget NRC Fees	- - -	- - -	- -	' 3 - -		27 - -	243 422	8 36 42	45 279 465	45 279 465	- -	- - -	- - -	332 - -	- -	- - -	- -	6,649		- - -
4f.4.7 4f.4.8 4f.4.9	Fixed Overhead Railroad Track Maintenance Security Staff Cost DOC Staff Cost	- - -	- - -	- - -	- - -	-	- - -	890 47 805	133 7 121	1,023 54 926	1,023 54 926	- - -	- - -	- - -	- - -	- - -	- - -		- - -	- - -	11,668 46,283
4f.4.10 4f.4.11 4f.4	Utility Staff Cost Subtotal Period 4f Period-Dependent Costs	- - -	499	7	3	- - -	27	4,238 3,772 11,752	636 566 1,808	4,874 4,338 14,096	4,874 4,338 14,096	-	-	-	332	-	- - -	- - -	6,649	11	56,395 114,346
4f.0	TOTAL PERIOD 4f COST	-	499	7	3	-	27	16,381	3,007	19,924	19,924	-	-	-	332	-	-	-	6,649	40,542	117,466
PERIOD	4 TOTALS	2,227	55,364	16,927	6,284	22,974	43,490	124,588	59,158	331,012	325,439	-	5,573	141,584	129,564	125	742	1,773	13,792,410	472,147	1,263,075
PERIOD	5b - Site Restoration																				
Period 5b	Direct Decommissioning Activities																				
5b.1.1.1	n of Remaining Site Buildings Reactor	-	4,644	-	-	-	-	-	697	5,341	-	-	5,341	-	-	-	-	-	-	44,669	-
5b.1.1.2 5b.1.1.3	Condensate Storage Tank Foundation Structures below 3' below grade	÷	3 1,785		-	- -	-	-	0 268	$\frac{4}{2,052}$	-	- -	$\frac{4}{2,052}$	-	-	-	-	-	-	16 9,238	-
5b.1.1.4 5b.1.1.5 5b.1.1	Turbine Turbine Pedestal Totals	- - -	2,139 365 8,936	-	- - -	- -	- - -	-	321 55 1,340	2,460 420 10,276	- - -	- - -	2,460 420 10,276	- - -	- - -	- - -	- - -	-	- - -	21,985 1,857 77,765	- - -
Site Close 5b.1.2 5b.1.3 5b.1	out Activities Grade & landscape site Final report to NRC Subtotal Period 5b Activity Costs		448 - 9,384	-	- - -	- - -	- - -	- 200 200	67 30 1,438	515 231 11,022	231 231	- - -	515 - 10,792	- - -	- - -	- - -	- - -	- - -	- - -	921 - 78,686	1,560 1,560
Period 5b 5b.2.1 5b.2.2	Additional Costs Clean Concrete Disposal Intake Structure Cofferdam	- -	2,242 623	- -	- -	- -		5 -	337 93	2,583 716		- -	2,583 716	-	-	-	- -	- -		8,386 5,168	- -

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

Table G-1 Prairie Island SAFSTOR Unit 1 SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035 (Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activi	ty	Decon	Removal	Packaging	Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Inde	x Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Poriod	5b Additional Costs (continued)																				
5b.2.3	Construction Debris	_	_	_	_	_	_	10	2	12	_	_	12	_	_		_	_	_	-	_
5b.2.4	Backfill	-	3,011	_	_	-	_	-	452	3,462	-	_	3,462	_	_	-	-	-	-	2,904	_
5b.2.5	Demolition and Site Restoration of ISFSI	-	515	_	_	-	-	68	87	670	-	_	670	_	-	-	-	_	-	2,219	80
5b.2	Subtotal Period 5b Additional Costs	-	6,390	-	-	-	-	82	971	7,443	-	-	7,443	-	-	-	-	-	-	18,677	80
Period	5b Collateral Costs																				
5b.3.1	Small tool allowance	-	125	_	_	-	-	_	19	143	-	_	143	_	-	-	-	_	-	_	-
5b.3	Subtotal Period 5b Collateral Costs	-	125	-	-	-	-	-	19	143	-	-	143	-	-	-	-	-	-	-	-
Period	5b Period-Dependent Costs																				
5b.4.2	Property taxes	-	-	-	-	-	-	3,481	348	3,829	-	-	3,829	-	-	-	-	-	-	-	-
5b.4.3	Heavy equipment rental	-	7,144	-	-	-	-	´-	1,072	8,215	-	-	8,215	-	-	-	-	-	-	-	-
5b.4.4	Plant energy budget	-	-	-	-	-	-	344	52	395	-	-	395	-	-	-	-	-	-	-	-
5b.4.5	Fixed Overhead	-	-	-	-	-	-	1,024	154	1,178	-	-	1,178	-	-	-	-	-	-	-	-
5b.4.6	Railroad Track Maintenance	-	-	-	-	-	-	133	20	152	-	-	152	-	-	-	-	-	-	-	-
5b.4.7	Security Staff Cost	-	-	-	-	-	-	2,055	308	2,363	-	-	2,363	-	-	-	-	-	-	-	29,221
5b.4.8	DOC Staff Cost	-	-	-	-	-	-	10,921	1,638	12,559	-	-	12,559	-	-	-	-	-	-	-	116,885
5b.4.9	Utility Staff Cost	-	-	-	-	-	-	3,831	575	4,406	-	-	4,406	-	-	-	-	-	-	-	57,340
5b.4	Subtotal Period 5b Period-Dependent Costs	-	7,144	-	-	-	-	21,789	4,166	33,099	-	-	33,099	-	-	-	-	-	-	-	203,445
5b.0	TOTAL PERIOD 5b COST	-	23,042	-	-	-	-	22,072	6,593	51,707	231	-	51,476	-	-	-	-	-	-	97,363	205,085
PERIO	DD 5 TOTALS	-	23,042	-	-	-	-	22,072	6,593	51,707	231	-	51,476	-	-	-	-	-	-	97,363	205,085
TOTAL	COST TO DECOMMISSION	6,192	93,417	17,547	6,792	23,152	45,943	944,911	172,676	1,310,629	970,442	281,510	58,677	147,716	151,067	125	742	1,773	14,526,470	647,741	6,194,735

TOTAL COST TO DECOMMISSION WITH 15.17% CONTINGENCY:	\$1,310,629	thousands of 2020 dollars
TOTAL NRC LICENSE TERMINATION COST IS 74.04% OR:	\$970,442	thousands of 2020 dollars
SPENT FUEL MANAGEMENT COST IS 21.48% OR:	\$281,510	thousands of 2020 dollars
NON-NUCLEAR DEMOLITION COST IS 4.48% OR:	\$58,677	thousands of 2020 dollars
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	151,935	Cubic Feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	1,773	Cubic Feet
TOTAL SCRAP METAL REMOVED:	33,003	Tons
TOTAL CRAFT LABOR REQUIREMENTS:	647,741	Man-hours

End Notes: n/a - indicates that this activity not charged as decommissioning expense a - indicates that this activity performed by decommissioning staff 0 - indicates that this value is less than 0.5 but is non-zero A cell containing " - " indicates a zero value  $\frac{1}{2} \frac{1}{2} \frac{1}{$ 

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Table G-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(Th	ousands o	of 2020 Dollar	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial/		Utility and
Activity		Decon	Removal	Packaging	Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed		Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
PERIOD	1a - Shutdown through Transition																				
Period 1a	Direct Decommissioning Activities																				
1a.1.1	SAFSTOR site characterization survey	-	-	-	-	-	-	415	124	539	539	-	-	-	-	-	-	-	-	-	-
1a.1.2 1a.1.3	Prepare preliminary decommissioning cost Notification of Cessation of Operations	-	-	-	-	-	-	71	11	82 a	82	-	-	-	-	-	-	-	-	-	556
1a.1.3	Remove fuel & source material									n/a											
1a.1.5	Notification of Permanent Defueling									a											
1a.1.6 1a.1.7	Deactivate plant systems & process waste Prepare and submit PSDAR	_	_			_	_	110	16	a 126	126	_	_	_	_	_	_	_	_	_	855
1a.1.8	Review plant dwgs & specs.	-	-	-	-	-	-	71			82	-	-	-	-	-	-	-	-	-	556
1a.1.9	Perform detailed rad survey									a											
1a.1.10 1a.1.11	Estimate by-product inventory End product description	-	-	-	-	-	-	55 55	8	63 63	63 63	-	-	-	-	-	-	-	-	-	428 428
	Detailed by-product inventory	-	-	-	-	-	-	82	12		95	-	-	-	-	-	-	-	-	-	641
	Define major work sequence	-	-	-	-	-	-	55	8		63		-	-	-	-	-	-	-	-	428
1a.1.14 1a.1.15	Perform SER and EA Perform Site-Specific Cost Study	-	-	-	-	-	-	170 275	26 41		196 316		-	-	-	-	-	-	-	-	1,326 2,138
18.1.10	renorm Site-Specific Cost Study	-	-	-	-	-	-	210	41	310	510	-	-	-	-	-	-	-	-	-	2,130
	pecifications																				
	Prepare plant and facilities for SAFSTOR Plant systems	-	-	-	-	-	-	270 229	41 34	311 263	311 263	-	-	-	-	-	-	-	-	-	2,104 1,782
	Plant structures and buildings	-	-	-	-	-	-	171	26		197	-	-	-	-	-		-	-	-	1,334
1a.1.16.4	Waste management	-	-	-	-	-	-	110	16	126	126	-	-	-	-	-	-	-	-	-	855
	Facility and site dormancy	-	-	-	-	-	-	110 891	16 134		126		-	-	-	-	-	-	-	-	855 6,930
1a.1.16	Iotai	-	-	-	-	-	-	891	134	1,024	1,024	-	-	-	-	-	-	-	-	-	6,930
	Work Procedures																				
	Plant systems Facility closeout & dormancy	-	-	-	-	-	-	65 66	10 10		75 76		-	-	-	-	-	-	-	-	506 513
	Total	-	-	-	-	-	-	131	20		151	-	-	-	-	-	-	-	-	-	1,019
1a.1.18	Procure vacuum drying system	_	_		_	_	_	5	1	6	6	_	_	_		_		_		_	43
	Drain/de-energize non-cont. systems								-	a	Ü										10
	Drain & dry NSSS									a											
1a.1.21 1a.1.22	Drain/de-energize contaminated systems Decon/secure contaminated systems									a											
	Subtotal Period 1a Activity Costs	-	-	-	-	-	-	2,387	420	2,807	2,807	-	-	-	-	-	-	-	-	-	15,347
Period 1a	Collateral Costs																				
1a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,330	199		-	1,529	-	-	-	-	-	-	-	-	-
1a.3.2	Retention and Severance Prairie Island Indian Community Payments	-	-	-	-	-	-	8,394	1,259		9,653	1 940	-	-	-	-	-	-	-	-	-
1a.3.3 1a.3	Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	1,249 10,973	1,459	1,249 12,432	9,653	1,249 2,779		-	-	-	-	-	-	-	-
								,	-,	,	0,000	_,									
Period 1a 1a.4.1	Period-Dependent Costs Insurance							1,660	166	1,826	1,826										
1a.4.1 1a.4.2	Property taxes	-	-	-	-	-	-	3,623	362		3,985	-	-	-	-	-	-	-	-	-	-
1a.4.3	Health physics supplies	-	604	-	-	-	-	-,	151	755	755	-	-	-	-	-	-	-	-	-	-
1a.4.4	Heavy equipment rental	-	753		-	-	-	-	113		866	-	-	-	-	-	-	-	-	-	-
1a.4.5	Disposal of DAW generated	-	-	12		-	49		14		80	-	-	-	597	-	-	-	11,944	19	-
1a.4.6 1a.4.7	Plant energy budget	-	-	-	-	-	-	1,621 516	243 52		1,864 567	-	-	-	-	-	-	-	-	-	-
1a.4.7 1a.4.8	NRC Fees Emergency Planning Fees	-		-	-	-	-	2.174	52 217	2.392	567	2,392	-	-	-	-	-	-	-	-	-
1a.4.9	Fixed Overhead	-	-	-	-	-	-	1,440	216	1,656	1,656	-	-	-	-	-	-	-	-	-	-
	Spent Fuel Pool O&M	-	-	-	-	-	-	422	63		-	486		-	-	-	-	-	-	-	-
1a.4.11 1a.4.12	ISFSI Operating Costs Railroad Track Maintenance	<del>-</del>	-	-	-	-	-	56 63	8 9	64 72	72	64	<del>-</del>	-	-	-	-	-	-	-	-
	Security Staff Cost	-		-	-	-	-	8,328	1,249		9,577	-	-	-		-	-	-	-	-	122,720
1a.4.14	Utility Staff Cost	-	-	-	-	-	-	25,478	3,822	29,300	29,300	-	-	-	-	-	-	-	-	-	400,944
1a.4	Subtotal Period 1a Period-Dependent Costs	-	1,357	12		-	49	45,381	6,687	53,491	50,549	2,942	-	-	597	-	-	-	11,944	19	523,664
1a.0	TOTAL PERIOD 1a COST	-	1,357	12	ŧ	5 -	49	58,742	8,566	68,730	63,010	5,720	-	-	597	-	-	-	11,944	19	539,011

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Table G-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(Th	ousands o	of 2020 Dollar	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Rurial	Volumes		Burial /		Utility and
Activity	<b>y</b>	Decon	Removal	Packaging	Transport			Other	Total	Total	Lic. Term.	Management		Volume	Class A	Class B		GTCC		Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
PERIOD	1b - SAFSTOR Limited DECON Activities																				
Period 1b	Direct Decommissioning Activities																				
Decontan	nination of Site Buildings																				
	Reactor	1,199		-	-	-	-	-	599	1,798	1,798	-	-	-	-	-	-	-	-	17,003	-
1b.1.1.2	Auxiliary	1,244		-	-	-	-	-	622	1,866	1,866	-	-	-	-	-	-	-	-	17,950	-
1b.1.1.3	Drum Transfer & Truck Loading Enclosure LLRW Storage Enclosure	17 116		-	-	-	-	-	8 58	25 175	25 175	=	-	-	-	-	-	-	-	244 1,673	=
1b.1.1.4 1b.1.1.5	Radwaste	52		-	-	-	-	-	26	78	78	-	-	-	-	-	-	-	-	749	-
1b.1.1.6		15		-	-	-	-	-	8	23	23	-	-	-	-	-	-	-	-	221	-
1b.1.1.7		1,014		-	-	-	-	-	507	1,521	1,521	=	=	-	-	-	-	-	-	13,854	-
1b.1.1	Totals	3,658	-	-	-	-	-	-	1,829	5,486	5,486	-	-	-	-	-	-	-	-	51,694	-
1b.1	Subtotal Period 1b Activity Costs	3,658	-	-	-	-	-	-	1,829	5,486	5,486	-	-	-	-	-	-	-	-	51,694	-
	Additional Costs																				
1b.2.1	Spent Fuel Pool Isolation	-	-	-	-	-	-	8,450	1,268	9,718	9,718	-	-	-	-	-	-	-	-	-	-
1b.2	Subtotal Period 1b Additional Costs	-	-	-	-	-	-	8,450	1,268	9,718	9,718	-	-	-	-	-	-	-	-	-	-
Period 1b 1b.3.1	Collateral Costs	1,055						_	158	1,213	1,213								_	_	
1b.3.1 1b.3.2	Decon equipment Process decommissioning water waste	1,055		71	128	- 8 -	288		152		747	-	-	-	661	-	-	-	39,679	129	-
1b.3.4	Small tool allowance	-	61		-	-	-	-	9		70	_	-	_	-	-	_	-	-	-	-
1b.3.5	Spent Fuel Capital and Transfer	-	-	-	-	-	-	309	46	356	-	356	-	-	-	-	-	-	-	-	-
1b.3.6	Retention and Severance	-	-	-	-	-	-	2,296	344		2,640	-	-	-	-	-	-	-	-	-	-
1b.3.7 1b.3	Prairie Island Indian Community Payments Subtotal Period 1b Collateral Costs	1,162	61	71	128	8 -	288	311 2,917	710	311 5,337	4,670	311 667		-	661	-	-	-	39,679	129	-
	o Period-Dependent Costs																				
1b.4.1	Decon supplies	1,334	_	_	-	_	-	_	333	1,667	1,667	_	_	_	_	_	_	_	_	-	_
1b.4.2	Insurance	-	-	-	-	-	-	414	41	455	455	-	-	-	-	-	-	-	-	-	-
1b.4.3	Property taxes	•	-	-	-	-	-	902	90		993	-	-	-	-	-	-	-	-	-	-
1b.4.4	Health physics supplies	-	448		-	-	-	-	112		560	-	-	-	-	-	-	-	-	-	-
1b.4.5 1b.4.6	Heavy equipment rental Disposal of DAW generated	•	188	13	-	-	53	-	28 15	216 86	216 86	-	-	-	641	-	-	-	12,830	21	-
1b.4.7	Plant energy budget	-	-	-		-	-	404	61	465	465	-	-	-	-	-	-	-	12,030		-
1b.4.8	NRC Fees	-	-	-	-	-	-	98	10		108	-	-	-	-	-	-	-	-	-	-
1b.4.9	Emergency Planning Fees	-	-	-	-	-	-	542	54		-	596	-	-	-	-	-	-	-	-	-
1b.4.10	Fixed Overhead	-	-	-	-	-	-	359 105	54	413	413	-	-	-	-	-	-	-	-	-	-
1b.4.11 1b.4.12	Spent Fuel Pool O&M ISFSI Operating Costs	-	_	-	-	-	-	105	16 2		-	121 16		-	-	-	-	-	-	-	-
1b.4.13	Railroad Track Maintenance	-	_	-	-	-	-	16	2	18	18	-	-	-	-	-	_	_	_	-	-
1b.4.14	Security Staff Cost	-	-	-	-	-	-	2,076	311		2,388	-	-	-	-	-	-	-	-	-	30,596
1b.4.15	Utility Staff Cost	-	-	-		-	-	6,714	1,007	7,722	7,722	-	-	-	-	-	-	-	-	-	105,271
1b.4	Subtotal Period 1b Period-Dependent Costs	1,334	635	13	ŧ	5 -	53	11,645	2,138	15,823	15,089	733	-	-	641	-	-	-	12,830	21	135,867
1b.0	TOTAL PERIOD 1b COST	6,153	696	84	133	3 -	341	23,012	5,944	36,364	34,963	1,401	-	-	1,303	-	-	-	52,509	51,844	135,867
PERIOD	1 1c - Preparations for SAFSTOR Dormancy																				
Period 1c	e Direct Decommissioning Activities																				
1c.1.1	Prepare support equipment for storage	-	527		-	-	-	-	79		606	-	-	-	-	-	-	-	-	3,000	-
1c.1.2	Install containment pressure equal. lines	-	54	-	-	-	-	733	8 220		62	-	-	-	-	-	-	-	-	700	-
1c.1.3 1c.1.4	Interim survey prior to dormancy Secure building accesses	-	-	-	-	-	-	199	220	999 a	953	-	-	-	-	-	-	-	-	12,801	-
1c.1.5	Prepare & submit interim report	-	-	-	-	-	-	32	5	37	37	-	-	-	-	-	-	-	-	-	249
1c.1	Subtotal Period 1c Activity Costs	-	581	-	-	-	-	765	312	1,658	1,658	-	-	-	-	-	-	-	-	16,501	249
	e Collateral Costs																				
1c.3.1	Process decommissioning water waste	91		60		9 -	245		129	634	634	-	-	-	561	-	-	-	33,685	109	-
1c.3.2	Process decommissioning chemical flush waste	-		-	-	-	-	-	- 1		-	-	-	-	-	-	-	-	-	-	-
1c.3.3 1c.3.4	Small tool allowance Spent Fuel Capital and Transfer	-	5	-	-	-	-	90	1 13	6 103		103	-	-	-	-	-	-	-	-	-
1c.3.5	Retention and Severance	-	-	-	-	-	-	1,722	258		1,980		-	-	-	-	-	-	-	-	-
1c.3.6	Prairie Island Indian Community Payments	-	-	-	-	-	-	311	-	311	-	311	-	-	-	-	-	-	-	-	-

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Table G-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(111)	ousanus c	oi 2020 Dollar	3)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet		Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
Poriod 1	c Period-Dependent Costs																				
1c.3	Subtotal Period 1c Collateral Costs	91	5	60	109	-	245	2,123	401	3,034	2,619	415	_	_	561	_	_	_	33,685	109	_
1c.4.1	Insurance	-	-	-	-	-		414	41	455	455	-	-	-	-	-	-	-	-	-	-
1c.4.2	Property taxes	-	-	-	-	-	-	901	90	991	991	-	-	-	-	-	-	-	-	-	-
1c.4.3	Health physics supplies	-	248		-	-	-	-	62	309	309	-	-	-	-	-	-	-	-	-	-
1c.4.4	Heavy equipment rental	-	188			-	-	-	28	216	216 20	-	-	-	-	-	-	-	-		-
1c.4.5 1c.4.6	Disposal of DAW generated Plant energy budget	-	-	3	1	-	13	404	4 61	20 465	465	-	-	-	152	-	-	-	3,039	5	-
1c.4.7	NRC Fees	-	-	-	-	-	-	98	10	108	108	-	-	-	-	-	-	-	-	-	-
1c.4.8	Emergency Planning Fees	-	-	-	-	-	-	542	54	596	-	596	-	-	-	-	-	-	-	-	=
1c.4.9	Fixed Overhead	-	-	-	-	-	-	359	54	413	413	-	-	-	-	-	-	-	-	-	-
1c.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	105	16	121	-	121	-	-	-	-	-	-	-	-	-
1c.4.11	ISFSI Operating Costs	-	-	-	-	-	-	14	2	16	-	16	-	-	-	-	-	-	-	-	-
1c.4.12 1c.4.13	Railroad Track Maintenance Security Staff Cost	-	-	-	=	-	-	16 2,076	2 311	18 2,388	18 2,388		-	-	-	-	-	-	-	-	30,596
1c.4.13	Utility Staff Cost		-	-	-	-	-	6,714	1,007	7,722	7,722	-	-	-	-	_	-	-	-	-	105,271
1c.4.14	Subtotal Period 1c Period-Dependent Costs	-	435	3	1	-	13	11,643	1,742	13,838	13,104	733	-	-	152	-	-	-	3,039	5	
1c.0	TOTAL PERIOD 1c COST	91	1,021	63	110	-	257	14,531	2,456	18,530	17,382	1,148	-	-	713	-	-	-	36,724	16,615	136,116
PERIO	O 1 TOTALS	6,244	3,074	159	248	_	647	96,285	16,965	123,623	115,354	8,269	-	-	2,613	-	-	-	101,177	68,478	810,994
PERIOI	2a - SAFSTOR Dormancy with Wet Spent Fuel Storage																				
Period 2	a Direct Decommissioning Activities																				
2a.1.1	Quarterly Inspection									a											
2a.1.2	Semi-annual environmental survey									a											
2a.1.3	Prepare reports									a											
2a.1.4	Bituminous roof replacement	-	-	-	-	-	-	223	33	256	256	-	-	-	-	-	-	-	-	-	-
2a.1.5 2a.1	Maintenance supplies Subtotal Period 2a Activity Costs	-	-	-	-	-	-	349 572	87 121	437 693	437 693	-	-	-	-	-	-	-	-	-	-
Period 2	a Additional Costs																				
2a.2.1	Security Modifications	-	-	-	-	-	-	4,348	652	5,000	5,000	-	-	-	-	-	-	-	-	-	-
2a.2	Subtotal Period 2a Additional Costs	-	-	-	-	-	-	4,348	652	5,000	5,000	-	-	-	-	-	-	-	-	-	-
	a Collateral Costs																				
2a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	59,354	8,903	68,257	10.510	68,257	-	-	-	-	-	-	-	-	-
2a.3.2 2a.3.3	Retention and Severance Prairie Island Indian Community Payments	-	-	-	-		-	11,054 3,128	1,658	12,712 3,128	12,712	3,128	-	-	-	-	-	-	-	-	-
2a.3	Subtotal Period 2a Collateral Costs	-	-	-	-	-	-	73,536	10,561	84,097	12,712	71,385	-	-	-	-	-	-	-	-	-
Period 2	a Period-Dependent Costs																				
2a.4.1	Insurance	-	-	-	-	-	-	1,213	121	1,334	1,334	-	-	-	-	-	-	-	-	-	-
2a.4.2	Property taxes	-	-	-	-	-	-	9,065	907	9,972	9,972	-	-	-	-	-	-	-	-	-	-
2a.4.3 2a.4.4	Health physics supplies Disposal of DAW generated	-	617	11		-	47	-	154 14	771 77	771 77	-	-	-	576	-	-	-	11,523	19	-
2a.4.4 2a.4.5	Plant energy budget	-	-	11	Э	-	41	812	122	934	934	-	-	-	976	-	-	-	11,323	19	-
2a.4.6	NRC Fees	-	-	-	-	-	-	536	54	590	590	-	-	-	-		-	-	-	-	-
2a.4.7	Emergency Planning Fees	-	-	-	-	-	-	4,653	465	5,119	-	5,119	-	-	-	-	-	-	-	-	=
2a.4.8	Fixed Overhead	-	-	-	-	-	-	2,979	447	3,426	3,426	· -	-	-	-	-	-	-	-	-	-
2a.4.9	Spent Fuel Pool O&M	-	-	-	-	-	-	1,057	159	1,216	-	1,216	-	-	-	-	-	-	-	-	-
2a.4.10	ISFSI Operating Costs	-	-	-	-	-	-	140	21	161	-	161	-	-	-	-	-	-	-	-	-
2a.4.11 2a.4.12	Railroad Track Maintenance Security Staff Cost	-	-	-	=	-	-	385 19,158	58 2,874	443 $22.032$	443 15,863	6,169	-	-	-	-	-	-	-	-	281,262
2a.4.12 2a.4.13	Utility Staff Cost	-	-	-	-	-	-	13,370	2,006	15,376	12,900	2,476	-	-	-		-	-	-	-	205,738
2a.4.16	Subtotal Period 2a Period-Dependent Costs	-	617		5	-	47	53,370	7,400	61,450	46,309	15,140	-	-	576	-	-	-	11,523	19	486,999
2a.0	TOTAL PERIOD 2a COST	-	617	11	5	-	47	131,825	18,734	151,240	64,714	86,525	-	-	576	-	-	-	11,523	19	486,999
PERIO	O 2b - SAFSTOR Dormancy with Dry Spent Fuel Storage																				
	b Direct Decommissioning Activities																				
2b.1.1	Quarterly Inspection									a											
2b.1.2	Semi-annual environmental survey									a											
2b.1.3 2b.1.4	Prepare reports Bituminous roof replacement					_	_	9 000	483	a 3,705	9.705										
2b.1.4 2b.1.5	Maintenance supplies	-	-	-	-	-	-	3,222 5,052	483 1,263	6,315	3,705 6,315	-	-	-	-	-	-	-	-	-	-
40.1.0		-	-	-	-	-	-	5,052	1,200	5,515	0,010	-	-	-	-	-	-	-	-	-	-

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Table G-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Volumes		Burial/		Utility and
Activity		Decon	Removal		Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
2b.1	Subtotal Period 2b Activity Costs	-	-	-	-	-	-	8,274	1,746	10,020	10,020	-	-	-	-	-	-	-	-	-	-
Dowlad 9h	Collateral Costs																				
2b.3.1	Spent Fuel Capital and Transfer	-	-	-	_	-	-	15,884	2,383	18,267	_	18,267	-	_	-	-	-	-	-	-	-
2b.3.2	Prairie Island Indian Community Payments	-	-	-	-	-	-	45,219	-	45,219	-	45,219	-	-	-	-	-	-	-	-	-
2b.3	Subtotal Period 2b Collateral Costs	-	-	-	-	-	-	61,103	2,383	63,486	-	63,486	-	-	-	-	-	-	-	-	-
Period 2b	Period-Dependent Costs																				
2b.4.1	Insurance	-	-	-	-	-	-	17,530	1,753	19,283	19,283	-	-	-	-	-	-	-	-	-	-
2b.4.2 2b.4.3	Property taxes Health physics supplies	-	4,112	-	-	-	-	131,056	13,106 1,028	144,162 5,140	144,162 5,140	-	-	-	-	-	-	-	-	-	-
2b.4.4	Disposal of DAW generated	-	4,112	74	30	-	308		89	501	501	-	-	-	3,739	-	-	-	74,786	122	-
2b.4.5	Plant energy budget	-	-	-	-	-	-	5,869	880	6,749	6,749	-	-	-	´-	-	-	-	-	-	-
2b.4.6	NRC Fees	-	-	-	-	-	-	7,459	746	8,205 2,952	8,205	- 0.050	-	-	-	-	-	-	-	-	-
2b.4.7 2b.4.8	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	2,684 5,898	268 885	2,952 6,783	6,783	2,952	-	-		-		-	-	-	-
2b.4.9	ISFSI Operating Costs	-	-	-	-	-	-	2,026	304	2,330	-	2,330	-	-	-	-	-	-	-	-	-
2b.4.10	Railroad Track Maintenance	-	-	-	-	-	-	2,263	339	2,603	2,603		-	-	-	-	-	-	-	-	
2b.4.11 2b.4.12	Security Staff Cost Utility Staff Cost	-	-	-	-	-	-	101,034 49,438	15,155 7,416	116,189 56,854	25,562 35,704	90,627 21,150	-	-	-	-	-	-	-	-	1,355,328 752,960
2b.4.12 2b.4	Subtotal Period 2b Period-Dependent Costs	-	4,112		30	-	308	49,438 325,257	41,969	371,750	254,691	21,150 117,059	-		3,739	-	-	-	74,786	122	2,108,288
2b.0	TOTAL PERIOD 2b COST	-	4,112	74	30	-	308	394,634	46,098	445,256	264,712	180,544	-	-	3,739	-	-	-	74,786	122	2,108,288
PERIOD	2c - SAFSTOR Dormancy without Spent Fuel Storage																				
	Direct Decommissioning Activities																				
2c.1.1	Quarterly Inspection									a											
2c.1.2 2c.1.3	Semi-annual environmental survey									a											
2c.1.3	Prepare reports Bituminous roof replacement	_	_	_	_	_	-	1,180	177	1,357	1,357	_	_	-	-	_	_	_	-	-	_
2c.1.5	Maintenance supplies	-	-	-	-	-	-	1,851	463	2,313	2,313	-	-	-	-	-	-	-	-	-	-
2c.1	Subtotal Period 2c Activity Costs	-	-	-	-	-	-	3,031	640	3,671	3,671	-	-	-	-	-	-	-	-	-	-
Period 2c	Period-Dependent Costs																				
2c.4.1	Insurance	-	-	-	-	-	-	3,705	370	4,075	4,075	-	-	-	-	-	-	-	-	-	-
2c.4.2 2c.4.3	Property taxes Health physics supplies	-	1,428	-	-	-	-	30,788	3,079 357	33,867 1,785	33,867 1,785	-	-	-	-	-	-	-	-	-	-
2c.4.4	Disposal of DAW generated	_	- 1,420	25	10	-	105	-	30	171	171	-	-	_	1,274	-	-	-	25,478	42	-
2c.4.5	Plant energy budget	-	-	-	-	-	-	2,150	322	2,472	2,472	-	-	-		-	-	-		-	-
2c.4.6	NRC Fees	-	-	-	-	-	-	2,606	261	2,866	2,866	-	-	-	-	-	-	-	-	-	-
2c.4.7 2c.4.8	Fixed Overhead Railroad Track Maintenance	-	-	-	-	-	-	2,161 829	324 124	2,485 953	2,485 953	-	-	-	-	-		-	-	-	-
2c.4.9	Utility Staff Cost	-	-	-	-	-	-	6,584	988	7,572	7,572	-	-	-	-	-	-	-	-	-	110,326
2c.4	Subtotal Period 2c Period-Dependent Costs	-	1,428	25	10	-	105	48,823	5,856	56,247	56,247	-	-	-	1,274	-	-	-	25,478	42	110,326
2c.0	TOTAL PERIOD $2c$ COST	-	1,428	25	10	-	105	51,854	6,496	59,918	59,918	-	-	-	1,274	-	-	-	25,478	42	110,326
PERIOD	2 TOTALS	-	6,157	111	45	-	461	578,313	71,327	656,413	389,344	267,069	-	-	5,589	-	-	-	111,786	182	2,705,613
PERIOD	3a - Reactivate Site Following SAFSTOR Dormancy																				
Period 3a	Direct Decommissioning Activities																				
3a.1.1	Prepare preliminary decommissioning cost	-	-	-	-	-	-	71	11	82	82	-	-		-	-	-		-	-	550
3a.1.2	Review plant dwgs & specs.	-	-	-	-	-	-	253	38	291	291	-	-	-	-	-	-	-	-	-	1,967
3a.1.3 3a.1.4	Perform detailed rad survey End product description				_	_	_	55	8	a 63	63		_		_	_	_	_			428
3a.1.5	Detailed by-product inventory	-	-	-	-	-	-	55 71	11	82	82	-	-	-	-	-	-	-	-	-	556
3a.1.6	Define major work sequence	-	-	-	-	-	-	412	62	474	474	-	-	-	-	-	-	-	-	-	3,207
3a.1.7	Perform SER and EA	-	-	-	-	-	-	170	26	196	196	-	-	-	-	-	-	-	-	-	1,320
3a.1.8 3a.1.9	Prepare/submit Defueled Technical Specifications Perform Site-Specific Cost Study	-	-	-	-	-	-	412 275	62 41	474 316	474 316	-	-	-	-	-	-	-	-	-	3,20° 2,136
	Prepare/submit Irradiated Fuel Management Plan	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
Activity C	pecifications																				
	Re-activate plant & temporary facilities	-	-	-	-	-	-	405	61	466	419	-	47	-	-	-	-	-	-	-	3,15
3a.1.11.2	Plant systems	-	-	-	-	-	-	229	34	263	237	-	26		-	-	-	-	-	-	1,782
3a.1.11.3	Reactor internals	-	-	-	-	-	-	390	59	449	449	-	-	-	-	-	-	-	-	-	3,036

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Table G-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(The	ousanas c	of 2020 Dollar	5)											
Activit		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
3a.1.11. 3a.1.11.	4 Reactor vessel 5 Biological shield 6 Steam generators		- - -	- - -		- - -	- - -	357 27 171	54 4 26	411 32 197	411 32 197	- - -	- - -		- - -		- - -	- - -	- - -		2,779 214 1,334
3a.1.11. 3a.1.11.	Specifications (continued) Reinforced concrete Main Turbine	-	-	-	-	-	-	88 22	13 3	101 25	51	-	51 25	-	-	-	-	-	-	-	684 171
3a.1.11.	9 Main Condensers 10 Plant structures & buildings 11 Waste management	- - -	-	-	-	-	-	22 171 253	3 26 38	25 197 291	99 291	- - -	25 99 -	-	- - -	- - -	-	-	-	-	171 1,334 1,967
3a.1.11. 3a.1.11	12 Facility & site closeout Total	-	-	-	-	-	-	49 2,186	7 328	57 2,514	28 2,213	-	28 301	-	-	-	-	-	-	-	385 17,009
Plannin 3a.1.12 3a.1.13		-	-	-	-	-	-	132 3,500	20 525	152 $4,025$	152 4,025	-	-	-	-	-	-	-	-	-	1,026
3a.1.14 3a.1.15 3a.1.16	Design water clean-up system		-	-	-	-	-	77 2,400 68	12 360 10	88 2,760 78	88 2,760 78		-	-	-	-	-	-	-	-	599 - 526
3a.1	Subtotal Period 3a Activity Costs	- -	-	-	-	-	-	10,137	1,521	11,658	11,357	-	301	-	-	-	-	-	-	-	32,971
3a.2.1 3a.2.2	a Additional Costs Site Characterization Mixed/Hazardous Waste	-	-	- 353	94			1,505	451 76	1,956 702	1,956 702	-	-	6,132	-	-	-	-	351,977	8,988 2,348	
3a.2.3 3a.2	Asbestos Abatement Subtotal Period 3a Additional Costs	-	2,526 2,526	3 356	150 244		1,369 1,369		996 1,524	5,044 7,702	5,044 7,702	-	-	6,132	12,843 12,843	-	-	-	166,959 518,936	20,907 32,243	
Period 3 3a.3.1 3a.3	a Collateral Costs Small tool allowance Subtotal Period 3a Collateral Costs	- -	34 34	-	-	-	-	-	5 5	39 39	39 39	-	-	- -	-	-	-	-	-	-	-
3a.4.1	a Period-Dependent Costs Insurance	-	-	-	-		-	279	28	307	307	-	-	-	-	-	-	-	-	-	-
3a.4.2 3a.4.3 3a.4.4	Property taxes Health physics supplies Heavy equipment rental	- -	641 753	- - -	- - -	-	-	2,249	225 160 113	2,474 802 866	2,474 802 866	- - -	- - -	-	- - -	- -	- - -	- - -	- - -	-	- - -
3a.4.5 3a.4.6 3a.4.7	Disposal of DAW generated Plant energy budget NRC Fees	-	-	10	-	4 -	40	1,621 260	11 243 26	64 1,864 286	64 1,864 286	-	-	-	481	-	-	-	9,613	16	-
3a.4.8 3a.4.9	Fixed Overhead Railroad Track Maintenance Security Staff Cost	-	- -	-	-	-	-	1,440 63 368	216 9 55	1,656 72 424	1,656 72 424	- -	-	- - -	- - -	-	-	-	-	- - -	6,240
3a.4.10 3a.4.11 3a.4	Utility Staff Cost Subtotal Period 3a Period-Dependent Costs	- - -	1,394	10	- - 4	-	40	12,056	1,808 2,896	13,864 22,679	13,864 22,679	- - -	- - -	- - -	481	- - -	-	- -	9,613	16	199,680
3a.0	TOTAL PERIOD 3a COST	-	3,954	366	248	8 178	3 1,409	29,979	5,946	42,079	41,778	-	301	6,132	13,324	-	-	-	528,549	32,259	242,454
	D 3b - Decommissioning Preparations b Direct Decommissioning Activities																				
Detailed 3b.1.1.1	l Work Procedures Plant systems							260	39	299	269		30								2,024
3b.1.1.2 3b.1.1.3	Reactor internals Remaining buildings	- -	-	-	-		-	137 74	21 11	158 85	158 21	-	- 64	-	-	-	-	-	-	-	1,069 577
3b.1.1.4 3b.1.1.5 3b.1.1.6	CRD housings & ICI tubes	- -	- - -	-	-	-	-	55 55 55	8 8 8	63 63 63	63 63 63	-	- -	-	-	-	-	-	-	-	428 428 428
3b.1.1.7 3b.1.1.8 3b.1.1.9	Reactor vessel Facility closeout	-	-	- - -	- -	-	-	199 66 25	30 10 4	229 76 28	229 38 28	-	38	-	-	-	-	- - -	-	-	1,552 513 192
3b.1.1.1 3b.1.1.1	0 Biological shield 1 Steam generators	-	-	-	-	-	-	66 253 55	10 38 8	76 291	76 291	-	32	-	-	-	-	-	-	-	513 1,967 428
3b.1.1.1 3b.1.1.1	2 Reinforced concrete 3 Main Turbine 4 Main Condensers	- -	- -	-	- -	-	-	86 86	13 13	63 99 99	32 - -	- - -	99 99	-	-	- - -	-	- - -	- - -	-	667 667
	5 Auxiliary building 6 Reactor building Total	- - -	- - -	- - -	- - -	- - -	- - -	150 150 1,772	23 23 266	173 173 2,038	155 155 1,643	-	17 17 395	- - -	- - -	- - -	- - -	- - -	- - -	- - -	1,167 1,167 13,787

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Table G-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(1110	Jusanus	oi 2020 Dollar	3)											
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
3b.1	Subtotal Period 3b Activity Costs	-	-	-	-	-	-	1,772	266	2,038	1,643	-	395	-	-	-	-	-	-	-	13,787
Period 31	b Collateral Costs																				
3b.3.1	Decon equipment	1,055	-	-	-	-	-	-	158	1,213	1,213	-	-	-	-	-	-	-	-	-	-
3b.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-
3b.3.3 3b.3	Pipe cutting equipment Subtotal Period 3b Collateral Costs	1,055	1,200 1,200	-	-	-	-	1,264	180 528	1,380 4,047	1,380 4,047	-	-	-	-	-	-	-	-	-	-
Period 31	b Period-Dependent Costs																				
3b.4.1	Decon supplies	38		-	-	-	-	-	9	47	47	-	-	-	-	-	-	-	-	-	-
3b.4.2	Insurance	-	-	-	-	-	-	241	24	266	266	-	-	-	-	-	-	-	-	-	-
3b.4.3	Property taxes	-	<u>-</u>	-	-	-	-	1,019	102	1,121	1,121	-	-	-	-	-	-	-	-	-	-
3b.4.4 3b.4.5	Health physics supplies Heavy equipment rental	-	274 375	-	-	-	-	-	68 56	342 432	342 432	-	-	-	-	•	-	-	-	-	-
3b.4.6	Disposal of DAW generated	-		- 5	2	-	22	-	6	35	35	-	-	-	264		-	-	5,286	9	-
3b.4.7	Plant energy budget	-	-	-		-		808	121	930	930	=	-	-	-	-	-	-	- 0,200	-	-
3b.4.8	NRC Fees	-	-	-	-	-	-	129	13	142	142	-	-	-	-	-	-	-	-	-	-
3b.4.9	Fixed Overhead	-	-	-	-	-	-	718	108	826	826	-	-	-	-	-	-	-	-	-	-
3b.4.10	Railroad Track Maintenance	-	-	-	-	-	-	31	5	36	36	-	-	-	-	•	-	-	-	-	- 0.111
3b.4.11 3b.4.12	Security Staff Cost DOC Staff Cost	-	-	-	-	-	-	184 3.727	28 559	211 4.287	211 4.287	-	-	-	-		-	-	-	-	3,111 42,523
3b.4.12	Utility Staff Cost	-	-	-	-	-	-	6,011	902	6,913	6,913	-	-	-	-		-	-	-	-	99,566
3b.4	Subtotal Period 3b Period-Dependent Costs	38	649	5	2	-	22	12,870	2,002	15,588	15,588	-	-	-	264	-	-	-	5,286	9	145,201
3b.0	TOTAL PERIOD 3b COST	1,092	1,849	5	2	-	22	15,906	2,795	21,672	21,277	-	395	-	264	-	-	-	5,286	g	158,988
PERIOI	O 3 TOTALS	1,092	5,803	371	250	178	1,430	45,885	8,741	63,751	63,054	-	696	6,132	13,588	-	-	-	533,835	32,267	401,442
PERIOI	0 4a - Large Component Removal																				
Period 4a	a Direct Decommissioning Activities																				
Nuclear	Steam Supply System Removal																				
4a.1.1.1	Reactor Coolant Piping	11	42	10	11	66	94	-	52	285	285	-	-	240	254	-	-	-	33,680	778	-
4a.1.1.2		5		6	7	44	62	-	31	174	174	-	-	160		-	-	-	22,441	352	-
4a.1.1.3		13		46	85	-	463	-	155	822	822	-	-	-	2,332	-	-	-	295,800	1,226	
4a.1.1.4 4a.1.1.5		-	77 3,307	382 1,690	91 1,743	2,409	776 3,885	-	265 2,590	1,591 15,625	1,591 15,625	-	-	18,672	2,196 10,990	-	-	-	158,199 1,581,180	1,346 10,253	
4a.1.1.6		63		205	1,743	326	454	-	2,330	1,623	1,623	-	-	2,138	2,146	-	-		165,025	4,449	
4a.1.1.7	Reactor Vessel Internals	51		11,350	862	-	7,848	278	10,531	35,570	35,570	-	-	2,100	1,174	-	673	-	167,337	22,373	1,053
4a.1.1.8	Vessel & Internals GTCC Disposal	-	-	-	-	-	8,680	-	1,302	9,982	9,982	-	-	-	-	-	-	1,773	344,823	-	-
4a.1.1.9 4a.1.1	Reactor Vessel Totals	144	5,835 14,237	1,653 15,343	442 3,284	2,845	3,268 $25,531$	278 556	6,576 21,785	18,053 83,725	18,053 83,725	-	-	21,210	9,245 28,505	-	673	1,773	579,324 3,347,810	22,373 63,151	1,053 5,187
	of Major Equipment																				
4a.1.2	Main Turbine/Generator	-	292	116	35	555	-	-	173	1,170	1,170	-	-	2,243	-	-	-	-	134,601	4,116	-
4a.1.3	Main Condensers	-	2,510	79	33	742	-	-	752	4,115	4,115	-	-	4,000	-	-	-	-	180,000	34,978	-
	ng Costs from Clean Building Demolition																				
4a.1.4.1		-	794	-	-	-	-	-	119	913	913	-	-	-	-	-	-	-	-	7,589	
4a.1.4.2 4a.1.4.3		-	221 9	-	-	-	-	-	33 1	254 10	254 10	-	-	-	-	-	-	-	-	1,309 65	-
4a.1.4.5 4a.1.4	Totals	-	1,023	-	-	-	-	-	154	1,177	1,177	-	-	-	-	-	-	-	-	8,963	
Disposal	of Plant Systems																				
4a.1.5.1		-	6	-	-	-	-	-	1	7	-	-	7	-	-	-	-	-	-	90	
4a.1.5.2		-	29	-	-	-	-	-	4	33	-	-	33	-	-	-	-	-	-	422	-
4a.1.5.3		-	46 38	- 0	- ,	30	-	-	7 14	53	- 0.4	-	53	170	-	-	-	-	7 01 4	676 486	
4a.1.5.4 4a.1.5.5		-	38 90	- 0	1	30 -	-	-	14 13	84 103	84	-	103	178		-	-		7,214	1,331	-
4a.1.5.6		-	40	0	2	40	-	-	16	99	99	-	-	240	-	-	-	-	9,761	468	-
4a.1.5.7	Chemical Feed	-	17	-	-	-	-	-	3	20	-	-	20	-	-	-	-	-	-	261	-
4a.1.5.8		-	3		0	3	-	-	1	7	7	-	-	16	-	-	-	-	634	31	-
4a.1.5.9		-	27	-	-	-	-	-	4	32	-	-	32	-	-	-	-	-	-	401	-
	Condensate Condensate Polishing	-	525 208	-	-	-	-	-	79 31	603 239	-	-	603 239	-	-	-	-	-	-	7,537 2,987	<del>-</del>
	2 Condensate Polishing - RCA	-	38	1	4	81	-	_	22	145	145	-	239	483	-	-	-	-	19,616	493	-
	B Electro-Hydraulic	-	10			-	-	_	1	11	-	-	11	-	-	-	-	-	-	143	-

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Table G-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(1nc	ousanas c	of 2020 Dollar	s)											
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Disposal	of Plant Systems (continued)																				
	External Circulating Water	-	26	-	-	-	-	-	4	30	-	-	30	-	-	-	-	-	-	385	-
4a.1.5.15	External Circulating Water - RCA	-	72	1	5	121	-	-	37	237	237	-	-	721	-	-	-	-	29,284	938	-
4a.1.5.16	Feedwater	-	127	-	-	-	-	-	19	146	-	-	146	-	-	-	-	-	-	1,840	-
	Feedwater - RCA	-	248	8	31	694	-	-	171	1,152	1,152	-	-	4,147	-	-	-	-	168,414	3,377	-
	Gland Seal	-	34	-	-	-	-	-	5	39	-	-	39	-	-	-	-	-	-	504	-
	Heater Drain	-	384	-	-	-	-	-	58	441	-	-	441	-	-	-	-	-	-	5,638	-
	Hypobromous Acid Feed	-	6	-	-	-	-	-	1	7	-	-	7	-	-	-	-	-	-	86	-
	Hypobromous Acid Feed - RCA	-	1	0	0	0	-	-	0	2	2	-	-	2	-	-	-	-	100	12	-
	Internal Circ Water & CDSR Main Gen/Exciter/Transformer	-	25 0	-	-	-	-	-	4	29	-	-	29	-	-	-	-	-	-	366 5	-
	Main Steam	-	101	-	-	-	-	-	15	116	-	-	116	-	-	-	-	-	-	1,482	-
	Main Steam - RCA		380	11	38	864			231	1,525	1,525	_	-	5,166		_		_	209,799	5,146	_
	Repairable Spare Snubbers	_	6	0	0	2	_	-	2	10	10	_	-	12	_	_	-	-	490	82	_
	Steam Exclusion	-	2		-	-	-	-	0	2		-	2	-	-	-	_	-	-	32	-
4a.1.5.28	Steam Exclusion - RCA	-	4	0	0	4	-	-	2	10	10	-	-	24	-	-	-	-	966	47	-
	Steam Generator Blowdown	-	378	21	27	319	215	-	202	1,162	1,162	-	-	1,906	631	-	-	-	118,130	5,179	-
	Steam Generators	-	5	-	-	-	-	-	1	6	-	-	6	-	-	-	-	-	-	75	-
	Turbine & Moisture Separators	-	377	-	-	-	-	-	57	434	-	-	434	-	-	-	-	-	-	5,472	-
	Turbine Oil Purification	-	53	-	-	-	-	-	8	61	-	-	61	-	-	-	-	-	-	757	-
	Water Treatment	-	453	-		-	-	-	68	521	-	-	521	-	-	-	-	-	-	6,677	-
	Water Treatment - RCA	-	20	0	1	19		-	1.001	49	49	-	- 0.00	115	- 001	-	-	-	4,652	252	-
4a.1.5	Totals	-	3,779	43	108	2,177	215	-	1,091	7,413	4,480	-	2,933	13,010	631	-	-	-	569,060	53,681	-
4a.1.6	Scaffolding in support of decommissioning	-	2,865	22	10	188	30	-	755	3,870	3,870	-	-	1,012	89	-	-	-	51,216	23,719	-
4a.1	Subtotal Period 4a Activity Costs	144	24,706	15,603	3,470	6,506	25,776	556	24,709	101,471	98,537	-	2,933	41,476	29,226	-	673	1,773	4,282,686	188,606	5,187
Pariod 4a	Additional Costs																				
4a.2.1 4a.2	Retired RPV Upper Internals Package Subtotal Period 4a Additional Costs	-	128 128	166 166	58 58	-	1,583 1,583		944 944	2,879 2,879	2,879 2,879	-	-	-	572 572	125 125		-	49,800 49,800	1,667 1,667	67 67
14.2	Dablotal I crioa la riadividual conto		120	100	00		1,000		011	2,0.0	2,010				V.2	120			10,000	1,001	•
Period 4a	Collateral Costs																				
4a.3.1	Process decommissioning water waste	3	-	4	8	-	17	-	7	39	39	-	-	-	40	-	-	-	2,408	8	-
4a.3.3	Small tool allowance	-	241	-	-	-		-	36	277	249	-	28	-		-	-	-	-		-
4a.3	Subtotal Period 4a Collateral Costs	3	241	4	8	-	17	-	43	316	288	-	28	-	40	-	-	-	2,408	8	-
	Period-Dependent Costs																				
4a.4.1	Decon supplies	100	-	-	-	-	-		25	125	125	-	-	-	-	-	-	-	-	-	=
4a.4.2	Insurance	-	-	-	-	-	-	643	64	708	708	-	-	-	-	-	-	-	-	-	-
4a.4.3	Property taxes	-	1,881	-	-	-	-	2,668	267 470	2,935 2,351	2,935 2,351	-	-	-	-	-	-	-	-	-	-
4a.4.4 4a.4.5	Health physics supplies Heavy equipment rental	-	3,325	-	-	-	-	-	499	3,824	3,824	-	-	-	-	-	-	-	-	-	-
4a.4.6	Disposal of DAW generated		5,525	70	29		293		85	477	477	_		_	3,554	_		_	71,089	116	_
4a.4.7	Plant energy budget	_	_	-	- 20	_	200	2,047	307	2,354	2,354	_	_	_	0,004	_	_	_	71,000	-	_
4a.4.8	NRC Fees	-	-	-	-	-	-	420	42	461	461	-	-	_	-	-	_	-	-	-	-
4a.4.9	Fixed Overhead	-	-	-	-	-	-	1,581	237	1,818	1,818	-	-	-	-	-	-	-	-	-	-
4a.4.10	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	565	85	649	649	-	-	-	-	-	-	-	-	-	-
4a.4.11	Railroad Track Maintenance	-	-	-	-	-	-	83	12	96	96	-	-	-	-	-	-	-	-	-	-
4a.4.12	Remedial Actions Surveys	-	-	-	-	-	-	1,489	223	1,712	1,712	-	-	-	-	-	-	-	-	-	-
4a.4.13	Security Staff Cost	-	-	-	-	-	-	4,486	673	5,159	5,159	-	-	-	-	-	-	-	-	-	67,000
4a.4.14	DOC Staff Cost	-	-	-	-	-	-	17,103	2,565	19,668	19,668	-	-	-	-	-	-	-	-	-	189,200 335,701
4a.4.15 4a.4	Utility Staff Cost Subtotal Period 4a Period-Dependent Costs	100	5,206	70	29	-	293	21,194 52,278	3,179 8,734	24,374 66,709	24,374 66,709	-	-	-	3,554	-	-	-	71,089	116	591,901
4a.0	TOTAL PERIOD 4a COST	246	30,281	15,844	3,564	6,506	27,669	52,834	34,430	171,375	168,414	-	2,961	41,476	33,393	125	673	1,773	4,405,984	190,397	597,154
PERIOD	4b - Site Decontamination																				
David 1 41	Direct December of the Activity																				
Period 4b 4b.1.1	Direct Decommissioning Activities Remove spent fuel racks	314	35	86	41	-	703	-	356	1,535	1,535	-	-	-	2,092	-	-	-	132,919	576	-
	of Plant Systems																				
		-	22	1	1	26		-	10	63	63	-	-	153	9	-	-	-	6,803	325	-
4b.1.2.2	Aux Bldg Normal Ventilation	-	62	2	6	116		-	37	237	237	-	-	692	39	-	-	-	30,595	906	-
4b.1.2.3	Aux Bldg Special Ventilation	-	12	0	1	12	2	-	5	32	32	-	-	70	6	-	-	-	3,234	176	-
4b.1.2.4		-	2	-	-	-	-	-	0	2	-	-	2	-	-	-	-	-	-	24	-
4b.1.2.5	Boron Recycle	-	3	0	0	0	3	-	2	9	9	-	-	3	9	-	-	-	700	45	-

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Table G-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(Th	ousands o	of 2020 Dollar	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B		GTCC Cu. Feet	Processed	Craft Manhours	Contractor Manhours
		Cost	Cost	Costs	Costs	Costs	Costs	Costs	contingency	Costs	Costs	Costs	Costs	cu. rect	cu. r cci	cu. rect	cu. r cci	Cu. Teet	**************************************	mamours	Mannours
Disposal of Plant Sys 4b.1.2.6 Chemical		_	858	62	57	394	677		458	2,507	2,507	_	_	2,356	1.977	_	_	_	223,753	11,575	_
4b.1.2.7 Cold Chen		-	1		-	-	-	-	0	1	-,501	-	1	2,000	-	-	-	-	-	9	-
	nt Cooling - RCA	-	647	25	88	2,007	-	-	479	3,246	3,246	-	-	11,996	-	-	-	-	487,169	8,583	-
	ent Cooling	-	35 302	- 6	20	459	-	-	5	40 934	934	-	40	2.743	-	-	-	-	111,390	502	-
4b.1.2.10 Containm	ent Cooling - RCA ent Hydrogen Control - RCA	-	302	0	20	459 24		-	148 13	934 74	934 74	-	-	2,743	-	-	-	-	5,742	3,949 494	-
4b.1.2.12 Containm		-	194	3	11	243	_	-	87	538	538	-	-	1,453	-	-	-	-	59,019	2,617	-
4b.1.2.13 Containm		-	211	23	49			-	242	1,558	1,558	-	-	4,721	722	-	-	-	237,643	3,016	-
4b.1.2.14 Control/Re		-	28 159	1	2	44	7	-	16	98 183	98	-	-	260	20	-	-	-	11,878	406	-
4b.1.2.15 Cooling W 4b.1.2.16 Cooling W		-	476	17	62	1,412	_	-	24 342	2,310	2,310	-	183	8,442	-	-	-	-	342,822	2,344 6,311	-
4b.1.2.17 Cranes/Ho		-	3	0		17		-	4	25	25	-	-	103		-	-	-	4,184	48	-
4b.1.2.18 D3 Emerg		-	10		-	-	-	-	2	12	-	-	12	-	-	-	-	-	-	141	-
4b.1.2.19 D4 Emerg		-	10 0	-	-	-	-	-	2	12	-	-	12 0	-	-	-	-	-	-	141	-
4b.1.2.20 D5 Emerg 4b.1.2.21 Electrical		-	1,714	_	-	_	_	-	257	0 1,972	-	-	1,972	-	-	-	-	-	-	$\frac{5}{24,276}$	-
4b.1.2.22 Electrical		-	430	5	16	334	25	-	167	978	978	-	- 1,572	1,997	75	-	-	-	85,887	5,813	-
	- Contaminated - Fuel Pool	-	184	2	7	145		-	72	421	421	-	-	864	33	-	-	-	37,167	2,488	-
4b.1.2.24 Electrical		•	2,955	38	138	3,138		-	1,234	7,503	7,503	-	-	18,753	-	-	-	-	761,569	38,423	-
4b.1.2.25 Electrical 4b.1.2.26 Filter Rm	- Decontaminated - Fuel Pool	-	1,269 4	17 0	59 0	1,350 4	- 0	-	530 2	3,225 10	3,225 10	-	-	8,069 24	- 1	-	-	-	327,668 1,017	16,495 61	-
4b.1.2.27 Fire Prote			204	-	- 0	-	-		31	235	- 10	-	235	-		-	-	-	1,017	3,009	-
4b.1.2.28 Fire Prote	ection & Detection - RCA	-	246	4	13	306	-	-	110	679	679	-	-	1,828	-	-	-	-	74,245	3,134	-
	ection & Detection - RCA Fuel P	-	37	1	2	48	-	-	17	105	105	-	-	286	-	-	-	-	11,622	476	-
4b.1.2.30 Fuel Hand	dling	-	66 1	1	2	34	17	-	26	146	146	-	-	200	49	-	-	-	11,273	983 9	-
4b.1.2.31 Fuel Oil 4b.1.2.32 HVAC - C	lean	-	151	-	-	-	-		23	174	-	-	174	-	-	-	-	-	-	2,373	-
4b.1.2.33 HVAC - C		-	1,112	29	87	1,798	136	-	598	3,759	3,759	-	-	10,745	405	-	-	-	462,103	14,282	-
	ontaminated - Fuel Pool	-	499	13	39	808	61	-	268	1,689	1,689	-	-	4,828	182	-	-	-	207,612	6,417	-
4b.1.2.35 Heating	D.C.A.	-	322		-	-	-	-	48	370	-	-	370	-	-	-	-	-	-	4,804	-
4b.1.2.36 Heating -	RCA & Sample Rm Ventilation	•	337 17	4	14	319 18	- 1	-	135 8	809 46	809 46	-	-	1,907 107	- 4	-	-	-	77,458 4,622	4,086 255	-
4b.1.2.38 Incore Ins		-	27	1	2	10		-	13	73	73	-	-	60	58	-	-	-	6,143	412	-
4b.1.2.39 Misc Drai		-	213		12			-	104	563	563	-	-	458		-	-	-	46,079	2,841	-
4b.1.2.40 Misc Lab		-	118	8	8	62	84	-	62	342	342	-	-	370	244	-	-	-	30,899	1,537	-
4b.1.2.41 Miscellane 4b.1.2.42 Miscellane		-	72 134	1	4	100	-	-	11 49	83 289	289	-	83	600	-	-	-	-	24,378	1,073 1,636	-
4b.1.2.42 Miscelland 4b.1.2.43 Radiation		-	154		4	100	-	-	49	209	209	-	9	-	-	-	-	-	24,516	1,050	-
4b.1.2.44 Radiation		-	65	1	2	53		-	25	145	145	-	-	316	-	-	-	-	12,826	782	-
4b.1.2.45 Reactor C		-	216	20	16			-	126	666	666	-	-	229	730	-	-	-	56,440	2,891	-
4b.1.2.46 Reactor H		-	116	11	7	9	108	-	60	311 47	311	-	47	54		-	-	-	22,678	1,499 583	-
4b.1.2.47 Reactor M 4b.1.2.48 Reactor M		-	41 4	- 0	- 0	- 5	-	-	2	47 11	11	-	47	28	-	-	-	-	1,148	983 47	-
4b.1.2.49 Reactor V		-	16		0	4	5	-	6	32	32	-	-	22	14	-	-	-	1,816	225	-
4b.1.2.50 Residual I		-	354	84	86	477	1,102	-	457	2,562	2,562	-	-	2,853	3,244	-	-	-	324,232	5,039	-
4b.1.2.51 Safeguard		-	5	- 0	-	- ,	-	-	1 2	6	- 11	-	6	- 00	-	-	-	-	1.045	75	-
4b.1.2.52 Safeguard 4b.1.2.53 Safety Inj	ls Chilled Water - RCA ection	-	5 793	0 42	0 72		395	-	479	11 2.898	11 2.898	-	-	26 6.676	1.161	-	-	-	1,045 345,708	51 11,029	-
4b.1.2.54 Sampling		-	48	3	2		32	-	22	113	113	=	-	37		-	-	-	7,628	645	-
4b.1.2.55 Service Bl	ldg & New Cmptr Vent	=	0	-	-	-	-	-	0	0	-	-	0	-	-	-	-	-	-	6	-
4b.1.2.56 Shield Bld		-	108	13	25			-	124	771	771	-	-	2,028	484	-	-	-	113,139	1,555	-
4b.1.2.57 Spent Fue	el Pool Cooling el Pool Normal Ventilation	-	33 24	3	2 2	6 44	37 4	-	19 14	101 90	101 90	=	<del>-</del>	39 265	107 12	-	-	-	8,481 11,505	427 352	-
4b.1.2.59 Station &		-	161	-	- 4	- 44	4	-	24	185	- 90	-	185	- 200	- 12	-		-	- 11,505	2,424	-
4b.1.2.60 Station &	Instrument Air - RCA	-	299	3	12	272	-	-	118	704	704	-	-	1,625	-	-	-	-	65,986	3,638	-
4b.1.2.61 Turbine B		-	30				-	-	5	35	-	-	35	-	-	-	-	-		462	-
4b.1.2.62 Turbine B 4b.1.2.63 Turbine B	Bldg Traps & Drains - RCA	-	30 46	0	1	30	-	-	12 7	73 53	73	-	- 53	180	-	-	-	-	7,321	344 655	-
4b.1.2.64 Unit Coole		-	46 23	-	-	-	-	-	3	26	-	-	26	-	-	-		-	-	332	-
4b.1.2.65 Unit Coole		-	56	0	2	39	-	-	20	117	117	-	-	232	-	-	-	-	9,413	690	-
4b.1.2.66 Waste Gas		-	438	43	45	410		-	298	1,699	1,699	-	-	2,453		-	-	-	187,339	5,879	-
4b.1.2.67 Waste Liq		ē	1,642					-	837	4,541	4,541	=	-	3,655	3,594	-	-	-	381,754	22,011	=
4b.1.2.68 Waste Sol 4b.1.2 Totals	ia Disposai	-	132 17,877	12 633	11 1,092	65 17,625	134 5,377	-	79 8,385	433 50,989	433 47,545	-	3,444	389 105,339	393 15,761	-	-	-	41,177 5,294,310	1,781 240,033	-
		-	ŕ		ŕ	,	,	-	,	,		-	0,444	ŕ	,	-	-	-	, ,	ŕ	-
4b.1.3 Scaffoldin	g in support of decommissioning	-	4,297	33	15	281	45	-	1,133	5,804	5,804	-	-	1,518	134	-	-	-	76,824	35,578	-

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Table G-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(The	ousands o	of 2020 Dollar	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Rurial	Volumes		Burial/		Utility and
Activity		Decon	Removal	Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Decontar	nination of Site Buildings																				
	Reactor	1,096	2,528	240	1,236	373	7,080	-	3,215	15,768	15,768	-	-	2,230	67,331	-	-	-	3,286,725	45,740	-
4b.1.4.2	Auxiliary	1,168	375	23	117	177	648	-	886	3,395	3,395	-	-	1,060	6,118	-	-	-	332,495	21,235	-
4b.1.4.3	Backwash Waste Receiving Tank	-	25	3	17	-	97	-	33	175	175	-	-	-	929	-	-	-	43,896	266	-
4b.1.4.4 4b.1.4.5	Drum Transfer & Truck Loading Enclosure LLRW Storage Enclosure	16 111	8 48	3	3 17	3 6	14 96		15 95	59 377	59 377	-	-	19 38	135 920	-	-	-	7,118 44,971	328 2,151	-
4b.1.4.6	Radwaste	50	21	1	8	7	43		43	174	174	-	-	42	412		-	-	21,136	964	-
4b.1.4.7	Resin Disposal	15	11	1	3	14	14		16	72	72	-	_	83	124		-	-	9,271	340	-
4b.1.4.8	Fuel Handling of Aux Building	924	1,015	13	45	404	195	-	833	3,430	3,430	-	-	2,417	1,652	-	-	-	177,755	27,145	-
4b.1.4	Totals	3,380	4,031	285	1,445	985	8,187	-	5,137	23,450	23,450	-	-	5,889	77,619	-	-	-	3,923,368	98,170	-
4b.1.5	Prepare/submit License Termination Plan	-	-	-		-	-	225	34	259	259	-	-	-	-	-	-	-	-	-	1,751
4b.1.6	Receive NRC approval of termination plan									a											, , ,
4b.1	Subtotal Period 4b Activity Costs	3,693	26,240	1,036	2,594	18,892	14,312	225	15,045	82,037	78,593	-	3,444	112,746	95,607	-	-	-	9,427,420	374,358	1,751
Period 4h	Additional Costs																				
4b.2.1	License Termination Survey Planning	_		-	-	_	-	1,037	311	1,348	1,348	_	-	-	-	-	-	_	_	-	6,240
4b.2.2	Excavation of Underground Services	-	1,175	-	-	-	-	225	328	1,728	1,728	-	-	-	-	-	-	-	-	7,411	-
4b.2.3	Operational Equipment	-	-	11	36	606	-	-	97	751	751	-	-	5,880	-	-	-	-	147,000	16	-
4b.2.4	License Termination ISFSI	-	24	81	435	-	2,532		1,112	5,560	5,560	-	-	-	9,355	-	-	-	1,123,457	3,762	5,460
4b.2	Subtotal Period 4b Additional Costs	-	1,199	93	471	606	2,532	2,638	1,848	9,387	9,387	-	-	5,880	9,355	-	-	-	1,270,457	11,189	11,700
Period 4b	Collateral Costs																				
4b.3.1	Process decommissioning water waste	7	-	12	21	-	48	-	20	107	107	-	-	-	109	-	-	-	6,547	21	-
4b.3.3	Small tool allowance	-	443	-	-	-	-	-	66	509	509	-	-	-	-	-	-	-	-		-
4b.3.4 4b.3	Decommissioning Equipment Disposition Subtotal Period 4b Collateral Costs	7	443	130 142	67 88	1,112 1,112	178 225		234 320	1,722 2,338	1,722 2,338	-	-	6,000 6,000	529 638	-	-	-	303,608 310,155	147 168	-
						-,				_,	_,			-,					,		
	Period-Dependent Costs								0.00												
4b.4.1 4b.4.2	Decon supplies Insurance	1,449	-	-	-	-	-	862	362 86	1,811 949	1,811 949	=	-	-	-	-	-	-	-	-	=
4b.4.2 4b.4.3	Property taxes	-		-	-	-	-	3,404	340	3,745	3,745	-	-	-	-	-	-	-	-	-	-
4b.4.4	Health physics supplies	-	3,232	-	-	-	-	-	808	4,041	4,041	-	_	-	_		-	-	_	-	-
4b.4.5	Heavy equipment rental	-	4,577	-	-	-	-	-	687	5,263	5,263	-	-	-	-	-	-	-	-	-	-
4b.4.6	Disposal of DAW generated	-	-	116	47	-	482	-	139	784	784	-	-	-	5,849	-	-	-	116,984	191	-
4b.4.7	Plant energy budget	-	-	-	-	-	-	2,165	325 56	2,490	2,490	-	-	-	-	-	-	-	-	-	-
4b.4.8 4b.4.9	NRC Fees Fixed Overhead	-	-	-	-	-	-	562 2,118	56 318	618 2,436	618 2,436	-	-	-	-	-	-	-	-	-	-
4b.4.10	Liquid Radwaste Processing Equipment/Services		-	-	-	-	-	757	113	870	2,430 870	-	-	-	-	-	-	-	-	-	-
4b.4.11	Railroad Track Maintenance	-	-	-	-	-	-	111	17	128	128	-	-	-	-	-	-	-	-	-	=
4b.4.12	Remedial Actions Surveys	-	-	-	-	-	-	1,995	299	2,294	2,294	-	-	-	-	-	-	-	-	-	-
4b.4.13	Security Staff Cost	-	-	-	-	-	-	7,811	1,172	8,983	8,983	-	-	-	-	-	-	-	-	-	115,753
4b.4.14	DOC Staff Cost	-	-	-	-	-	-	22,641	3,396	26,038	26,038	-	-	-	-	-	-	-	-	-	248,175
4b.4.15 4b.4	Utility Staff Cost Subtotal Period 4b Period-Dependent Costs	1,449	7,809	116	47	-	482	27,954 70,383	4,193 12,312	32,147 92,598	32,147 92,598	-	-	-	5,849	-	-	-	116,984	191	437,085 801,014
4b.0	TOTAL PERIOD 4b COST	5,149	35,691	1,386	3,201	20,610	17,552	73,246	29,526	186,361	182,916	-	3,444	124,626	111,449	-	-	-	11,125,020	385,906	814,465
PERIOD	4f - License Termination	, -	•	,	* *	,	,	,	, .		, .		,	,						, , , ,	•
Davied 44	Direct Decommissioning Activities																				
4f.1.1	ORISE confirmatory survey	_	_	-	-	-	_	166	50	216	216	-	-	_	-	_	_	-	-	_	-
4f.1.2	Terminate license							100	00	a	210										
4f.1	Subtotal Period 4f Activity Costs	-	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-
Period 4f	Additional Costs																				
4f.2.1	License Termination Survey	-	-	-	-	-	-	7,041	2,112	9,154	9,154	-	-	-	-	-	-	-	-	100,895	3,120
4f.2	Subtotal Period 4f Additional Costs	-	-	-	-	-	-	7,041	2,112	9,154	9,154	-	-	-	-	-	-	-	-	100,895	3,120
Dowied 44	Collateral Costs																				
4f.3.1	DOC staff relocation expenses	-	_	_	_	-	_	1,264	190	1,454	1,454	_	-	_	_	_	_	-	-	_	-
4f.3	Subtotal Period 4f Collateral Costs	-	-	-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-

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Table G-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035
(Thousands of 2020 Dollars)

							(111)	Jusanus o	1 2020 Donar	5)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial/		Utility and
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
			Cost	00505	00505	COSOS	00000	COStS	contingency	COSES	00000	0000	00000	currect	currect	currect	04.1000	04,1000	11 01, 2300	mamours	in the state of th
Period 4f Period-1 4f.4.2 Proper	Dependent Costs rty taxes						_	1,335	133	1,468	1,468										
	h physics supplies	-	709	-	-	-		-	177	886	886	- -	-	-	-	-	-	-	-	-	-
	sal of DAW generated	_	-	7			27	-	8	45	45	-	-	-	332	-	-	_	6,649	11	-
	energy budget	-	-	- 1	-	-	-	243	36	279	279	-	-	-	-	-	-	-	-	-	-
4f.4.6 NRC I		-	-	-	-	-	-	263	26	290	290	-	-	-	-	-	-	-	-	-	-
	Overhead	-	-	-	-	-	-	890	133	1,023	1,023	-	-	-	-	-	-	-	-	-	-
	ad Track Maintenance	-	-	-	-	-	-	47	7	54	54	-	-	-	-	-	-	-	-	-	
	ity Staff Cost	-	-	-	-	-	-	805	121	926	926	-	-	-	-	-	-	-	-	-	11,668
	Staff Cost y Staff Cost	-	-	-	-	-	-	4,238 3,772	636 566	4,874 4,338	4,874 4,338	-	-	-	-	-	-	-	-	-	46,285 56,395
	tal Period 4f Period-Dependent Costs	-	709	7			27	11,593	1,844	14,182	14,182	-	-	-	332	-	-	-	6,649	11	
4f.0 TOTA	L PERIOD 4f COST		709	7	9		27	20.064	4,196	25,006	25.006			_	332				6,649	100,906	117,466
		-			~			.,	,	-,	-,								,	ŕ	,
PERIOD 4 TOT	ALS	5,395	66,681	17,237	6,768	3 27,115	45,248	146,144	68,152	382,741	376,336	-	6,405	166,102	145,174	125	673	1,773	15,537,650	677,209	1,529,086
PERIOD 5b - Si	te Restoration																				
Period 5b Direct	Decommissioning Activities																				
	maining Site Buildings																				
5b.1.1.1 Reacto		-	4,645	-	-	-	-	-	697	5,342	-	-	5,342	-	-	-	-	-	-	44,679	
5b.1.1.2 Auxili		-	1,993	-	-	-	-	-	299	2,291	-	-	2,291	-	-	-	-	-	-	11,902	
	ensate Storage Tank Foundation	-	7	-	-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	33	
	ruction Warehouse & Fab Shop I Emergency Generator	-	130 14	-	-	-	-	-	19	149 16	-	-	149 16	-	-	-	-	-	-	1,405 84	
	Transfer & Truck Loading Enclosure	-	20	-	-	-	-	-	3	24	-	-	24	-	-	-	-	-	-	221	
	ogen House	-	6	-		-	-		1	7	-	-	7	-	-	-			-	47	
	V Storage Enclosure	_	128	_	_	_	_	_	19	147	-	_	147	_	_	_	_	_	_	853	
	Structures 2017	_	2,617	_	_	_	-	_	393	3.009	-	_	3,009	_	-	-	_	-	_	22,582	
5b.1.1.10 Radwa		-	176	-	-	-	-	_	26	202	-	-	202	-	-	-	_	-	-	1,400	
5b.1.1.11 Resin		-	14	-	-	-	-	-	2	16	-	-	16	-	-	-	-	-	-	120	
5b.1.1.12 Struct	tures below 3' below grade	-	1,785	-	-	-	-	-	268	2,052	-	-	2,052	-	-	-	-	-	-	9,238	-
5b.1.1.13 Sulfur	ric Acid Tank Enclosure	-	3	-	-	-	-	-	0	4	-	-	4	-	-	-	-	-	-	35	-
5b.1.1.14 Turbin		-	2,140	-	-	-	-	-	321	2,461	-	-	2,461	-	-	-	-	-	-	21,997	-
5b.1.1.15 Turbin		-	365	-	-	-	-	-	55	420	-	-	420	-	-	-	-	-	-	1,857	
5b.1.1.16 Wareh		-	24	-	-	-	-	-	4	27	-	-	27	-	-	-	-	-	-	213	
	Neutralizing Tank House	-	7 9	-	-	-	-	-	1	8	-	-	8 10	-	-	-	-	-	-	56	
5b.1.1.18 Waste 5b.1.1.19 Water		-	324	-	-	-	-	-	49	10 373	-	-	373	-	-	-	-	-	-	70 2,690	
	Handling of Aux Building	-	1,095	-	-	-	-	-	164	1,259	-	-	1,259	-	-	-	-	-	-	8,240	
5b.1.1 Totals		-	15,501	-	-	-	-	-	2,325	17,826	-	-	17,826	-	-	-	-	-	-	127,723	
30.1.1			10,001						2,020	11,020			11,020							121,120	
Site Closeout Act																					
	ve Rubble	-	1,517	-	-	-	-	-	228	1,745	-	-	1,745	-	-	-	-	-	-	7,408	
	& landscape site	-	448	-	-	-	-	-	67	515		-	515	-	-	-	-	-	-	921	
	report to NRC	-	-	-	-	-	-	86	13	99	99	-	-	-	-	-	-	-	-	-	667
5b.1 Subtot	tal Period 5b Activity Costs	-	17,466	-	-	-	-	86	2,633	20,185	99	-	20,086	-	-	-	-	-	-	136,051	667
Period 5b Additio 5b.2.1 Clean	onal Costs Concrete Disposal		4,912					10	738	5,660			5,660							18,372	_
	Concrete Disposal e Structure Cofferdam	-	4,912	-	-	-	-	10	738 66	5,660	-	-	5,660 508	-	-	-	-	-	-	3,552	
	ruction Debris	-	442	-	-	-	-	2,150	323	2,473	-	-	2,473	-	-	-	-	-	-	3,332	-
5b.2.4 Backfi		<del>-</del>	9,257	-	-	-	-	2,150	1,388	10,645	-	-	10.645	-	-	-	-	-	-	9,327	-
	lition and Site Restoration of ISFSI	-	515	-	-	-	-	68	87	670	-	- -	670	-	-	-	-	-	-	2,219	
	tal Period 5b Additional Costs	-	15,125	-	-	_	_	2,227	2,603	19,955	_	-	19,955	-	-	-	-	-	-	33,470	
			-, =-					,	,	-,			-,							,	
Period 5b Collate 5b.3.1 Small	eral Costs tool allowance		216						32	249			249							_	
	tal Period 5b Collateral Costs	-	216	-	-	-	-	-	32	249	-	-	249	-	-	-	-	•	-	-	-
55.5 Bubtot	vai i ciiou on Collatelai COSIS	-	210	-	-	-	-	-	32	249	-	-	249		-	-	-	-	-	-	-

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

Table G-2 Prairie Island SAFSTOR Unit 2 SAFSTOR Decommissioning Cost Estimate with DOE Pickup of Industry Spent Fuel Starting in 2035 (Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Volumes		Burial /		Utility and
Activity		Decon	Removal	Packaging	Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Period 5h	Period-Dependent Costs																				
5b.4.2	Property taxes	-	-	-	-	_	-	3,481	348	3,829	-	-	3.829	-	-	-	-	-	-	-	_
	Heavy equipment rental	_	7,144	-	-	_	-	-	1,072	8,215	-	-	8,215	-	-	_	-	-	-	-	_
5b.4.4	Plant energy budget	-	-	-	-	-	-	344	52	395	_	-	395	-	-	-	-	-	-	-	-
5b.4.5	Fixed Overhead	-	-	-	-	-	-	1,024	154	1,178	-	-	1,178	-	-	-	-	-	-	-	-
5b.4.6	Railroad Track Maintenance	-	-	-	-	-	-	133	20	152	-	-	152	-	-	-	-	-	-	-	-
5b.4.7	Security Staff Cost	-	-	-	-	-	-	2,055	308	2,363	-	-	2,363	-	-	-	-	-	-	-	29,221
5b.4.8	DOC Staff Cost	-	-	-	-	-	-	10,921	1,638	12,559	-	-	12,559	-	-	-	-	-	-	-	116,885
5b.4.9	Utility Staff Cost	-	-	-	-	-	-	3,831	575	4,406	-	-	4,406	-	-	-	-	-	-	-	57,340
5b.4	Subtotal Period 5b Period-Dependent Costs	-	7,144	-	-	-	-	21,789	4,166	33,099	-	-	33,099	-	-	-	-	-	-	-	203,445
5b.0	TOTAL PERIOD 5b COST	-	39,951	-	-	-	-	24,102	9,434	73,487	99	-	73,389	-	-	-	-	-	-	169,521	204,192
PERIOD	5 TOTALS	-	39,951	-	=	-	-	24,102	9,434	73,487	99	-	73,389	-	-	-	-	-	-	169,521	204,192
TOTAL C	OST TO DECOMMISSION	12,732	121,667	17,878	7,311	27,293	47,786	890,729	174,619	1,300,016	944,187	275,338	80,490	172,234	166,965	125	673	1,773	16,284,450	947,658	5,651,326

TOTAL COST TO DECOMMISSION WITH 15.52% CONTINGENCY:	\$1,300,016	thousands of 2020 dollars
TOTAL NRC LICENSE TERMINATION COST IS 72.63% OR:	\$944,187	thousands of 2020 dollars
SPENT FUEL MANAGEMENT COST IS 21.18% OR:	\$275,338	thousands of 2020 dollars
NON-NUCLEAR DEMOLITION COST IS 6.19% OR:	\$80,490	thousands of 2020 dollars
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	167,763	Cubic Feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	1,773	Cubic Feet
TOTAL SCRAP METAL REMOVED:	42,406	Tons
TOTAL CRAFT LABOR REQUIREMENTS:	947,658	Man-hours

End Notes:  $n/a \cdot indicates that this activity not charged as decommissioning expense a \cdot indicates that this activity performed by decommissioning staff 0 \cdot indicates that this value is less than 0.5 but is non-zero A cell containing " <math>\cdot$  " indicates a zero value

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis Document X01-1775-001, Rev. 0 Appendix H, Page 1 of 22

### **APPENDIX H**

### **DETAILED COST ANALYSIS**

### SCENARIO 6: SAFSTOR with 60 Year DFS

	<u>Page</u>
Prairie Island Nuclear Generating Plant, Unit 1	H-2
Prairie Island Nuclear Generating Plant, Unit 2	H-12

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Table H-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

Part								(Tł	ousands	of 2020 Dollar	rs)											
Part							Off-Site	LLRW NRC Spent Fuel Site Processed Rurial Vo						rial Volumes Burial / Utility								
Part	Activi	ty	Decon	Removal	Packaging	Transport			Other	Total	Total					Class A			GTCC		Craft	
### APPER	Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Wt., Lbs.	Manhours	Manhours				
Alt	PERIO	D 1a - Shutdown through Transition																				
1.   1.   1.   1.   1.   1.   1.   1.	Period 1	la Direct Decommissioning Activities																				
1.1   1.1	1a.1.1	SAFSTOR site characterization survey	-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	-
Browner field & Score methanismal   Score   Score methanismal   Score   Score methanismal   Score			-	-	-	-	-	-	167	25		192	-	-	-	-	-	-	-	-	-	1,300
Number of Personner Debenders																						
Lit																						
1.1   1.1   1.2		Deactivate plant systems & process waste																				
1.1.1			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	
Lal.			-	-	-	-	-	-	107	20		132	-	-	-	-	-	-	-	-	-	1,300
A.1   13			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	
1.11   1.12   1.12   1.13   1.14			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	
1.1.1.1   Perform Silk and EA			-	-	-	-	-						-	-	-	-	-		-	-	-	
Activity Specifications			-	-	-	-	-	-			458		-	-	-	-	-	-	-	-	-	
1.1.1.1   Penare plant and findities for SANTONA	1a.1.15	Perform Site-Specific Cost Study	-	-	-	-	-	-	643	96	739	739	-	-	-	-	-	-	-	-	-	5,000
1.1.1.1   Penare plant and findities for SANTONA	Activity	Specifications																				
1.1   1.2   1.3   1.5			-	-	-	-	-	-	632	95	727	727	-	-	-	-	-	-	-	-	-	4,920
1.1   1.4			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	
1.1   1.5   Telly and site downameny   .			-	•	-	-	-	-					-	-	-	-	-	-	-	-	-	
Postable Work Procedures			-	_	-	_	-						-	_	_		-	-	-	_	-	
In   1.7.1.7   Plant systems	1a.1.16	Total	-	-	-	-	-	-	2,083	312	2,395	2,395	-	-	-	-	-	-	-	-	-	16,207
1.1.1.7.1   Plant systems	Dotnilo	d Work Procedures																				
1.1.17   Facility closeout & dormancy   1.1.18   1.1.19			-	-	_	_	-	_	152	23	175	175	_	_	_	_	-	_	_	_	_	1.183
1.1.18   Procure vacuum drying system			-	-	-	-	-	-			177		-	-	-	-	-	-	-	-	-	
In   1.1	1a.1.17	Total	-	-	-	-	-	-	306	46	352	352	-	-	-	-	-	-	-	-	-	2,383
1.1.1   1.1.2   1.1.	1a.1.18	Procure vacuum drying system	-		_	-	-		13	2	15	15	-	-	_		-	-	-	_	-	100
Al   12   12   12   13   13   12   13   13	1a.1.19	Drain/de-energize non-cont. systems									a											
Act   Subtat   Period   La Cultiver   Costs   Subtat   Period   Collateral Costs   Subtat   Period   Collateral Costs   Subtat   Period   Collateral Costs   Subtat   Period   Collateral Costs   Subtat   Period   Subtat   Subtat   Period   Subtat   Subtat   Period   Subtat   Subtat   Subtat   Period   Subtat   Subt											a a											
1a.3.1   Prairie Island Indian Community Payments			-	-	-	-	-	-	5,027	816	5,844	5,844	-	-	-	-	-	-	-	-	-	35,890
1a.3.1   Prairie Island Indian Community Payments	Dania d	1. Cellatoral Costs																				
Period   P			-	_	_	_	-	_	1.249	_	1.249	_	1.249	_	_	_	-	_	_	_	-	-
1a.4.1       Insurance			-	-	-	-	-	-		-				-	-	-	-	-	-	-	-	-
1a.4.1       Insurance	Pariod 1	1 a Period-Dependent Costs																				
1a.4.2       Property taxes       -       -       3,623       362       3,985       3,985       -			-	-	_	-	-		1,660	166	1,826	1,826	-	_	_		-	-	-	_	-	-
1a.4.4     Heavy equipment rental     753     113     866     866	1a.4.2	Property taxes	-	-	-	-	-	-	3,623		3,985	3,985	-	-	-	-	-	-	-	-	-	-
1a.4.5     Disposal of DAW generated     12     5     50     -     14     82     82     -     610     12,190     20     -       1a.4.6     Plant energy budget     -     -     1,621     243     1,864     1,864     -     -     -     -     -       1a.4.7     NRC Fees     -     -     -     89     98     98     98     -     -     -     -     -     -     -       1a.4.8     Emergency Planning Fees     -     -     2,174     217     2,392     -     2,392     -     -     -     -     -       1a.4.9     Fixed Overhead     -     -     1,440     216     1,656     1,656     -     -     -     -     -     -       1a.4.10     Spent Fuel Pool O&M     -     -     422     63     486     -     486     -     -     -     -     -     -       1a.4.11     ISFSI Operating Costs     -     -     56     8     64     -     64     -			-			-	-	-					-	-	-	-	-	-	-	-	-	-
1a.4.6       Plant energy budget       -       -       1,621       243       1,864       1,864       -			-	199		- 5		50					-	-	-	610	-		-	12.190	20	-
1a.4.8     Emergency Planning Fees     2,174     217     2,392		Plant energy budget	-	-	-	-	-	-	1,621	243	1,864	1,864	-	-	-	-	-	-	-	-	-	-
1a.4.9     Fixed Overhead       1a.4.10     Spent Fuel Pool O&M       1a.4.11     ISFSI Operating Costs			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	-
1a.4.10     Spent Fuel Pool O&M       1a.4.11     ISFSI Operating Costs         -     -    <			-	-	-	-	-	-						-	-	-	-	-	-	-	-	-
1a.4.11 ISFSI Operating Costs			-	-		-	-	-						-	-	-	-	-	-	-	-	-
	1a.4.11	ISFSI Operating Costs	-	-	-	-	-	-	56	8	64			-	-	-	-	-	-	-	-	-
1a.4.12     Railroad Track Maintenance			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	100 700
1a.4.13     Security Staff Cost			-	-	-		-	-					-	-	-	-	-	-	-	-	-	
1a.4 Subtotal Period la Period-Dependent Costs - 1,367 12 5 - 50 47,211 6,945 55,590 52,648 2,942 610 12,190 20 544,960			-	1,367	12	5	-	50		,				-	-	610	-	-	-	12,190	20	
1a.0 TOTAL PERIOD 1a COST - 1,367 12 5 - 50 53,487 7,761 62,683 58,492 4,191 610 12,190 20 580,850	1a.0	TOTAL PERIOD 1a COST	-	1,367	12	5	, -	50	53,487	7,761	62,683	58,492	4,191	-	-	610	-	-	-	12,190	20	580,850

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Table H-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(11	ousunus	or 2020 Dona	13,											
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
	D 1b - SAFSTOR Limited DECON Activities								gy										,		
Period 1	b Direct Decommissioning Activities																				
D	mination of Site Buildings																				
1b.1.1.1		1,199	_	_	_	_		_	599	1,798	1,798	_	_	_	_	_	_	_		17,003	_
1b.1.1	Totals	1,199	-	-	-	-	-	-	599	1,798	1,798	-	_	_	-	-	-	-	-	17,003	-
1b.1	Subtotal Period 1b Activity Costs	1,199	-	-	-	-	-	-	599	1,798	1,798	-	-	-	-	-	-	-	-	17,003	-
Dowind 1	b Additional Costs																				
1b.2.1	Spent Fuel Pool Isolation	-	-	-	-	-		12,675	1,901	14,576	14,576	-	_	_	-	_		-	-	-	-
1b.2	Subtotal Period 1b Additional Costs	-	-	-	-	-	-	12,675	1,901	14,576	14,576	-	-	-	-	-	-	-	-	-	-
	b Collateral Costs																				
1b.3.1	Decon equipment	1,055	-			-		-	158	1,213	1,213	-	-	-	-	-	-	-		-	-
1b.3.2 1b.3.4	Process decommissioning water waste Small tool allowance	79	20	52	94	-	212	-	112 3	549 23	549 23	-	-	-	487	-	-	-	29,193	95	-
1b.3.4 1b.3.5	Prairie Island Indian Community Payments	-	- 20	-	-	-	-	311	-	311	-	311	-	-	-	-	-	-	-	-	-
1b.3	Subtotal Period 1b Collateral Costs	1,134	20	52	94		212		273	2,097	1,785	311	-	-	487	-	-	-	29,193	95	-
Period 1	b Period-Dependent Costs																				
1b.4.1	Decon supplies	449	-	-	-	-	-	-	112	561	561	-	-	-	-	-	-	-	-	-	-
1b.4.2	Insurance	-	-	-	-	-	-	414	41	455	455	-	-	-	-	-	-	-	-	-	-
1b.4.3 1b.4.4	Property taxes Health physics supplies	-	250	-	-	-	-	903	90 63	994 313	994 313	-	-	-	-	-	-	-	-	-	-
1b.4.4 1b.4.5	Heavy equipment rental	-	250 188		-	-	-	-	28	216	216	-	-	-	-	-		-	-	-	-
1b.4.6	Disposal of DAW generated	-	-	6	3	-	27		8	43	43	-	-	-	324	-	-	-	6,486	11	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	404	61	465	465	-	-	-	-	-	-	-	· -	-	-
1b.4.8	NRC Fees	-	-	-	-	-	-	161 542	16	177 596	177	- 596	-	-	-	-	-	-	-	-	-
1b.4.9 1b.4.10	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	_	359	54 54	413	413	996	-	-	_	-	-	-	-	-	-
1b.4.11	Spent Fuel Pool O&M	-	-	_	_	_	_	105	16	121	-	121	-	_	_	-	-	-	-	-	-
1b.4.12	ISFSI Operating Costs	-	-	-	-	-	-	14	2	16	-	16	-	-	-	-	-	-	-	-	-
1b.4.13	Railroad Track Maintenance	-	-	-	-	-	-	16	2	18	18	=	-	-	-	-	-	-	-	-	-
1b.4.14 1b.4.15	Security Staff Cost Utility Staff Cost	-	-	-	-	-	-	2,076 6,714	311 1,007	2,388 7,722	2,388 7,722	-	-	-	-	-	-	-	-	-	30,596 105,271
1b.4	Subtotal Period 1b Period-Dependent Costs	449	438	6	3	-	27		1,866	14,498	13,764	733	-	-	324	-	-	-	6,486	11	135,867
1b.0	TOTAL PERIOD 1b COST	2,781	458	59	97	-	239	24,696	4,640	32,969	31,924	1,045	-	-	811	-	-	-	35,678	17,108	135,867
PERIO	D 1c - Preparations for SAFSTOR Dormancy																				
Period 1	c Direct Decommissioning Activities																				
1c.1.1	Prepare support equipment for storage	-	527	-	-	_	-	-	79	606	606	-	-	-	-	-	-	-	-	3,000	-
1c.1.2	Install containment pressure equal. lines	-	54	-	-	-	-	-	8	62	62	-	-	-	-	-	-	-	-	700	-
1c.1.3 1c.1.4	Interim survey prior to dormancy Secure building accesses	-	-	-	-	-	-	733	220	953	953	-	-	-	-	-	-	-	-	12,801	-
1c.1.4 1c.1.5	Prepare & submit interim report	-	-	-	-	-	-	75	11	a 86	86	-	-	-	-	-	-	-	-	-	583
1c.1	Subtotal Period 1c Activity Costs	-	581	-	-	-	-	808	318	1,707	1,707	-	-	-	-	-	-	-	-	16,501	583
Period 1	c Collateral Costs																				
1c.3.1	Process decommissioning water waste	91	-	60	109	-	245	-	129	634	634	-	-	-	561	-	-	-	33,685	109	-
1c.3.3	Small tool allowance	-	5	-	-	-	-	-	1	6	6		-	-	-	-	-	-	-	-	-
1c.3.4 1c.3.5	Spent Fuel Capital and Transfer Retention and Severance	-	-	-	-	-	-	163 1,032	25 155	188 1,187	1,187	188	-	-	-	-	-	-	-	-	-
1c.3.6	Prairie Island Indian Community Payments	-	-	-	-	-		311	199	311	1,101	311	-	-	-	-	-	-	-	-	-
1c.3	Subtotal Period 1c Collateral Costs	91	5	60	109	-	245		309	2,325	1,826	499	-	-	561	-	-	-	33,685	109	-
Period 1	c Period-Dependent Costs																				
1c.4.1	Insurance	-	-	-	-	-	-	414	41	455	455	-	-	-	-	-	-	-	-	-	-
1c.4.2	Property taxes	-	-	-	-	-	-	903	90	994	994	-	-	-	-	-	-	-	-	-	-
1c.4.3 1c.4.4	Health physics supplies Heavy equipment rental	-	248 188		-		-	-	62 28	309 216	309 216	-	-	-	-	-	-	-	-	-	-
1c.4.4 1c.4.5	Disposal of DAW generated	-	100	3	1	-	13		4	20	20	-	-		152	-	-	-	3,039	5	-
1c.4.6	Plant energy budget	-	-			-	-	404	61	465	465	-	-	-		-	-	-	-	-	-

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Table H-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(11	lousanus	or 2020 Dona	13)											
		_				Off-Site	LLRW	0.1		=	NRC	Spent Fuel	Site	Processed			Volumes	amaa	Burial /		Utility and
Activit Index		Decon Cost	Kemoval Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet		Craft Manhours	Contractor Manhours
	c Period-Dependent Costs (continued)																				
1c.4.7 1c.4.8	NRC Fees Emergency Planning Fees	-	-	-	-	-	-	161 542	16 54	177 596	177	- 596	-	-	-	•	-	-	-	-	-
1c.4.9	Fixed Overhead	-		-	-	-	-	359	54	413	413	-	-	-	-		-	-	-	-	-
1c.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	105	16	121	-	121	-	-	-	-	-	-	-	-	-
1c.4.11	ISFSI Operating Costs	-	-	-	-	-	-	14	2	16		16	-	-	-	-	-	-	-	-	-
1c.4.12 1c.4.13	Railroad Track Maintenance Security Staff Cost	-	-	-	-	-	-	16 2,076	2 311	18 2,388	18 2,388	-	-	-	-	-	-	-	-	-	30,596
1c.4.13 1c.4.14	Utility Staff Cost	-	-	-	-	-	-	6,714	1,007	2,388 7,722	2,388 7,722	-	-	-	-		-	-	-	-	30,596 105,271
1c.4	Subtotal Period 1c Period-Dependent Costs	-	435	3			13		1,749	13,910	13,177	733	-	-	152	-	-	-	3,039	5	
1c.0	TOTAL PERIOD 1c COST	91	1,021	63	110	-	257	14,024	2,376	17,943	16,710	1,233	-	-	713	-	-	-	36,724	16,615	136,450
PERIO	D 1 TOTALS	2,873	2,846	134	212	-	546	92,207	14,777	113,594	107,126	6,468	-	-	2,134	-	-	-	84,593	33,743	853,167
PERIO	D 2a - SAFSTOR Dormancy with Wet Spent Fuel Storage																				
	a Direct Decommissioning Activities																				
2a.1.1 2a.1.2	Quarterly Inspection Semi-annual environmental survey									a a											
2a.1.2 2a.1.3	Prepare reports									a a											
2a.1.4	Bituminous roof replacement	-		-	-	-	-	54	8	62	62	-	-	-	-	-	-	-	-	-	-
2a.1.5	Maintenance supplies	-	-	-	-	-	-	520	130	650	650	-	-	-	-	-	-	-	-	-	-
2a.1	Subtotal Period 2a Activity Costs	-	-	-	-	-	-	574	138	712	712	-	-	-	-	-	-	-	-	-	-
Period 2	a Additional Costs																				
2a.2.1	Security Modifications	-	-	-	-	-	-	4,348	652	5,000	5,000	-	-	-	-	-	-	-	-	-	-
2a.2	Subtotal Period 2a Additional Costs	-	-	=	-	-	-	4,348	652	5,000	5,000	-	-	-	-	-	-	-	-	-	-
	a Collateral Costs																				
2a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	59,836	8,975	68,812	-	68,812	-	-	-	-	-	-	-	-	-
2a.3.2	Retention and Severance	-	-	-	-	-	-	22,434	3,365	25,799	25,799	-	-	-	-	-	-	-	-	-	-
2a.3.3 2a.3	Prairie Island Indian Community Payments Subtotal Period 2a Collateral Costs	-	-	-	-	-	-	4,654 $86,924$	12,341	4,654 $99,265$	25,799	4,654 $73,466$	-	-	-	-	-	-	-	-	-
Period 2	a Period-Dependent Costs																				
2a.4.1	Insurance	-	-	-	-	-	-	1,804	180	1,985	1,985	-	-	-	-	-	-	-	-	-	-
2a.4.2 2a.4.3	Property taxes Health physics supplies	-	801	-	-	-	-	13,489	1,349 200	14,838 1,001	14,838 1,001	-	-	-	-	-	-	-	-	-	-
2a.4.5 2a.4.4	Disposal of DAW generated	-	- 001	14	- 6	-	59		17	96	96	-	-	-	714	-	-	-	14,273	23	-
2a.4.5	Plant energy budget	-	-	-	-	-	-	1,208	181	1,389	1,389	-	-	-		-	-	-	,	-	-
2a.4.6	NRC Fees	-	-	-	-	-	-	908	91	999	999		-	-	-	-	-	-	-	-	-
2a.4.7 2a.4.8	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	6,924 4,432	692 665	7,616 5.097	5.097	7,616	-	-	-	-	-	-	-	-	-
2a.4.8 2a.4.9	Spent Fuel Pool O&M	-		-	-	-	-	1,573	236	1,809	5,097	1,809	-	-	-	-	-	-	-	-	-
2a.4.10	ISFSI Operating Costs	-	-	-	-	-	-	209	31	240	-	240	-	-	-	-	-	-	-	-	-
2a.4.11	Railroad Track Maintenance	-		-	-	-	-	462	69	531	531	-	-	-	-	-	-	-	-	-	-
2a.4.12	Security Staff Cost	-	-	-	-	-	-	29,334	4,400	33,734	24,289 3,517	9,446 675	-	-	-	-	-	-	-	-	431,215 58,126
2a.4.13 2a.4	Utility Staff Cost Subtotal Period 2a Period-Dependent Costs	-	801	14	6	-	59	3,645 63,988	547 8,659	4,192 $73,527$	53,741	19,786	-	-	714	-	-	-	14,273	23	
2a.0	TOTAL PERIOD 2a COST	-	801	14	6	-	59	155,834	21,790	178,504	85,251	93,252	-	-	714	-	-	-	14,273	23	489,341
PERIO	D 2b - SAFSTOR Dormancy with Dry Spent Fuel Storage																				
	b Direct Decommissioning Activities																				
2b.1.1	Quarterly Inspection									a											
2b.1.2 2b.1.3	Semi-annual environmental survey									a											
2b.1.3 2b.1.4	Prepare reports Bituminous roof replacement	_	_	_	-	_	_	567	85	a 652	652	-	_	_	_	_	_	_	_	_	_
2b.1.5	Maintenance supplies	-	-	-	-	-	-	5,471	1,368	6,839	6,839	-	-	-	-	-	-	-	-	-	-
2b.1	Subtotal Period 2b Activity Costs	-	-	-	-	-	-	6,038	1,453	7,491	7,491	-	-	-	-	-	-	-	-	-	-
Period 2	b Collateral Costs																				
2b.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	18,218	2,733	20,951	-	20,951	-		-	-	-	-	-	-	-
2b.3.2	Prairie Island Indian Community Payments	-	-	-	-	-	-	48,970	-	48,970	-	48,970	-	-	-	-	-	-	-	-	-
2b.3	Subtotal Period 2b Collateral Costs	-	-	-	-	-	-	67,188	2,733	69,921	-	69,921	-	-	-	-	-	-	-	-	=

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Table H-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(Tł	ousands	of 2020 Dolla	rs)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Rurial	Volumes		Burial /		Utility and
Activit		Decon	Removal	Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C		Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Period 2	2b Period-Dependent Costs																				
2b.4.1	Insurance	-	-	-	-	-	-	18,984	1,898	20,882	20,882	-	-	-	-	-	-	-	-	-	-
2b.4.2	Property taxes	-	-	-	-	-	-	141,925	14,192	156,117	156,117	-	-	-	-	-	-	-	-	-	-
2b.4.3 2b.4.4	Health physics supplies Disposal of DAW generated	-	4,453	80	33	-	334	-	1,113 96	5,566 543	5,566 543	-	-	-	4,049	-	-	-	80,989	132	-
2b.4.5	Plant energy budget	-	-	-	-	-	-	6,356	953	7,309	7,309	-	-	-	-	-	-	-	-	-	-
2b.4.6	NRC Fees	-	-	-	-	-	-	8,917	892	9,809	9,809	-	-	-	-	-	-	-	-	-	-
2b.4.7	Emergency Planning Fees	-	-	-	-	-	-	2,906	291	3,197		3,197	-	-	-	-	-	-	-	-	-
2b.4.8 2b.4.9	Fixed Overhead ISFSI Operating Costs	-	-	-	-	-	-	6,388 2,194	958 329	7,346 2,523	7,346	2,523	-	-	-		-	-	-	-	-
2b.4.10	Railroad Track Maintenance	-	-	-	-	-	-	2,451	368	2,819	2,819	2,828	-	-	-	-	-	-	-	-	-
2b.4.11	Security Staff Cost	-	-	-	-	-	-	109,414	16,412	$125,\!826$	27,682	98,145	-	-	-	-	-	-	-	-	1,467,751
2b.4.12	Utility Staff Cost Subtotal Period 2b Period-Dependent Costs	-	4,453	80	33	-	334	53,539	8,031	61,570 403,506	38,666	22,904	-	-	4.040	-	-	-	80,989	132	815,417
2b.4	Subtotal Period 26 Period-Dependent Costs	-	4,453	80		-	334	353,073	45,534	403,506	276,738	126,768	-	-	4,049	-	-	-	80,989	132	2,283,168
2b.0	TOTAL PERIOD 2b COST	-	4,453	80	33	-	334	426,299	49,719	480,918	284,229	196,689	-	-	4,049	-	-	-	80,989	132	2,283,168
PERIO	D 2c - SAFSTOR Dormancy without Spent Fuel Storage																				
	2c Direct Decommissioning Activities																				
2c.1.1	Quarterly Inspection									a											
2c.1.2 2c.1.3	Semi-annual environmental survey Prepare reports									a a											
2c.1.3	Bituminous roof replacement	-	-	-	-	_	-	137	21	157	157	-	-	-	_		_	-	-	_	-
2c.1.5	Maintenance supplies	-	-	-	-	-	-	1,321	330	1,652	1,652	-	-	-	-	-	-	-	-	-	-
2c.1	Subtotal Period 2c Activity Costs	-	-	-	-	-	-	1,458	351	1,809	1,809	-	-	-	-	-	-	-	-	-	-
Period 2	& Period-Dependent Costs																				
2c.4.1	Insurance	-	-	-	-	-	-	2,645	265	2,910	2,910	-	-	-	-	-	-	-	-	-	-
2c.4.2	Property taxes	-		-	-	-	-	21,986	2,199	24,185	24,185	-	-	-	-	-	-	-	-	-	-
2c.4.3 2c.4.4	Health physics supplies Disposal of DAW generated	-	1,064	19	. 8	-	79	-	266 23	1,330 129	1,330 129	-	-	-	964	-	-	-	19,276	31	-
2c.4.4 2c.4.5	Plant energy budget	-	-	-	·	, -	- 18	1,535	230	1,765	1,765	-	-	-	-			-	15,276	- 31	-
2c.4.6	NRC Fees	-	-	-	-	-	-	1,943	194	2,137	2,137	-	-	-	-	-	-	-	-	-	-
2c.4.7	Fixed Overhead	-	-	-	-	-	-	1,543	231	1,774	1,774	-	-	-	-	-	-	-	-	-	-
2c.4.8 2c.4.9	Railroad Track Maintenance Security Staff Cost	-	-	-	-	-	-	592 22,641	89 3,396	681 26,037	681 26,037	-	-	-	-	-	-	-	-	-	295,417
2c.4.10	Utility Staff Cost	-	-	-	-	_	_	10,979	1,647	12,626	12,626	-	-	-	_	-	-	-	-	_	172,327
2c.4	Subtotal Period 2c Period-Dependent Costs	-	1,064	19	8	-	79		8,540	73,575	73,575	-	-	-	964	-	-	-	19,276	31	467,744
2c.0	TOTAL PERIOD 2c COST	-	1,064	19	. 8	3 -	79	65,323	8,891	75,384	75,384	-	-	-	964	-	-	-	19,276	31	467,744
PERIO	D 2 TOTALS	-	6,318	114	46		472	647,456	80,400	734,806	444,864	289,942	÷	-	5,727	-	-	-	114,538	187	3,240,253
PERIO	D 3a - Reactivate Site Following SAFSTOR Dormancy																				
	Ba Direct Decommissioning Activities																				
3a.1.1 3a.1.2	Prepare preliminary decommissioning cost Review plant dwgs & specs.	-	-	-	-	-	-	167 591	25 89	192 680	192 680	-	-	-	-	-	-	-	-	-	1,300 4,600
3a.1.2 3a.1.3	Review plant dwgs & specs. Perform detailed rad survey	-	-	-	-	-	-	991	89	680 a	680	-	-	-	-	-	-	-	-	-	4,600
3a.1.4	End product description	-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	1,000
3a.1.5	Detailed by-product inventory	-	-	-	-	-	-	167	25	192	192	-	-	-	-	-	-	-	-	-	1,300
3a.1.6	Define major work sequence	-	-	-	-	-	-	964	145	1,108	1,108	-	-	-	-	-	-	-	-	-	7,500
3a.1.7 3a.1.8	Perform SER and EA Prepare/submit Defueled Technical Specifications	-	-	-	-	-	-	398 964	60 145	458 1,108	458 1,108	-	-	-	-			-	-	-	3,100 7,500
3a.1.9	Perform Site-Specific Cost Study	-	-	-	-	-	-	643	96	739	739	-	-	-	-	-	-	-	-	-	5,000
3a.1.10	Prepare/submit Irradiated Fuel Management Plan	-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	1,000
Activity	Specifications																				
	1 Re-activate plant & temporary facilities	-	-	-	-	-	-	947	142	1,089	980	-	109	-	-	-	-	-	-	-	7,370
	2 Plant systems	-	-	-	-	-	-	536	80	616	554	-	62	-	-	-	-	-	-	-	4,167
	3 Reactor internals 4 Reactor vessel	-	-	-	-	-	-	912 835	137 125	1,049 961	1,049 961	-	-	-	-	-	-	-	-	-	7,100 6,500
	5 Biological shield	-	-	-	-	-	-	835 64	10	74	74	-	-	-	-	-	-	-	-	-	500
3a.1.11.	6 Steam generators	-	-	-	-	-	-	401	60	461	461	-	-	-	-	-	-	-	-	-	3,120
	7 Reinforced concrete	-	-	-	-	-	-	206	31	236	118	-	118	-	-	-	-	-	-	-	1,600
	8 Main Turbine 9 Main Condensers	-	-	-	-	-	-	51 51	8	59 59	-	-	59 59	-	-	-	-	-	-	-	400 400
əa.1.11.	o man condensers	-	-	-	-	-	-	91	8	99	-	-	99	-	-	-	-	-	-	-	400

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Table H-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(Th	ousands	of 2020 Dolla	rs)											
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet		Craft Manhours	Utility and Contractor Manhours
Activity Specification																					
	ructures & buildings	-	-	-	-	-	-	401	60	461	231	-	231	-	-	-	-	-	-	-	3,120
3a.1.11.11 Waste m 3a.1.11.12 Facility &		-	-	-	-	-	-	591 116	89 17	680 133	680 67		67		-	-	-	-	-	-	4,600 900
3a.1.11 Total		-	-	-	-	-	-	5,112	767	5,879	5,175		704	-	-	-	-	-	-	-	39,777
Planning & Site Pre																					
	dismantling sequence	-	-	-	-	-	-	308 3,500	46 525	355 4,025	355 4,025	-	-	-	-	-	-	-	-	-	2,400
	ep. & temp. svces vater clean-up system	-	-	-	-	-	-	180	27	207	4,025		-		-	-	-	-	-	-	1,400
3a.1.15 Rigging/0	Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,400	360	2,760	2,760	-	-	-	-	-	-	-	-	-	´-
	casks/liners & containers Period 3a Activity Costs	-	-	-	-	-	-	158 15,810	24 2,371	182 18,181	182 17,477		704	-	-	-	-	-	-	-	1,230 77,107
Period 3a Additiona	al Costs																				
	racterization	-	-	-	-	-	-	3,520	1,056	4,576	4,576	-	-	-	-	-	-	-	-	21,020	8,332
	azardous Waste	-	-	353				-	76	702	702		-	6,132		-	-	-	351,977	2,348	
	s Abatement Period 3a Additional Costs	- -	2,526 2,526	3 356			1,369 1,369		996 2,129	5,044 $10,321$	5,044 $10,321$	-	-	6,132	12,843 12,843	-	-	-	166,959 518,936	20,907 44,275	
Period 3a Collateral	l Costs																				
3a.3.1 Small too	ol allowance	-	34	-	-	-	-	-	5	39	39		-	-	-	-	-	-	-	-	-
3a.3 Subtotal	Period 3a Collateral Costs	-	34	-	-	-	-	-	5	39	39	-	-	-	-	-	-	-	-	-	-
Period 3a Period-De																					
3a.4.1 Insuranc 3a.4.2 Property		-	-	-	-	-	-	279 2,320	28 232	307 2,553	307 2,553	-	-		-	-	-	-	-	-	-
	physics supplies	-	669	-	-	-	-		167	836	836		-	-	-	-	-	-	-	-	-
	quipment rental	-	753		-	-		-	113	866	866	-	-	-	-	-	-	-			-
	of DAW generated ergy budget	-	-	10	) 4		42	1,621	12 243	69 1,864	69 1,864	-	-	-	514	-	-	-	10,287	17	-
3a.4.7 NRC Fee		-	-	-	-	-	-	335	33	368	368	-	-	-	-	-	-	-	-	-	-
3a.4.8 Fixed Ov		-	-	-	-	-	-	1,440	216	1,656	1,656		-	-	-	-	-	-	-	-	-
	Track Maintenance Staff Cost	·	-	-	-	-	-	63 4,386	9 658	72 5,044	72 5,044		-	-	-	-	-	-	-	-	65,000
3a.4.11 Utility S		-	-	-	-	-	-	16,379	2,457	18,835	18,835		-		-	-	-	-	-	-	257,920
3a.4 Subtotal	Period 3a Period-Dependent Costs	-	1,422	10	) 4		42	26,823	4,169	32,471	32,471	-	-	-	514	-	-	-	10,287	17	322,920
3a.0 TOTAL I	PERIOD 3a COST	-	3,982	366	3 248	3 178	1,411	46,153	8,674	61,013	60,308	-	704	6,132	13,357	-	-	-	529,223	44,292	408,359
PERIOD 3b - Deco	ommissioning Preparations																				
Period 3b Direct De	ecommissioning Activities																				
Detailed Work Proc	edures																				
3b.1.1.1 Plant sys	stems	-	-	-	-	-	-	608	91	700	630	-	70	-	-	-	-	-	-	-	4,733
3b.1.1.2 Reactor i		-	-	-	-	-	-	321	48	369 200	369		-	-	-	-	-	-	-	-	2,500
	ng buildings ling assembly	-	-	-	-	-	-	174 129	26 19	148	50 148		150		-	-	-	-	-	-	1,350 1,000
3b.1.1.5 CRD hou	usings & ICI tubes	-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	1,000
	strumentation	-	-	-	-	-	-	129 467	19 70	148 537	148 537	-	-	-	-	-	-	-	-	-	1,000 3,630
3b.1.1.7 Reactor v 3b.1.1.8 Facility of		-	-	-	-	-	-	154	23	177	89	-	89		-	-	-	-	-	-	1,200
3b.1.1.9 Missile s	shields	-	-	-	-	-	-	58	9	67	67	-	-	-	-	-	-	-	-	-	450
3b.1.1.10 Biologica		-	-	-	-	-	-	154 591	23 89	177 680	177 680		-	-	-	-	-	-	-	-	1,200 4,600
3b.1.1.11 Steam ge 3b.1.1.12 Reinforce		-	-	-	-	-	-	129	89 19	148	680 74		74	-	-	-	-	-	-	-	4,600 1,000
3b.1.1.13 Main Tu	rbine	-	-	-	-	-	-	200	30	231		-	231	-	-	-	-	-	-	-	1,560
3b.1.1.14 Main Cor 3b.1.1.15 Auxiliary		-	-	-	-	-	-	200 351	30 53	231 403	363	-	231 40	-	-	-	-	-	-	-	1,560
3b.1.1.15 Auxiliary 3b.1.1.16 Reactor h		-	-	-	-	-	-	351 351	53 53	403	363 363		40 40		-	-	-	-	-	-	2,730 2,730
3b.1.1 Total	Period 3b Activity Costs	-	-	=	-	-	-	4,144 4,144	622 622	4,765 4,765	3,841 3,841	-	924 924	-	-	-	-	-	-	-	32,243 32,243
	•	-	-	-	-	-	-	-1,1-1-1	022	4,100	5,041	-	524	-	-	-	-	-	-	-	02,240
Period 3b Collateral 3b.3.1 Decon eq		1,055	_	-	_	_	_	-	158	1,213	1,213	-	_	_	_	_	-	_	_	_	-
3b.3.2 DOC stat	ff relocation expenses	-	-	-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-
3b.3.3 Pipe cutt	ting equipment	-	1,200	-	-	-	-	-	180	1,380	1,380	-	-	-	-	-	-	-	-	-	-

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Table H-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(111	ousanus	or 2020 Dona	13)											
					_	Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
3b.3	Subtotal Period 3b Collateral Costs	1,055	1,200	-	-	-	-	1,264	528	4,047	4,047	-	-	-	-	-	-	-	-	-	-
Period 3l	Period-Dependent Costs																				
3b.4.1	Decon supplies	38	-	-	-	-	-	- 0.41	9	47	47	-	-	-	-	-	-	-	-	-	-
3b.4.2 3b.4.3	Insurance Property taxes	-	-	-	-	-	-	241 1,155	24 116	266 1,271	266 1,271	-	-	-	-	•	-	-	-	-	-
3b.4.3	Health physics supplies	-	295	-		-	-	- 1,155	74	369	369	-	-	-	-	-		-	-	-	-
3b.4.5	Heavy equipment rental	-	375	-	-	-	-	-	56	432	432	-	-	-	-	-	-	-	-	-	-
3b.4.6	Disposal of DAW generated	-	-	6	2	-	24		7	39	39	-	-	-	290	-	-	-	5,802	9	-
3b.4.7 3b.4.8	Plant energy budget NRC Fees	-	-	-	-	-	-	808 167	121 17	930 183	930 183	-	-	-	-	-	-	-	-	-	-
3b.4.9	Fixed Overhead	-	-	-	-	-	-	718	108	826	826	-	-	-	-	-	-	-	-	-	-
3b.4.10	Railroad Track Maintenance	-	-	-	-	-	-	31	5	36	36	-	-	-	-	-	-	-	-	-	-
3b.4.11	Security Staff Cost	-	-	-	-	-	-	2,187	328	2,515	2,515	-	-	-	-	-	-	-	-	-	32,411
3b.4.12	DOC Staff Cost	-	-	-	-	-	-	5,344	802	6,146	6,146	-	-	-	-	-	-	-	-	-	58,080
3b.4.13 3b.4	Utility Staff Cost Subtotal Period 3b Period-Dependent Costs	38	670	6	2	-	24	8,167 18,820	1,225 2,891	9,392 $22,450$	9,392 $22,450$	-		-	290	-	-	-	5,802	9	128,607 219,098
3b.0	TOTAL PERIOD 3b COST	1,092	1,870	6	2	-	24	24,227	4,040	31,262	30,338	-	924	-	290	-	-	-	5,802	9	251,341
PERIOI	3 TOTALS	1,092	5,852	372	251	178	1,435	70,380	12,715	92,275	90,647	-	1,628	6,132	13,647	-	-	-	535,025	44,301	659,700
PERIOI	0 4a - Large Component Removal																				
Period 4a	a Direct Decommissioning Activities																				
Nuclear	Steam Supply System Removal																				
4a.1.1.1	Reactor Coolant Piping	11	42	10	11				52	285	285	-	-	240			-	-	33,680	778	
	Pressurizer Relief Tank	5	19	6	7				31	174	174	-	-	160			-	-	22,441	352	
4a.1.1.3 4a.1.1.4		13	60 77	46 382	85 91		463 776		155 265	822 1,591	822 1,591	-	-	-	2,332 2,196		-	-	295,800 158,199	1,226 1,346	
4a.1.1.5		-	3,307	1,690	1,743				2,590	15,625	15,625	-	-	18,672			-	-	1,581,180	10,253	
4a.1.1.6		63	248	205	44		454	-	283	1,623	1,623	-	-	2,138			-	-	165,025	4,449	-
4a.1.1.7	Reactor Vessel Internals	53	4,650	11,331	828		8,610		10,900	36,649	36,649	-	-	-	1,174		742	-	167,605	22,373	1,053
4a.1.1.8	Vessel & Internals GTCC Disposal	-	-	1.050	-	-	8,680	- 070	1,302	9,982	9,982	-	-	-	- 0.045	-	-	1,773	344,823	- 00.070	1,053
4a.1.1.9 4a.1.1	Reactor Vessel Totals	146	5,835 14,237	1,653 $15,324$	442 3,250		3,268 26,293		6,576 $22,154$	18,053 84,804	18,053 84,804	-	-	21,210	9,245 $28,505$		742	1,773	579,324 3,348,078	22,373 63,151	
Removal	of Major Equipment																				
4a.1.2	Main Turbine/Generator	-	292	116	35		-	-	173	1,170	1,170	-	-	2,243		-	-	-	134,601	4,116	
4a.1.3	Main Condensers	-	2,510	79	33	742	-	-	752	4,115	4,115	-	-	4,000	-	-	-	-	180,000	34,978	-
	g Costs from Clean Building Demolition		50.4						110	010	010									o	
4a.1.4.1 4a.1.4	Reactor Totals	-	794 794	-	-	-	-	-	119 119	913 913	913 913	-	-	-	-	•	-	-	-	7,589 7,589	
			7.54						113	515	313									7,000	
	of Plant Systems Air Removal	_	31	_	_	_	_	_	5	36	_	_	36		_	_	_	_		452	_
4a.1.5.1		-	46	-	-	-	_	-	7	53	-	-	53	-			-	-	-	670	
4a.1.5.3	Auxiliary Feedwater - RCA	-	47	0	2	36	-	-	17	102	102	-	-	215	-	-	-	-	8,722	601	
4a.1.5.4		-	90	-	-	-	-	-	14	104	-	-	104	-	-	-	-	-	-	1,335	
4a.1.5.5 4a.1.5.6		-	38 20	0	2	39	-	-	16 3	95 23	95	-	23	233	-	-	-	-	9,453	444 304	
4a.1.5.6 4a.1.5.7		-	1	- 0	- 0	1	-	-	0	25 3	3	-	20	- 6	-	_	-	-	243	12	
4a.1.5.8		Ē	42	-	-		-	-	6	49	-	=	49	-	-	-	-	-	-	619	
4a.1.5.9		-	474	-	-	-	-	-	71	545	-	-	545	-	-	-	-	-	-	6,837	
	Condensate Polishing	-	235			-	-	-	35	271	-	-	271	-	-	-	-	-	-	3,420	
	Condensate Polishing - RCA Electro-hydraulic	-	183 9	4	15	348	-	-	101	651 10	651	-	10	2,078	-	-	-	-	84,395	2,329 127	
	Feedwater	-	153	-	-	-		-	23	175	-	-	175	-	-	-	-	-	-	2,215	
4a.1.5.14	Feedwater - RCA	-	195	7	24	537	-	-	133	895	895	-	-	3,208	-	-	-	-	130,294	2,651	-
	Gland Seal	-	34	-	-	-	-	-	5	39	-	-	39	-	-	-	-	-	-	505	-
	Heater Drain	-	400	-	-	-	-	-	60	460	-	-	460	-	-	-	-	-	-	5,881	-
	Internal Circ Water & CDSR Main Gen/Exciter/Transformer	-	27	-	-	-	-	-	4	31	-	-	31	-	-	-	-	-	-	389 5	-
	Main Steam	-	115	-	-	-		-	17	133	-	-	133	-		-		-	-	1,690	-
4a.1.5.20	Main Steam - RCA	-	366	10	37		-	-	225	1,482	1,482	-	-	5,044	-	-	-	-	204,825	4,956	-
4a.1.5.21	Steam Generator Blowdown	=	434	22	29	340	234	-	224	1,282	1,282	-	-	2,031	686	-	-	-	126,640	5,974	-

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Table H-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

Property								(111	ousanus	oi 2020 Dolla	13)											
Mathematical Content																						
Mary Control   Mary																						
Ministry																						
March   Marc			-		-	-	-	-	-			-	-		-	-	-	-	-			-
1. 1			-		-	-	-	-	-			-	-		-	-	-			-		-
Mathematical Property of the Control Property of the			-			108	2,144	234	-			4,510	-		12,815	686	-	-	-	564,572		-
Note	4a.1.6	Scaffolding in support of decommissioning	-	909	3	1	26	4	-	233	1,176	1,176	-	-	138	12	-	-	-	6,985	6,020	-
14. 1   1.	4a.1	Subtotal Period 4a Activity Costs	146	22,144	15,566	3,426	6,311	26,530	556	24,467	99,147	96,689	-	2,458	40,406	29,203	-	742	1,773	4,234,235	163,954	5,187
Second   Property										0.44												.=
Manual   M			÷				-		-				÷	- -	-				- -			
Section   Sect	Period 4a	a Collateral Costs																				
A subsequence of the subsequen			2	-	4	8	-	17	-				-	-	-	39	-	-	-	2,337	8	-
No.			- 2		- 4	- 8	-	17					-		-	39	-			2 337	- 8	-
Math			-	210	-	o o		11		50	200	200		24		00				2,001	0	
March   Marc			100							o F	19≝	195										
Math			100		-	-	-	-	643				-	-	-	-	-	-	-	-	-	-
Mode		Property taxes	-	-	-	-	-	-		272	2,987	2,987	-	-	-	-	-	-	-	-	-	-
Lance   Deposed FAW promised			-		-	-	-	-	-				-	-	-	-	-	-	-	-	-	-
Marked   M			-		50	- 94	-	9.45	-				-	-	-	9 071	-	-	-	50.419	07	-
Michael   Mich			-	-	-		-	-	2.047				-	-	-	2,311	-	-		55,416	-	-
Laquid Decimate Processing Equipment/Services			-	-	-	-	-	-					-	-	-	-	-	-		-	-	-
Salicid Flank Missione Flank Missi			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	-
4.4.1   Service   1.4.2   Se		Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	-
4.4.1   Marting Staff Corf   1.5			-	-	-	-	-	-					-	-	-	-	-	-		-	-	-
4.4.1   Dicts   1.7.0   Dicts   1.7.0   1.7.			=	-	-	-	-	-					=	-	-	-	-	-	-	-	-	76,832
4.4 Subsistal Period Legendean Closes 10 5,08 5 50 15 5 15 5 15 5 15 5 15 5 15 5 15		DOC Staff Cost	-	-	-			-						-		-	-	-	-	-		
Print   Prin			100	5,068	59			245						-	-	2,971	-	-	-	59,418		
Part	4a.0	TOTAL PERIOD 4a COST	248	27,553	15,796	3,516	6,311	28,375	54,311	34,343	170,454	167,972	-	2,482	40,406	32,785	125	742	1,773	4,345,791	165,725	612,713
September   Plant Register   Plant Reg	PERIO	0 4b - Site Decontamination																				
	Period 4b	Direct Decommissioning Activities																				
4-1.2.1   Aux Bidg Normal Ventilation   2   0   0   1   - 1   3   3   3   - 3   - 3   - 3   - 4   26   - 2   - 4   26	4b.1.1	Remove spent fuel racks	314	35	86	41	-	703	-	356	1,535	1,535	-	-	-	2,092	-	-	-	132,919	576	-
4-12.2   Muldings Maintenance   15				0	0	0				1	0	0			0					140	0.0	
4-1.2.4   Chemical & Volume Control   1.263   89   90   73   97   694   3.861   3.861   - 4.498   2.846   3.66,656   17.235   - 4.1245   - 4.125			-	_	0	0	1	-	-	1	-	-	-	- 5	ئ -	_	-	-		140		-
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$			-	-	89	90	753	973	-	694	-		-		4,498	2,846	-	-	-	366,565		
4b.1.2.7   Containment Colling. RCA   304   7   25   569			-			91	2,079	-	-			3,597	-		12,427	-	-	-	-	504,675		-
4b.1.2.8 Containment Hydrogen Control·RCA  4b.1.2.9 Containment Hydrogen Control·RCA  4b.1.2.10 Containment Spray - RCA  4b.1.2.11 Containment Spray - RCA  4b.1.2.11 Containment Spray - RCA  4b.1.2.11 Containment Spray - RCA  4b.1.2.12 Containment Spray - RCA  4b.1.2.13 Containment Spray - RCA  4b.1.2.14 Containment Spray - RCA  4b.1.2.15 Containment Spray - RCA  4b.1.2.15 Containment Spray - RCA  4b.1.2.16 Containment Spray - RCA  4b.1.2.16 Containment Spray - RCA  4b.1.2.16 Containment Spray - RCA  4b.1.2.17 Containment Spray - RCA  4b.1.2.18 Containment Spray - RCA  4b.1.2.19 Containment Spray - RCA  4b.1.2.10 Emergency Diesel  4b.1.2.10 Emergency Diesel  4b.1.2.10 Electrical Containment Spray - RCA  4b.1.2.10 Containment Spray - RCA  4b.			-			-	-	-	-				-		-	-	-	-	-			-
4b.1.2.10   Containment Spray - RCA   93   2   6   145   .			-			25 1			-				-	-			-	-				-
4b.1.2.11   Coling Water   CA   Ca   Ca   Ca   Ca   Ca   Ca   Ca			-			6		-	-				-	-			-	-				-
4b1.2.12         Colong Water - RCA         658         16         57         1,293         368         2,392         2,392         - 7,728         - 7,728         - 313,832         8,594         - 4b1.2.13         Habergoon Diesel         - 50         - 730         - 522         - 730         - 522         - 730         - 522			-		24	51	828	248	-			1,635	-	-	4,951	737	-	-	-	247,952		-
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			Ē				-	-	-				÷		-	-	-	-	-			-
4b.1.2.14   D2 Emergency Diesel   36			-		16	57	1,293	-	-			,	-			-	-	-	-			-
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			-		-	-	-	-	-				-			-	-	-				-
4b.1.2.17 Electrical - Contaminated	4b.1.2.15	Diesel Rooms Ventilation	-		-	-	-	-	-	1		-	-	11	-	-	-	-	-	-	135	-
4b.1.2.18 Electrical - Contaminated - Fuel Pool			-			-	-	-	-				-			-	-	-	-	100.000		-
4b.1.2.19 Electrical - Decontaminated - 3,787 48 173 3,940 - 1,569 9,518 9,518 - 23,551 956,401 49,378 - 4b.1.2.21 Electrical - Decontaminated - Fuel Proof - 108 6 11 152 73 - 70 421 421 5,893 5 5,723 1,595 - 1			-		7				-				<del>-</del>	-			-	-	-			-
4b.1.2.2   Electrical - Decontaminated - Fuel Pool   947   12   43   986   -   392   2,380   2,380   -   5,893   -   -   239,327   12,340   -   4b.1.2.2   Fuel Handling   -   108   6   11   152   73   -   70   421   421   -   908   218   -   5,723   1,595   -   4b.1.2.2   Fuel Oil   -   120   -			-		_	9		-	-				-	-			-	-	-			-
4b.1.2.22 Fuel Oil - 121 18 140 140 1,697 - 4b.1.2.23 HVAC - Clean - 120 18 138 138 1,891 -	4b.1.2.20	Electrical - Decontaminated - Fuel Pool	-	947	12	43	986	-	-	392	2,380	2,380	-	-	5,893		-	-	-	239,327	12,340	-
4b.1.2.23 HVAC-Clean - 120 18 138 138 1,891 -			-		6		152	73	-				-	-			-	-	-	50,723		-
			-		-	-	-	-	-			-	-		-	-	-	-	-	-		-
			-		۹.	- 96	546	41	-			1 141	-		3 261	123	-	-	-	140 257		-

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Table H-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(Th	ousands	of 2020 Dollar	rs)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial V	olumes		Burial /		Utility and
Activit		Decon	Removal	Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Disnosal	of Plant Systems (continued)																				
	5 HVAC - Contaminated - Fuel Pool	-	145	4	11	234	18	-	78	489	489	-	-	1,398	53	-	-	-	60,110	1,858	-
	3 Incore Instrumentation	-	25	1	2	10	19	-	13	70	70	-	-	60	57	-	-	-	6,058	382	-
	7 Misc Drains & Vents	-	212				176	-	110	592	592	-	-	390		-	-	-	49,062	2,764	-
	Reactor Coolant	-	283	21	18		265	-	150	796	796	-	-	344		-	-	-	64,085	3,865	-
	Reactor Hot Sampling	-	125	12	7	11	118	-	65	339	339	-	- 0.4	66		-	-	-	25,063	1,611	-
4b.1.2.3	) Reactor Makeup I Reactor Vessel	-	73 19		- 0	4	- 5	-	11 7	84 36	36	-	84	26	14	-	-	-	2,000	1,042 260	-
	2 Residual Heat Removal	-	378		86	-	1,105		465	2,603	2,603	-	_	2,895		-	-	-	326,425	5,374	-
	3 Safeguards Chilled Water	-	18		-	-	-		3	20	2,000	-	20	2,000	-	-	-	_	-	259	-
	1 Safeguards Chilled Water - RCA	-	85	1	4	83	-	-	34	207	207	-	-	495	-	-	-	-	20,100	1,019	-
	5 Safety Injection	-	809	42			393	-	486	2,939	2,939	-	-	6,788		-	-	-	349,908	11,276	-
4b.1.2.30		-	54	4	3	10	37	-	25	133	133	-	-	59		-	-	-	9,420	731	-
	7 Shield Bldg Ventilation	-	125	14			165	-	132	821	821	-	-	2,152		-	-	-	118,583	1,811	-
	Spent Fuel Pool Cooling Station & Instrument Air	-	324 20	34	32	135	450	-	222 3	1,198 23	1,198	-	23	806	1,325	-	-	-	117,816	4,400 300	-
	) Station & Instrument Air - RCA	-	81	1	2	56	-	-	29	169	169	-	- 20	332		-	-	-	13,496	1,053	-
	Station & Instrument Air - RCA Fuel Pool	-	20	0	1	14	-		7	42	42	- -	-	83		-	-	-	3,374	263	-
	2 Turbine Bldg Traps & Drains	-	50				-	-	8	58		-	58	-	-	-	-	-		767	-
	3 Unit Coolers	-	42		-	-	-	-	6	49	_	-	49	-	_	-	-	-	-	611	-
4b.1.2.4	1 Unit Coolers - RCA	-	55	0	2	39	-	-	20	115	115	-	-	230	-	-	-	-	9,348	683	-
4b.1.2	Totals	-	14,735	481	883	14,533	4,126	-	6,807	41,565	38,474	-	3,091	86,861	12,129	-	-	-	4,307,475	198,796	-
	G 40.11								2.42												
4b.1.3	Scaffolding in support of decommissioning	-	1,363	4	2	38	6	-	349	1,763	1,763	-	-	207	18	-	-	-	10,477	9,030	-
Doconto	mination of Site Buildings																				
4b.1.4.1		1,096	2,527	240	1,236	373	7,080	_	3,215	15,766	15,766	_	_	2,230	67,325	_	_	_	3,286,372	45,729	_
4b.1.4.2		-	25		17		97	-	33	175	175	_	_	2,200	929	-	-	-	43,896	266	-
4b.1.4	Totals	1,096	2,552				7,177	-	3,248	15,941	15,941	-	-	2,230	68,254	-	-	-	3,330,268	45,995	-
4b.1.5	Prepare/submit License Termination Plan	-	-	-	-	-	-	526	79	605	605	-	-	-	-	-	-	-	-	-	4,096
4b.1.6	Receive NRC approval of termination plan									a											
4b.1	Subtotal Period 4b Activity Costs	1,410	18,685	814	2,179	14,945	12,012	526	10,839	61,410	58,319	_	3,091	89,298	82,494	_	_	_	7,781,139	254,398	4,096
	~	-,	,		_,	,	,		,	,			-,		,				1,102,200	,	-,
Period 4	b Additional Costs																				
4b.2.1	License Termination Survey Planning	-	-	-	-	-	-	1,037	311	1,348	1,348	-	-	-	-	-	-	-	-	-	6,240
4b.2.2	Excavation of Underground Services	-	1,175		-	-	-	225	328	1,728	1,728	-	-	-	-	-	-	-	-	7,411	-
4b.2.3	Operational Equipment	-	-	11	36	606	-	-	97	751	751	-	-	5,880		-	-	-	147,000	16	-
4b.2.4	License Termination ISFSI Subtotal Period 4b Additional Costs	-	24		435		2,532	1,375	1,112	5,560	5,560	-	-	-	9,355 9,355	-	-	-	1,123,457	3,762	5,460
4b.2	Subtotal Period 4b Additional Costs	-	1,199	93	471	606	2,532	2,638	1,848	9,387	9,387	-	-	5,880	9,355	-	-	-	1,270,457	11,189	11,700
Period 4	b Collateral Costs																				
4b.3.1	Process decommissioning water waste	5	_	9	16	-	37	-	15	83	83	-	_	_	85	-	-	-	5,092	17	-
4b.3.2	Process decommissioning chemical flush waste	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4b.3.3	Small tool allowance	-	307	-	-	-	-	-	46	353	353	-	-	-	-	-	-	-	-	-	-
4b.3.4	Decommissioning Equipment Disposition	-	-	130	67	1,112	178	-	234	1,722	1,722	-	-	6,000		-	-	-	303,608	147	-
4b.3	Subtotal Period 4b Collateral Costs	5	307	139	84	1,112	215	-	296	2,158	2,158	-	-	6,000	614	-	-	-	308,700	163	-
Period 4	b Period-Dependent Costs																				
4b.4.1	Decon supplies	564	-	_	_	-	_	_	141	705	705	-	-	-		_	_	_	-	-	-
4b.4.2	Insurance	-	-	-	-	-	-	862	86	949	949	-	-	-	-	-	-	-	-	-	-
4b.4.3	Property taxes	-	-	-	-	-	-	3,505	351	3,856	3,856	-	-	-	-	-	-	-	-	-	-
4b.4.4	Health physics supplies	-	2,456	-	-	-	-	-	614	3,070	3,070	-	-	-	-	-	-	-	-	-	-
4b.4.5	Heavy equipment rental	-	4,577		-	-	-	-	687	5,263	5,263	-	-	-		-	-	-		-	-
4b.4.6	Disposal of DAW generated	-	-	77	31	-	322	0.107	93	523	523	-	-	-	3,905	-	-	-	78,097	127	-
4b.4.7	Plant energy budget	-	-	-	-	-	-	2,165	325 86	2,490	2,490	-	-	-	-	-	-	-	-	-	-
4b.4.8 4b.4.9	NRC Fees Fixed Overhead	-	-	-	-	-	-	862 2,118	86 318	948 2,436	948 2,436	-	-	-	-	-	-	-	-	-	-
4b.4.9 4b.4.10	Liquid Radwaste Processing Equipment/Services	-		-	-	-	-	2,116 757	113	2,436 870	2,456 870	-	-	-	-	-		-	-	-	-
4b.4.11	Railroad Track Maintenance	-	-	-	-	-	-	111	17	128	128	-	-	-	-	-		-	-	-	-
4b.4.12	Remedial Actions Surveys	-	-	-	-	-	-	1,995	299	2,294	2,294	-	-	-	_	-	-	-	-	-	-
4b.4.13	Security Staff Cost	=	-	-	-	-	-	1,202	180	1,383	1,383	-	-	-	-	-	-	-	-	-	20,373
4b.4.14	DOC Staff Cost	-	-	-	-	-	-	15,039	2,256	17,294	17,294	-	-	-	-	-	-	-	-	-	174,093
4b.4.15	Utility Staff Cost	-	- -			-	-	18,793	2,819	21,612	21,612	-	-	-	0.005	-	-	-	-	-	311,145
4b.4	Subtotal Period 4b Period-Dependent Costs	564	7,033	77	31	-	322	47,410	8,384	63,822	63,822	-	=	-	3,905	-	-	-	78,097	127	505,611
4b.0	TOTAL PERIOD 4b COST	1,979	27,224	1,123	2,765	16,663	15,081	50,574	21,367	136,776	133,686	-	3,091	101,178	96,368	_		_	9,438,392	265,878	521,407
		2,010	,	1,120	2,.50	10,000	20,001	, 1	21,001		-00,000		5,551	-01,110	20,000				., .00,002	_00,0.0	

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Table H-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(Th	iousanas	of 2020 Dollar	rs)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity		Decon			Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
PERIOD	0 4e - Delay before License Termination																				
Period 4e	e Direct Decommissioning Activities																				
	e Period-Dependent Costs							1 450	140	1 600	1 000										
4e.4.2 4e.4.3	Property taxes Health physics supplies	-	87	-	-	-	-	1,476	148 22	1,623 109	1,623 109	-	-	-	-	-	-	-	-	-	-
4e.4.4	Disposal of DAW generated	-	-	2	1		6		2	11	11	-	-	-	79	-	-	-	1,573	3	-
4e.4.6	NRC Fees	-	-	-	-	-	-	162	16	178	178	-	-	-	-	-	-	-	-	-	-
4e.4.7 4e.4.8	Fixed Overhead Railroad Track Maintenance	-	-	-	-	-	-	939 49	141 7	1,079 57	1,079 57	-	-	-	-	-	-	-	-	-	-
4e.4.9	Utility Staff Cost	-	_	-	-	-	-	696	104	801	801	-	-	_	-	-	-	-	-	-	11,488
4e.4	Subtotal Period 4e Period-Dependent Costs	-	87	2	1	-	6	3,322	440	3,858	3,858	-	-	-	79	-	-	-	1,573	3	11,488
4e.0	TOTAL PERIOD 4e COST	-	87	2	1		6	3,322	440	3,858	3,858	-	-	-	79	-	-	-	1,573	3	11,488
PERIOD	9 4f - License Termination																				
	Direct Decommissioning Activities																				
4f.1.1 4f.1.2	ORISE confirmatory survey Terminate license	-	-	-	-	-	-	166	50	216 a	216	-	-	-	-	-	-	-	-	-	-
4f.1.2 4f.1	Subtotal Period 4f Activity Costs	-	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-
Period 4f	f Additional Costs																				
4f.2.1	License Termination Survey	-	-	-	-	-	-	3,199	960	4,159	4,159	-	-	-	-	-	-	-	-	40,531	3,120
4f.2	Subtotal Period 4f Additional Costs	-	-	-	-	-	-	3,199	960	4,159	4,159	-	-	-	-	-	-	-	-	40,531	3,120
Period 4f	f Collateral Costs																				
4f.3.1	DOC staff relocation expenses	-	-	-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-
4f.3	Subtotal Period 4f Collateral Costs	=	-	-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-
Period 4f	Period-Dependent Costs																				
4f.4.2	Property taxes	-	-	-	-	-	-	1,335	133	1,468	1,468	-	-	-	-	-	-	-	-	-	-
4f.4.3 4f.4.4	Health physics supplies Disposal of DAW generated	-	499	- 7	- 3	-	- 27	-	125 8	624 45	624 45	-	-	-	332	-	-	-	6,649	- 11	-
41.4.4 4f.4.5	Plant energy budget	-	-	- '	- -	-	- 21	243	36	279	279	-	-	-	334	-	-	-	6,649	- 11	-
4f.4.6	NRC Fees	-	-	-	-	-	-	422	42	465	465	-	-	-	-	-	-	-	-	-	-
4f.4.7	Fixed Overhead	=	-	-	-	-	-	890	133	1,023	1,023	-	-	-	-	-	-	-	-	-	-
4f.4.8 4f.4.9	Railroad Track Maintenance Security Staff Cost	-	-	-	-	-	-	47 805	7 121	54 926	54 926	-	-	-	-	-	-	-	-	-	11,668
4f.4.10	DOC Staff Cost	-	_	-	-	-	-	4,238	636	4,874	4,874	-	-	_	-	-	-	-	-	-	46,283
4f.4.11	Utility Staff Cost	=	-	-	-	-	-	3,772	566	4,338	4,338	-	-	-	-	-	-	-	-	-	56,395
4f.4	Subtotal Period 4f Period-Dependent Costs	-	499	7	3	-	27	11,752	1,808	14,096	14,096	-	-	-	332	-	-	-	6,649	11	114,346
4f.0	TOTAL PERIOD 4f COST	-	499	7	3	-	27	16,381	3,007	19,924	19,924	-	-	-	332	-	-	-	6,649	40,542	117,466
PERIOR	O 4 TOTALS	2,227	55,364	16,927	6,284	22,974	43,490	124,588	59,158	331,012	325,439	-	5,573	141,584	129,564	125	742	1,773	13,792,410	472,147	1,263,075
PERIOR	O 5b - Site Restoration																				
Period 5h	b Direct Decommissioning Activities																				
	on of Remaining Site Buildings																				
5b.1.1.1 5b.1.1.2		-	4,644 3	-	-	-	-	-	697 0	5,341 4	-	-	5,341 4	-	-	-	-	-	-	44,669 16	-
5b.1.1.2 5b.1.1.3		-	1,785	-	-	-	-	-	268	2,052		-	2,052	-	-	-	-	-	-	9,238	-
5b.1.1.4	Turbine	-	2,139	-	-	-	-	-	321	2,460	-	-	2,460	-	-	-	-	-	-	21,985	-
5b.1.1.5	Turbine Pedestal	-	365	-	-	-	-	-	55	420	-	-	420	-	-	-	-	-	-	1,857	-
5b.1.1	Totals	-	8,936	-	-	-	-	-	1,340	10,276	-	-	10,276	-	-	-	-	-	-	77,765	-
Site Clos	eout Activities																				
5b.1.2	Grade & landscape site	-	448	-	-	-	-	-	67	515	-	-	515	-	-	-	-	-	-	921	
5b.1.3 5b.1	Final report to NRC Subtotal Period 5b Activity Costs	-	9,384	-	-	-	-	200 200	30 1,438	231 11,022	231 231	-	10,792	-	-	-	-	-		78,686	1,560 1,560
50.1	Subtotal Letton on Activity Costs	-	9,004	-	-	-	-	200	1,458	11,042	201	-	10,792	-	-	-	-	-	-	10,000	1,000

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

Table H-1 Prairie Island SAFSTOR Unit 1 SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage (Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Volumes		Burial /		Utility and
Activit		Decon		Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Period 5	b Additional Costs																				
5b.2.1	Clean Concrete Disposal	-	2,242	-	-	-	-	5	337	2,583	-	-	2,583	-	-	-	-	-	-	8,386	-
5b.2.2	Intake Structure Cofferdam	-	623	-	-	-	-	-	93	716	-	-	716	-	-	-	-	-	-	5,168	-
5b.2.3	Construction Debris	-	-	-	-	-	-	10	2	12	-	-	12	-	-	-	-	-	-	-	-
5b.2.4	Backfill	=	3,011	-	-	-	-	-	452	3,462	-	-	3,462	-	-	-	-	-	-	2,904	-
5b.2.5	Demolition and Site Restoration of ISFSI	=	515	-	-	-	-	68	87	670	-	-	670	-	-	-	-	-	-	2,219	80
5b.2	Subtotal Period 5b Additional Costs	-	6,390	-	-	-	-	82	971	7,443	-	-	7,443	-	-	-	-	-	-	18,677	80
Period 5	b Collateral Costs																				
5b.3.1	Small tool allowance	-	125	-	-	-	-	-	19	143	-	-	143	-	-	-	-	-	-	-	-
5b.3	Subtotal Period 5b Collateral Costs	-	125	=	-	-	-	-	19	143	-	-	143	-	-	-	-	-	-	-	-
Period 5	b Period-Dependent Costs																				
5b.4.2	Property taxes	-	-	-	-	-	-	3,481	348	3,829	-	-	3,829	-	-	-	-	-	-	-	-
5b.4.3	Heavy equipment rental	-	7,144	-	-	-	-	-	1,072	8,215	-	-	8,215	-	-	-	-	-	-	-	-
5b.4.4	Plant energy budget	=	-	-	-	-	-	344	52	395	-	-	395	-	-	-	-	-	-	-	-
5b.4.5	Fixed Overhead	=	-	-	-	-	-	1,024	154	1,178	-	-	1,178	-	-	-	-	-	-	-	-
5b.4.6	Railroad Track Maintenance	=	-	-	-	-	-	133	20	152	-	-	152	-	-	-	-	-	-	-	-
5b.4.7	Security Staff Cost	-	-	-	-	-	-	2,055	308	2,363	-	-	2,363	-	-	-	-	-	-	-	29,221
5b.4.8	DOC Staff Cost	-	-	-	-	-	-	10,921	1,638	12,559	-	-	12,559	-	-	-	-	-	-	-	116,885
5b.4.9	Utility Staff Cost	-	-	-	-	-	-	3,831	575	4,406	-	-	4,406	-	-	-	-	-	-	-	57,340
5b.4	Subtotal Period 5b Period-Dependent Costs	-	7,144	-	-	-	-	21,789	4,166	33,099	-	-	33,099	-	-	-	-	-	-	-	203,445
5b.0	TOTAL PERIOD 5b COST	-	23,042	-	-	-	-	22,072	6,593	51,707	231	-	51,476	-	-	-	-	-	-	97,363	205,085
PERIO	O 5 TOTALS	-	23,042	-	-	-	-	22,072	6,593	51,707	231	-	51,476	-	-	-	-	-	-	97,363	205,085
TOTAL	COST TO DECOMMISSION	6,192	93,421	17,547	6,792	23,152	45,943	956,703	173,643	1,323,393	968,306	296,410	58,677	147,716	151,072	125	742	1,773	14,526,560	647,742	6,221,279

TOTAL COST TO DECOMMISSION WITH 15.1% CONTINGENCY:	\$1,323,393	thousands of 2020 dollars
TOTAL NRC LICENSE TERMINATION COST IS 73.17% OR:	\$968,306	thousands of 2020 dollars
SPENT FUEL MANAGEMENT COST IS 22.4% OR:	\$296,410	thousands of 2020 dollars
NON-NUCLEAR DEMOLITION COST IS 4.43% OR:	\$58,677	thousands of 2020 dollars
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	151,940	Cubic Feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	1,773	Cubic Feet
TOTAL SCRAP METAL REMOVED:	33,003	Tons
TOTAL CRAFT LABOR REQUIREMENTS:	647,742	Man-hours

End Notes: n/a - indicates that this activity not charged as decommissioning expense a - indicates that this activity performed by decommissioning staff 0 - indicates that this value is less than 0.5 but is non-zero A cell containing " - " indicates a zero value

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

# Table H-2 Prairie Island SAFSTOR Unit 2 SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage (Thousands of 2020 Dollars)

							(Th	ousands o	of 2020 Dollars	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial/		Utility and
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet		Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
PERIOD	1a - Shutdown through Transition																				
Period 1a	Direct Decommissioning Activities																				
1a.1.1	SAFSTOR site characterization survey	-	-	-	-	-	-	415	124	539	539		-	-	-	-	-	-	-	-	-
1a.1.2 1a.1.3	Prepare preliminary decommissioning cost Notification of Cessation of Operations	-	-	-	-	-	-	71	11	82 a	82	-	-	-	-	-	-	=	-	-	556
1a.1.4 1a.1.5	Remove fuel & source material Notification of Permanent Defueling									n/a a											
1a.1.6 1a.1.7	Deactivate plant systems & process waste Prepare and submit PSDAR							110	16	a 126	126										855
1a.1.8	Review plant dwgs & specs.	-	-	-	-	-	-	71	11	82	82			-	-	-	-	-	-	-	556
1a.1.9 1a.1.10	Perform detailed rad survey Estimate by-product inventory	-	_	-	_	-	-	55	8	a 63	63	_	-	_	-	-	-	-	_	-	428
1a.1.11 1a.1.12	End product description Detailed by-product inventory	-	-	-	-	-	-	55 82	8 12	63 95	63 95	-	-	-	-	-	-	-	-	-	428 641
1a.1.13	Define major work sequence	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
1a.1.14 1a.1.15	Perform SER and EA Perform Site-Specific Cost Study	-	-	-	-	-	-	170 275	26 41	196 316	196 316		-	-	-	-	-	-	-	-	1,326 2,138
	pecifications																				,
1a.1.16.1	Prepare plant and facilities for SAFSTOR	-	-	-	-	-	-	270	41	311	311		-	-	-	-	-	-	-	-	2,104
	Plant systems Plant structures and buildings	-	-	-	-	-	-	229 171	34 26	263 197	263 197		- -	-	-	-	-	-	-	-	1,782 1,334
1a.1.16.4	Waste management	-	-	-	-	-	-	110	16 16	126 126	126 126	-	-	-	-	-	-	-	-	-	855 855
1a.1.16.5 1a.1.16	Facility and site dormancy Total	-	-	-	-	-	-	110 891	134	1,024	1,024		-	-	-	-	-	-	-	-	6,930
	Work Procedures																				
	Plant systems Facility closeout & dormancy	-	-	-	-	-	-	65 66	10 10	75 76	75 76		-	-	-	-	-	-	-	-	506 513
1a.1.17.2	Total	-	-	-	-	-	-	131	20	151	151		-	-	-	-	-	-	-	-	1,019
1a.1.18	Procure vacuum drying system	-	-	-	-	-	-	5	1	6	6	-	-	-	-	-	-	-	-	-	43
1a.1.19 1a.1.20	Drain/de-energize non-cont. systems Drain & dry NSSS									a a											
1a.1.21	Drain/de-energize contaminated systems									a											
1a.1.22 1a.1	Decon/secure contaminated systems Subtotal Period 1a Activity Costs	-	-	-	-	-	-	2,387	420	a 2,807	2,807	-	-	-	-	-	-	-	-	-	15,347
Period 1a	Collateral Costs																				
1a.3.1 1a.3.2	Spent Fuel Capital and Transfer Retention and Severance	-	-	-	-	-	-	1,330 8,394	199 1,259	1,529 9,653	9,653	1,529	-	-	-	-	-	-	-	-	-
1a.3.3	Prairie Island Indian Community Payments	-	-	-	-	-	-	1,249	-	1,249	-	1,249	-	-	-	-	-	-	-	-	-
1a.3	Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	10,973	1,459	12,432	9,653	2,779	-	-	-	-	-	-	-	-	-
Period 1a 1a.4.1	Period-Dependent Costs Insurance	_	_	_	_	_	_	1,660	166	1,826	1,826	_	_	_	_	_	_	_	_	_	_
1a.4.2	Property taxes	-	-	-	-	-	-	3,623	362	3,985	3,985	-	-	-	-	-	-	-	-	-	-
1a.4.3	Health physics supplies Heavy equipment rental	-	604 753		-	-	-	-	151	755 866	755 866		-	-	-	-	-	-	-	-	-
1a.4.4 1a.4.5	Disposal of DAW generated	-	199	12	2 - [	5 -	49	-	113 14	80	80		-	-	597	-	-	-	11,944	19	-
1a.4.6	Plant energy budget	-	-	-	-	=	-	1,621	243	1,864	1,864		-	-	-	-	-	-	· -	-	=
1a.4.7	NRC Fees	-	-	-	-	-	-	516	52	567	567	2.392	-	-	-	-	-	-	-	-	-
1a.4.8 1a.4.9	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	2,174 1,440	217 216	2,392 1,656	1,656		-	-	-	-	-	-		-	-
1a.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	422	63	486	- 1,000	486	-	-	-	-	-	-	-	-	-
1a.4.11	ISFSI Operating Costs	-	-	-	-	-	-	56	8	64	-	64	-	-	-	-	-	-	-	-	-
1a.4.12 1a.4.13	Railroad Track Maintenance Security Staff Cost	-	-	-	-	-	-	63 8,328	9 1,249	72 9,577	72 9,577		-	-	-	-	-	-	-	-	122,720
1a.4.13 1a.4.14	Utility Staff Cost	-	-	-	-	-		8,328 25,478	3,822	29,300	29,300		-		-	-	-	-	-	-	400,944
1a.4	Subtotal Period 1a Period-Dependent Costs	-	1,357	12	2 - 5	-	49		6,687	53,491	50,549		-	-	597	-	-	-	11,944	19	
1a.0	TOTAL PERIOD 1a COST	-	1,357	12	2 - 6	5 -	49	58,742	8,566	68,730	63,010	5,720	-	-	597	-	-	-	11,944	19	539,011

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Table H-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(Th	ousands o	of 2020 Dollar	s)											
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD	O 1b - SAFSTOR Limited DECON Activities																				
	b Direct Decommissioning Activities																				
	mination of Site Buildings																				
1b.1.1.1	Reactor	1,199		-	-	-	-	-	599	1,798	1,798	-	-	-	-	-	-	-	-	17,003	-
1b.1.1.2 1b.1.1.3	Auxiliary Drum Transfer & Truck Loading Enclosure	1,244 17		-	-	-	-	-	622 8	1,866 25	1,866 25	-	-	-	-	-	-	-	-	17,950 244	-
1b.1.1.4	LLRW Storage Enclosure	116	-	-	-	-	-	-	58	175	175	-	-	-	-	-	-	-	-	1,673	-
1b.1.1.5 1b.1.1.6		52 15		-	-	-	-	-	26 8	78 23	78 23	-	-	-	-	-	-	-	-	749 221	- -
1b.1.1.7	Fuel Handling of Aux Building	1,014	-	-	-	-	-	-	507	1,521	1,521	-	-	-	-	-	-	-	-	13,854	-
1b.1.1	Totals	3,658		-	-	-	-	-	1,829	5,486	5,486	-	-	-	-	-	-	-	-	51,694	ē
1b.1	Subtotal Period 1b Activity Costs	3,658	-	-	-	-	-	-	1,829	5,486	5,486	-	-	-	-	-	-	-	-	51,694	-
Period 1b 1b.2.1	b Additional Costs Spent Fuel Pool Isolation	_	_	_	_	_	-	8,450	1,268	9,718	9,718	_	_	_	_	_	_	_	_	_	_
1b.2	Subtotal Period 1b Additional Costs	-	-	-	-	-	-	8,450	1,268	9,718	9,718	-	-	-	-	-	-	-	-	-	-
	b Collateral Costs									1.070	1.010										
1b.3.1 1b.3.2	Decon equipment Process decommissioning water waste	1,055 107		71	128	-	288	-	158 152	1,213 747	1,213 747	-	-	-	661	-	-	-	39,679	129	-
1b.3.4	Small tool allowance	-	61		-	-	-	-	9	70	70	-	-	-	-	-	-	-	-	-	-
1b.3.5 1b.3.6	Spent Fuel Capital and Transfer Retention and Severance	-	-	-	-	-	-	309 2,296	46 344	356 2,640	2,640	356	-	-	-	-	-	-	-	-	-
1b.3.7 1b.3	Prairie Island Indian Community Payments Subtotal Period 1b Collateral Costs	1,162	61	- 71	128	-	288	311 2,917	710	311 5,337	4,670	311 667		-	661	-	-	-	39,679	129	-
		1,102	01	,,	120		200	2,011	710	0,001	4,010	001			001				00,010	120	
1b.4.1	b Period-Dependent Costs Decon supplies	1,334	_	-	-	_	_	-	333	1,667	1,667	-	-	-	-	-	-	-	-	-	-
1b.4.2 1b.4.3	Insurance Property taxes	-	-	-	-	-	-	414 902	41 90	455 993	455 993	-	=	-	-	-	-	-	-	-	-
1b.4.4	Health physics supplies	-	448	-		-	-	- 502	112	560	560	-	-	-	-	-	-	-	-	-	-
1b.4.5 1b.4.6	Heavy equipment rental Disposal of DAW generated	-	188	- 13	- 5	-	- 53	-	28 15	216 86	216 86	-	-	-	641	-	-	-	12,830	21	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	404	61	465	465	-	-	-	-	-	-	-	-		-
1b.4.8 1b.4.9	NRC Fees Emergency Planning Fees	-	-	-		-	-	98 542	10 54	108 596	108	596	-	-	-	-	-	-	-	-	-
1b.4.10	Fixed Overhead	-	-	-	-	-	-	359	54	413	413	-	=	-	-	-	-	-	-	-	-
1b.4.11 1b.4.12	Spent Fuel Pool O&M ISFSI Operating Costs	-	-	-	-	-	-	105 14	16 2	121 16	-	121 16		-	-	-	-	-	-	-	-
1b.4.13	Railroad Track Maintenance	-	-	-	-	-	-	16	2	18	18	-	-	-	-	-	-	-	-	-	-
1b.4.14 1b.4.15	Security Staff Cost Utility Staff Cost	-	-	-	-	-	-	2,076 6,714	311 1,007	2,388 7,722	2,388 7,722	-	-	-	-	-	-	-	-	-	30,596 105,271
1b.4	Subtotal Period 1b Period-Dependent Costs	1,334	635	13	5	-	53	11,645	2,138	15,823	15,089	733	-	-	641	-	-	-	12,830	21	135,867
1b.0	TOTAL PERIOD 1b COST	6,153	696	84	133	-	341	23,012	5,944	36,364	34,963	1,401	-	-	1,303	-	-	-	52,509	51,844	135,867
PERIOD	0 1c - Preparations for SAFSTOR Dormancy																				
Period 1c	c Direct Decommissioning Activities																				
1c.1.1	Prepare support equipment for storage	-	527		-	-	-	-	79	606	606	-	-	-	-	-	-	-	-	3,000	-
1c.1.2 1c.1.3	Install containment pressure equal. lines Interim survey prior to dormancy	-	54	-		-	-	733	8 220	62 953	62 953	-	-	-	-	-	-	-	-	700 12,801	-
1c.1.4	Secure building accesses Prepare & submit interim report							20	5	a 37	37										249
1c.1.5		-	-	-	-	-	-	-02	9	31		-	-	-	-	-	-	-	-	-	
1c.1	Subtotal Period 1c Activity Costs	-	581	-	-	-	-	765	312	1,658	1,658	-	-	-	-	-	-	-	-	16,501	249
Period 1c 1c.3.1	c Collateral Costs Process decommissioning water waste	91	-	60	109	-	245	_	129	634	634	-	_	_	561	_	-	-	33,685	109	-
1c.3.3	Small tool allowance	-	5		-	-	-	-	1	6	6		-	-	-	-	-	-	-	-	-
1c.3.4 1c.3.5	Spent Fuel Capital and Transfer Retention and Severance	-	-	-	-	-	-	90 1,722	13 258		1,980	103	-	-	-	-	-	-	-	-	-
1c.3.6	Prairie Island Indian Community Payments	-		-	-	=	-	311	-	311	-	311		-	-	-	-	-	-	-	-
1c.3	Subtotal Period 1c Collateral Costs	91	5	60	109	-	245	2,123	401	3,034	2,619	415	-	-	561	-	-	-	33,685	109	-

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Table H-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

Part									ousanus o													
Mathematical Control of Math							Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial V	Volumes		Burial/		Utility and
Part																						Contractor
Control   Cont	Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Section   Sect	Period 1c	Period-Dependent Costs																				
1.01   1.			-		-	-	-	-					-	-	-	-	-	-	-	-	-	-
Section   Sect			-				-							-	-			-	-	-	-	-
1.00   1.00		Heavy equipment rental	-				-	-						-	-		-	-	-	-	-	-
1-1			-		3	1	-	13						-	-		-	-	-	3,039	5	-
Section   Sect			-		-	-	-	-						-	-	-	-	-	-	-	-	-
Marie   Mari			-		-	-	-	-						-	-	-		-	-	-	-	-
1-11   1-11		Fixed Overhead	-	-	-	-	-	-						-	-	-	-	-	-	-	-	-
Ministry		Spent Fuel Pool O&M	-	-	-	-	-	-				-		-	-	-		-	-	-	-	-
Section   Sect			-	-	-	-	-	-						-	-	-	-	-	-	-	-	-
Section   Process			-	-	-	-	-	-						-	-	-			-	-	-	30 596
Part			-	-	-	-	-	-			7,722			-		-	-	-	-	-		105,271
PRIOR FROM STANDARD Republic Properties of the P	1c.4	Subtotal Period 1c Period-Dependent Costs	-	435	3	1	-	13	11,643	1,742	13,838	13,104	733	-	-	152	-	-	-	3,039	5	135,867
Pend   Pe	1c.0	TOTAL PERIOD 1c COST	91	1,021	63	110	-	257	14,531	2,456	18,530	17,382	1,148	-	-	713	-	-	-	36,724	16,615	136,116
Part	PERIOD	1 TOTALS	6,244	3,074	159	248	-	647	96,285	16,965	123,623	115,354	8,269	-	-	2,613	-	-	-	101,177	68,478	810,994
Part	PERIOD	2a - SAFSTOR Dormancy with Wet Spent Fuel Storage																				
Sum	Period 2a	Direct Decommissioning Activities																				
Prigrate P											a											
Second Process of Part											a											
Section   Sect									000	0.0		250										
1				-	-		-	_					-	-	-	-		-	-	-	_	-
Profestional Content			-	_	-	-	-	-					-	-	_	-			-	-	_	-
Security Modifications		·																				
2.2 slobed Period 28 Additional Costs									4.040	050	<b>~</b> 000	<b>7</b> 000										
2.3.1 Spent Fuel Carpital and Transfer			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	-
Section and Severance																						
Parie Island Indian Community Phyments   1,28   1			-	-	-	-	-	-						-	-	-	-	-	-	-	-	-
2-3 Subtrailer of 2 Callaceral Costs														-			-		-	-	-	-
24.14   Insurance			-	-	-	-	-							-	-	-	-	-	-	-	-	-
24.4   Poperty tarse																						
Section   Sect			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	-
24.4   Signosal of DAW generated   1   5   47   14   77   77   .   576   11,233   19   .   .   .   .   .   .   .   .   .			-			-	-	-	,				-	-	-	-			-	-	-	-
24.4 6   NCF   Feer   F		Disposal of DAW generated	-			5	-	47			77	77	-	-	-	576		-	-	11,523	19	-
24.4   Meregency Planning Fees			-	-	-	-	-	-						-	-	-	-	-	-	-	-	-
2a.4 8 Fixed Overhead			-	-	-	-	-	-						-	-	-	-	-	-	-	-	-
2a.4 9 Spent Puel Pool O&M			-	-	-	-	-	-						-	-	-	-	-	-	-	-	-
2a.4.11 Railroad Track Maintenance		Spent Fuel Pool O&M	-	-	-	-	-	-	1,057	159	1,216		1,216	-	-	-	-	-	-	-	-	-
2a.4.12 Security Staff Cost			-	-	-	-	-	-					161	-	-	-	-	-	-	-	-	-
2a.4.13 Utility Staff Cost			-	-	-	-	-	-						-	-	-	-	-	-	-	-	901 999
2a.4 Subtoal Period 2a Period 2b Period 2a COST			-	-	-	-	-							-	-	-	-	-	-	-		
PERIOD 2b - SAFSTOR Dormancy with Dry Spent Fuel Storage  Period 2b Direct Decommissioning Activities  Period 2b Direct Decommissioning Activities  2b.1.1 Quarterly Inspection  2b.1.2 Semi-annual environmental survey  2b.1.3 Prepare reports  2b.1.4 Prepare reports  2b.1.5 Maintenance supplies  2b.1.6 Maintenance supplies  2b.1.7 Maintenance supplies  2b.1.8 Semi-annual environmental survey  2b.1.8 Semi-annual environmental survey  2b.1.8 Semi-annual environmental survey  2b.1.9 Semi-annual environmental survey  2b.1.0 Semi-annual environmental survey  2b.1.1 Semi-annual environmental survey  2b.1.2 Semi-annual environmental survey  2b.1.3 Semi-annual environmental survey  2b.1.4 Semi-annual environmental survey  2b.1.5 Semi-annual environmental survey  2b.1.6 Semi-annual environmental survey  2b.1.7 Semi-annual environmental survey  2c. Semi-annual environ			-	617	11	5	-	47						-	-	576	-	-	-	11,523	19	486,999
Period 2b Direct Decommissioning Activities           2b.1.1         Quarterly Inspection         a           2b.1.2         Semi-annual environmental survey         a           2b.1.3         Prepare reports         a           2b.1.4         Bituminous roof replacement         -         3,489         523         4,013         -	2a.0	TOTAL PERIOD 2a COST	-	617	11	5	-	47	130,742	18,572	149,994	64,714	85,280	-	-	576	-	-	-	11,523	19	486,999
2b.1.1     Quarterly Inspection       2b.1.2     Semi-annual environmental survey       2b.1.3     Prepare reports       2b.1.4     Bituminous roof replacement       2b.1.5     Maintenance supplies	PERIOD	2b - SAFSTOR Dormancy with Dry Spent Fuel Storage																				
2b.1.2 Semi-annual environmental survey 2b.1.3 Prepare reports 2b.1.4 Bituminous roof replacement 2b.1.5 Maintenance supplies 2																						
2b.1.3     Prepare reports       2b.1.4     Bituminous roof replacement     -     -     -     3,489     523     4,013     - <td></td>																						
2b.1.4 Bituminous roof replacement 3,489 523 4,013 4,013											a											
2b.1.5 Maintenance supplies		Bituminous roof replacement	-	-	-	-	-	-	3,489	523	4,013	4,013	=	-	-	-	-	-	-	-	-	-
2b.1 Subtotal Period 2b Activity Costs	2b.1.5	Maintenance supplies	-	-	-	-	-	-	5,471	1,368	6,839	6,839	-	-	-	-	-	-	-	-	-	-
	2b.1	Subtotal Period 2b Activity Costs	-	-	-	-	-	-	8,960	1,891	10,851	10,851	-	-	-	-	-	-	-	-	-	-

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Table H-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

Marche   Carlo   Car								(Th	ousanas o	f 2020 Dollar	s)											
Profession   Pro							Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Section			Decon				Processing	Disposal				Lic. Term.	Management	Restoration	Volume		Class B	Class C	GTCC	Processed		Contractor
Section   Sect	Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Section   Sect	Period 2b C	Collateral Costs																				
Mary Bank Park Bank Clause Property   1968   1968   1969			-	-	-	-	-			2,733				-	-	-	-	-	-	-	-	-
Part			-	-	-	-	-	-						-	-	-	-	-	-	-	-	-
Martine   1	2b.3	Subtotal Period 2b Collateral Costs	-	-	-	-	-	-	67,188	2,733	69,921	-	69,921	-	-	-	-	-	-	-	-	-
Section   Sect																						
Section   Sect			-	-	-	-	-						-	-	-	-	-	-	-	-	-	-
Section   Part   Section   Part   P			-	4.459	-	-	-						-	=	-	-	-	-	-	-	-	-
Section of the sect			-		80		-						-	-	-	4 049		-	-	80 989	132	-
10.1   10.2			-	-	-	-	-		6,356			7,309		-	-		-	-	-	-	-	-
10.1   10.2			-	-	-	-	-	-				8,886		-	-	-	-	-	-	-	-	-
18-10   18-1			-	-	-	-	-	-				-		-	-	-	-	-	-	-	-	-
Marine   M			-	-	-	-	-	-						=	-	-	-	-	-	-	-	-
March   Marc			-	-	-	-	-	-						-	-	-	-	-	-	-	-	-
1.   1.   1.   1.   1.   1.   1.   1.			-	-	-	-	-	-					98,145	-	-	-	-	-	-	-	-	1,467,751
Property			-	-	-	-	-	-						-	-	-	-	-	-	-		815,417
Profest   Prof	2b.4	Subtotal Period 2b Period-Dependent Costs	-	4,453	80	33	-	334	352,234	45,450	402,583	275,815	126,768	-	-	4,049	-	-	-	80,989	132	2,283,168
Part	2b.0	TOTAL PERIOD 2b COST	-	4,453	80	33	-	334	428,382	50,074	483,356	286,666	196,689	-	-	4,049	-	-	-	80,989	132	2,283,168
1	PERIOD 2	c - SAFSTOR Dormancy without Spent Fuel Storage																				
1	Period 2c D	Direct Decommissioning Activities																				
Proper spect   Prop											a											
Second Process Conference of											a											
Second   Second Secon									010	105		1050										
Storage Provide Scheroly Ground Control   Storage Provide Scherol   Storage Provide			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	-
2.6.1   Insurance			-	-	-	-	-			495			-	-	-	-	-	-	-	-	-	-
2.6.1   Insurance	Period 2c P	eriod-Dependent Costs																				
Realth physics supplies	2c.4.1 I	Insurance	-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	-
2.4.4   Dayson for DAM genomented   20   8   31   23   132   132   1.92   985   18708   32   1.9108   32   2.4.5   Part Repring Magnet   2.4.5   Part Reprin			-			-	-	-						-	-	-	-	-	-	-	-	-
Part enemy budget	2c.4.3 I	Health physics supplies	-			- 9	-	- 81						-	-		-	-	-	19 708	- 29	-
2.4.6   NRC Fees			-		-	-	-							-	-			-	-	13,700	- 32	-
2.4.8   Railroad Track Maintenance	2c.4.6	NRC Fees	-	-	-	_	-	-		202			-	-	-	-	-	-	-	-	-	-
2.4 9   Inligy Saff Code			-		-	-	-							-	-		-	-	-	-		-
2.4 Subtoil Period 2 Period 3 Period 4 Period 3 Period 4 Period 3 Period 3 Period 4 Period 3 Period 4 Period 3 Period 4 Period 3 Period 3 Period 4 Period 3 Period 3 Period 4 Period 4			-	-	-	-	-	-						-			-	-	-	-	-	- 05 040
Perior   P			-	1 105	20	- 8	-	- 81						-					-	19 708	32	
Perior   P																						
Period     Period     Period     Period     Period   Pe			-											-	-		-	-	-			
Period 3   Direct Decommissioning Activities			-	6,174	111	45	-	462	599,238	73,670	679,701	397,732	281,969	-	-	5,611	-	-	-	112,220	183	2,855,510
3a.1.1   Pepar peliminary decommissioning cost   71   11   82   82																						
Sal   2   2   2   2   2   2   2   2   2									F-1	4.4	00	00										p = .
3a.1.3       Perform detailed rad survey       a			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	
Sal.1   End product description									200	90		201										1,001
3a.1.6       Define major work sequence	3a.1.4 I	End product description	-	-	-	-	-	-			63		-	-	-	-	-	-	-	-	-	428
3a.1.7       Perform SER and EA			-	-	-	-	-	-						-	-	-	-	-	-	-	-	556
3a.1.8       Prepare/submit Defueled Technical Specifications			-	-	-	-	-	-						-	-	-	-	-	-	-	-	
3a.1.9       Perform Site-Specific Cost Study 3a.1.10       -       -       275       41       316       316       -       -       -       -       2,138         3a.1.10       Prepare/submit Irradiated Fuel Management Plan       -       -       55       8       63       63       -       -       -       -       428         Activity Specifications         3a.1.11.1       Re-activate plant & temporary facilities       -       -       405       61       466       419       -       47       -       -       3,151         3a.1.11.2       Plant systems       -       -       229       34       263       237       -       -       -       1,782         3a.1.11.3       Reactor internals       -       -       390       59       449       -       -       -       -       3,036         3a.1.11.4       Reactor vessel       -       -       357       54       411       411       -       -       -       -       2,775			-		-		-							-		-	-	-	-	-		
3a.1.10     Prepare/submit Irradiated Fuel Management Plan     55     8     63     63	3a.1.9 I	Perform Site-Specific Cost Study	-	-			-		275					-		-	-	-	-	-		2,138
3a.1.11.1     Re-activate plant & temporary facilities     -     -     405     61     466     419     -     47     -     -     -     3,151       3a.1.11.2     Plant systems     -     -     -     229     34     263     237     -     26     -     -     -     -     1,788       3a.1.11.3     Reactor internals     -     -     -     390     59     449     -     -     -     -     -     -     3,036       3a.1.11.4     Reactor vessel     -     -     -     357     54     411     411     -<	3a.1.10 I	Prepare/submit Irradiated Fuel Management Plan	-	-	-	-	-	-						-	-	-	-	-	-	-	-	428
3a.1.1.1.2 Plant systems									405	A-	100	4**										0
3a.1.11.3     Reactor internals     -     -     -     390     59     449     -     -     -     -     -     -     3,036       3a.1.11.4     Reactor vessel     -			-	-	-	-	-	-								-	-	-	-	-	-	
3a.1.11.4 Reactor vessel			-	-	-												-	-	-	-	-	
3a.1.11.5 Biological shield 27 27 4 32 32			-	-	-		-	-	357					-	-	-	-	-	-	-	-	2,779
	3a.1.11.5 I	Biological shield	-	-	-	-	-	-	27	4	32	32	-	-	-	-	-	-	-	-	-	214

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Table H-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(111	ousunus c	oi 2020 Dollar	3)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial/		Utility and
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
Activity S	pecifications (continued)																				
	Steam generators	-	-	-	-	-	-	171	26	197	197	-	-	-	-	-	-	-	-	-	1,334
	Reinforced concrete	-	-	-	-	-	-	88	13		51	-	51	-	-	-	-	-	-	-	684
	Main Turbine Main Condensers	-	-	-	-	-	-	22 22	3	25 25	-	-	25 25	-	-	-	-	-	-	-	171 171
	Plant structures & buildings	-	-	-	-	-	-	171	26	197	99	-	99	-	-		-	-	-	-	1,334
	Waste management	-	-	-	-	-	-	253	38	291	291	-	-	-	-	-	-	-	-	-	1,967
	Facility & site closeout	-	-	-	-	-	-	49	7	57	28	-	28	-	-	-	-	-	-	-	385
3a.1.11	Total	-	-	-	-	-	-	2,186	328	2,514	2,213	-	301	-	-	-	-	-	-	-	17,009
	& Site Preparations																				
	Prepare dismantling sequence	-	-	-	-	-	-	132	20	152	152	-	-	-	-	-	-	-	-	-	1,026
3a.1.13 3a.1.14	Plant prep. & temp. svces Design water clean-up system	-	-	-	-	-	-	3,500 77	525 12	4,025 88	4,025 88	-	-	-	-	-	-	-	-	-	599
3a.1.15	Rigging/Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,400	360	2,760	2,760	-	-	-	-	-	-	-	-	-	-
3a.1.16	Procure casks/liners & containers	-	-	-	-	-	-	68	10	78	78	-	-	-	-	-	-	-	-	-	526
3a.1	Subtotal Period 3a Activity Costs	-	-	-	-	-	-	10,137	1,521	11,658	11,357	-	301	-	-	-	-	-	-	-	32,971
Period 3a	Additional Costs																				
3a.2.1	Site Characterization	-	-	-	-	-	-	1,505	451	1,956	1,956	-	-	-	-	-	-	-	-	8,988	
3a.2.2	Mixed/Hazardous Waste	-		353				-	76	702	702	-	-	6,132		-	-	-	351,977	2,348	
3a.2.3 3a.2	Asbestos Abatement Subtotal Period 3a Additional Costs	-	2,526 2,526				1,369 1,369	1,505	996 1,524	5,044 7,702	5,044 7,702	-	-	6,132	12,843 12,843		-	-	166,959 518,936	20,907 32,243	
			2,020	550	211	110	1,000	1,000	1,024	1,102	1,102			0,102	12,040				010,000	02,240	5,000
Period 3a 3a.3.1	Collateral Costs Small tool allowance		34						5	39	39										
3a.3.1	Subtotal Period 3a Collateral Costs	-	34		-	-	-	-	5		39	-	-	-	-		-	-	-	-	-
Pariod 3a	Period-Dependent Costs																				
3a.4.1	Insurance	-	-	_	-	_	-	279	28	307	307	-	_	_	_	-	-	_	_	_	-
3a.4.2	Property taxes	-	-	-	-	-	-	2,249	225	2,474	2,474	-	-	-	-	-	-	-	-	-	-
3a.4.3	Health physics supplies	-	641		-	-	-	-	160	802	802	-	-	-	-	-	-	-	-	-	-
3a.4.4	Heavy equipment rental	=	753			-	-	-	113	866	866	-	-	-	-	-	-	-	-	-	-
3a.4.5	Disposal of DAW generated	<u> </u>	-	10	4	-	40	1,621	11 243	64 1,864	64 1,864	-	-	-	481	-	-	-	9,613	16	-
3a.4.6 3a.4.7	Plant energy budget NRC Fees	-	-	-	-	-	-	260	245	286	286	-	-	-	-	-	-	-	-	-	-
3a.4.8	Fixed Overhead	-	-	-	-	_	-	1,440	216	1,656	1,656	-	_	-	-	_	_	-	-	-	-
3a.4.9	Railroad Track Maintenance	-	-	-	-	-	-	63	9	72	72	-	-	-	-	-	-	-	-	-	-
3a.4.10	Security Staff Cost	-	-	-	-	-	-	368	55	424	424	-	-	-	-	-	-	-	-	-	6,240
3a.4.11 3a.4	Utility Staff Cost Subtotal Period 3a Period-Dependent Costs	-	1,394	10	- 4	-	40	12,056 18,336	1,808 2,896	13,864 22,679	13,864 22,679	-	-	-	481	-		-	9,613	16	199,680 205,920
3a.0	TOTAL PERIOD 3a COST		3,954	366				29,979	5,946	42,079	41,778		301	6,132					528,549	32,259	,
		-	5,954	900	240	170	1,409	29,979	5,946	42,079	41,776	-	301	6,132	15,524	-	-	-	920,949	32,298	242,454
PERIOD	3b - Decommissioning Preparations																				
Period 3b	Direct Decommissioning Activities																				
	Vork Procedures																				
	Plant systems	-	-	-	-	-	-	260	39	299	269	-	30	-	-	-	-	-	-	-	2,024
	Reactor internals	-	-	-	-	-	-	137 74	21	158	158	-	64	-	-	-	-	-	-	-	1,069 577
	Remaining buildings CRD cooling assembly	-	-	-	-	-	-	74 55	11 8	85 63	21 63	-	64	-	-	-	-	-	-	-	428
	CRD cooling assembly CRD housings & ICI tubes	-	-	-	-	-	-	55 55	8	63	63	-	-	-	-	-	-		-		428
3b.1.1.6	Incore instrumentation	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
	Reactor vessel	-	-	-	-	-	-	199	30	229	229	-	-	-	-	-	-	-	-	-	1,552
	Facility closeout	-	-	-	-	-	-	66	10	76	38	-	38	-	-	-	-	-	-	-	513
	Missile shields Biological shield	-	-	-	-	-	-	25 66	4 10	28 76	28 76	-	-	-	-	-	-	-	-	-	192 513
	Steam generators	-	-	-	-	-	-	253	38	291	291	-	-	-	-	-	-	-	-	-	1,967
	Reinforced concrete	-	-	-	-	-	-	55	8	63	32	-	32	-	-	-	-	-	-	-	428
	Main Turbine	-	-	-	-	-	-	86	13	99	-	-	99	-	-	-	-	-	-	-	667
	Main Condensers	-	-	-	-	-	-	86	13		-	-	99	-	-	-	-	-	-	-	667
	Auxiliary building	-	-	-	-	-	-	150	23	173	155	-	17	-	-	-	-	-	-	-	1,167
	Reactor building	-	-	-	-	-	-	150 1,772	23	173	155	-	17	-	-	-	-	-	-	-	1,167 13,787
3b.1.1 3b.1	Total Subtotal Period 3b Activity Costs	-	-	-	-	-	-	1,772	266 266	2,038 2,038	1,643 1,643	-	395 395	-	-	-	-	-	-	-	13,787
55.1	Daniolar I criod on richting Cooks	-	-	-	-	-		1,112	200	2,000	1,040	-	555	-	_	-		,	-	-	10,101

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Table H-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

Mary							(1110	ousanus (	oi 2020 Dollar	5)											
Selection (1964)	A 11	D	D1	D. J. dan	T			0:1	m 1	m 1					Cl A			OTTO C		G 6	
1																					
2   Mart Aller A	Period 3b Collateral Costs																				
3   Per compromense   1,00		1,058		-	-	-						-	-	-	-	-	-	-	-	-	-
Selection Part of College   150					-	-	-	1,264				-	-	-	-	-	-	-	-	-	-
1	3b.3.3 Pipe cutting equipment 3b.3 Subtotal Period 3b Collateral Costs				-	-	-	1,264				-	-	-	-	-	-	-	-	-	-
	Pariod 2h Pariod Danandant Casts																				
3   Service		38	3 -	-	_	-	-	_	9	47	47	-	-	-	-	-	-	-	-	_	-
Many		-	-	-	-	-	-	241	24			-	-	-	-	-	-	-	-	-	-
Second   S		-	-	-	-	-	-	1,019				-	-	-	-	-	-	-	-	-	-
10		-			-	-	-					-	-	-	-	-	-	-	-	-	-
15   Marting State		-	375		- 9	-	- 99					-	-	-	264	-	-	-	5 286	- 0	-
18   18   18   18   18   18   18   18		-	-	-		-	-					-	-	-	-	-	-	-	5,200	-	-
10		-	_	-	-	-	-					-	-	-	-	-	-	-	-	-	-
11   11   12   13   14   15   15   15   15   15   15   15		-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	-
12   10   10   10   10   10   10   10		-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	-
1.0		=	-	-	-	=	-					-	=	-	-	-	-	-	-	-	
September   Sept			-	-	-	-	-					-	-	-	-	-	-	-	-	-	
NO 1 TOTALS 1,02 5,86 5,7 26 1,78 1,80 4,88 5,7 1 6,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1		38	8 649	5	2	-	22					-	-	-	264	-	-	-	5,286	9	
## State   Part   Part	3b.0 TOTAL PERIOD 3b COST	1,095	2 1,849	5	2	-	22	15,906	2,795	21,672	21,277	-	395	-	264	-	-	-	5,286	9	158,98
Here Secure Supply System Removal  Free Stand Proper	PERIOD 3 TOTALS	1,095	2 5,803	371	250	178	1,430	45,885	8,741	63,751	63,054	-	696	6,132	13,588	-	-	-	533,835	32,267	401,44
Second	PERIOD 4a - Large Component Removal																				
1.1   Research Color Piping	Period 4a Direct Decommissioning Activities																				
1.1   Research Color Piping	Juclear Steam Supply System Removal																				
1.1.1   Pessarizer Falled Fanole   1.1.2   Pessarizer Falled Fanole   1.1.3   Pessarizer Falled Fanole   1.1.4   Pessarizer Falled Fanole   1.1.4   Pessarizer Falled Fanole   1.1.4   Pessarizer Falled Fanole   1.1.4   Pessarizer Fanole   1.1.4   Pessar	a.1.1.1 Reactor Coolant Piping	1:	1 42	10	11	66	94		52	285	285	-	-	240	254	_	-	-	33,680	778	-
1.1.   Semanter			5 19	6	7			-		174		-	-	160	169		-	-		352	
1.1.5   Standarderators   3.307   1.00		13										-	-	-			-				
1.1.6   CRDbs/FCH/Service Structure Removal   63   218   205   44   328   451   - 283   1,623   1,623   1,623   - 2,138   2,146   - 165,025   4,449   - 17.74   76.00   - 1,177   76.00   - 1,		-										-	-	10.070			-				
1.1.   Reserve Vessel Internals   1.2.   Austernals (TCD Elposel   1.2.   1.2.   4.5.   4.5.   1.2.   4.5.   1.2.   4.5.   1.2.   4.5.   1.2.   4.5.   1.2.   4.5.   1.2.   4.5.   1.2.   4.5.   1.2.   4.5.   1.2.   4.5.   1.2.   4.5.   1.2.   4.5.   1.2.   4.5.   1.2.   4.5.   1.2.   4.5.   1.2.   4.5.   1.2.   4.5		6										-	-				_				
1.1.8													-	2,100			673				
1.1   Totals		-	-	-	-	-		-				-	-	-	-		-			-	-
And The Concretor of Major Equipment  1.2 Main Turbine Concretor of 292 116 35 555 173 1,170 1,170 2,243 134,601 4,116 1,30 Main Turbine Concretor of 2,501 7,9 33 7,42 752 4,115 4,115 4,000 180,000 34,978 1,170		-				-						-	-	-			-	-			
12 Main Turbine/Generator   292   116   35   555   173   1,170   1,170   2,248   134,601   4,116   3,180   34,78   3,180   34,78   3,180   34,78   3,180   34,78   3,180   34,78   3,180   34,78   3,180   34,78   3,180   34,78   3,180   34,78   3,180   34,78   3,180   34,78   3,180   34,78   3,180   34,78   3,180   34,78   3,180   34,78   3,180   34,78   3,180   34,78   3,180   3,180   34,78   34,78   3	a.1.1 Totals	144	14,237	15,343	3,284	2,845	25,531	556	21,785	83,725	83,725	-	-	21,210	28,505	-	673	1,773	3,347,810	63,151	5,18
1.8   Main Condensers   2.510   79   33   742   752   4.115   4.115   4.115   4.105   4.000   180,000   34,978	emoval of Major Equipment													0.040							
L4.1 Reactor 79												-	=		-	-	-	-			
1.4.1   Reactor		•	2,810	19	99	142	-	-	192	4,115	4,115	-	-	4,000	-	-	-	-	180,000	54,976	-
1.4.2   Auxiliary   221			50.4						110	010	010									<b>= =</b> 00	
1.4.3 Radwaste     9     -     1 1 10 10 10     -     -     65 -       1.4 Totals     1,023     -     -     154 1,177     1,177     -     -     8,665       1.5.4 Totals     1,023     -     -     1,54 1,177     1,177     -     -     8,665       1.5.2 Air Removal     -     -     -     1 7 7     7 7     7 7     -     -     402       1.5.3 Auxiliary Feedwater     -     -     -     -     7 7     53     -     -     -     -     402       1.5.4 Auxiliary Feedwater - RCA     38     0 1 30     14 84 84 84     178     -		-			-	-	-	-				-	-	-	-	-	-	-	-		
1.4   Totals   1.02		-			-	-	-					-	-	-	-	-	-	-			
1.5.1   Admin Bldg Ventilation			1,023		-	-	-					-	-	-	-	-	-	-	-		
1.5.1   Admin Bldg Ventilation	isposal of Plant Systems																				
1.5.4   Auxiliary Feedwater   1.5.4   Auxiliary Feedwater   1.5.4   Auxiliary Feedwater   1.5.4   Auxiliary Feedwater   1.5.5   Red Steam   1.5.		=	6	-	-	-	-	-	1	7	-	-	7	-	-	-	-	-	-	90	-
1.5.4   Auxiliary Feedwater - RCA	a.1.5.2 Air Removal	-			-	-	-	-	-		-	-		-	-	-	-	-	-		
1.5.5   Bleed Steam		-				-	-	-	•			-	53	-	-	-	-	-	-		
1.5.6       Caustic Addition - RCA       40       0       2       40       16       99       99       - 240       - 9,761       468       - 1.5.7       Chemical Feed       - 20       - 20       261       261       261       261       261       261       261       261       261       261       261       261		-			1	30	-	-		0.1		-	103	178	-	-	-	-	7,214		
1.5.7   Chemical Feed   1.5.8   Chemical Feed - RCA   3   0   0   3   1   7   7   7   1   16   16   16   17   15   17   17   17   18   18   18   18   18		-			9.	40	-	-				-	105	240	-	-	-	-	9.761		-
1.5.8 Chemical Feed - RCA     3     0     0     3     -     1     7     7     -     16     -     634     31     -       1.5.9 Circulating Water     27     -     -     -     4     32     -     32     -     -     401     -       1.5.10 Condensate     -     525     -     -     -     79     603     -     603     -     -     -     7,537     -       1.5.11 Condensate Polishing     208     -     -     -     31     239     -     239     -     -     -     2,987     -       1.5.12 Condensate Polishing - RCA     38     1     4     81     -     22     145     145     -     483     -     19,616     493       1.5.13 Electro-Hydraulic     10     -     -     -     1     11     -     -     1     -     -     1385     -       1.5.14 External Circulating Water     26     -     -     -     4     30     -     30     -     -     -     385     -		-				-	-	-		00		-	20	240	-	-	-	-	-		-
1.5.10     Condensate     525     -     -     -     79     603     -     -     603     -     -     -     7,537     -       1.5.1.5     Condensate Polishing     -     208     -     -     -     31     239     -     -     239     -     -     -     2,987     -       1.5.12     Condensate Polishing     -	.1.5.8 Chemical Feed - RCA	-	3	0	0	3	-	-	1		7	-	-	16	-	-	-	-	634	31	-
1.5.11     Condensate Polishing     208     -     -     31     239     -     -     239     -     -     -     2,987     -       1.5.12     Condensate Polishing - RCA     -     38     1     4     81     -     22     145     145     -     -     483     -     -     19,616     493     -       1.5.13     Electro-Hydraulic     -     10     -     -     -     1     11     -     -     11     -     -     -     -     143     -       1.5.14     External Circulating Water     26     -     -     -     4     30     -     -     30     -     -     -     385     -		-			-	-	-	-				-			-	-	-	-	-		-
L.5.12 Condensate Polishing - RCA - 38 1 4 81 - 22 145 145 - 483 19,616 493 - 1.5.13 Electro-Hydraulic - 10 1 11 11 143 - 1.5.14 External Circulating Water - 26 4 30 30 385 - 385	a.1.5.10 Condensate	-			-	-	-	-				-			-	-	-	-	-		-
1.5.13     Electro-Hydraulic     -     10     -     -     -     -     1     11     -     -     -     -     -     -     143     -       1.5.14     External Circulating Water     -     26     -     -     -     -     30     -     -     -     -     385     -		-			- 4	- 01	-	-				-	239		-	-	-	-	10.616		-
1.5.14 External Circulating Water - 26 4 30 30 385 -		-			4	- 81	-	-				-	- 11		-	-	-	-	19,616		-
	a.1.5.14 External Circulating Water		26	-	-	-	-	-			-	=			-	-	_	-	-		-
1.5.15 External Circulating Water - KUA - 72 1 5 121 37 237 721 29,284 938 -	4a.1.5.15 External Circulating Water - RCA	-	72		5	121	-	-	37	237	237	-	-	721	-	-	-	-	29,284	938	-

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Table H-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							` `		i 2020 Donais	,											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Volumes		Burial /		Utility and
Activit		Decon				Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Disposal	of Plant Systems (continued)																				
4a.1.5.10	3 Feedwater	-	127	-	-	-	-	-	19	146	-	-	146	-	-	-	-	-	-	1,840	-
	7 Feedwater - RCA	-	248	8	31	694	-	-	171	1,152	1,152	-	-	4,147	-	-	-	-	168,414	3,377	-
	8 Gland Seal 9 Heater Drain	=	34 384	-	-	-	-	-	5 58	39 441	-	-	39 441	-	-	-	-	-	-	504 5,638	-
	Hypobromous Acid Feed	-	6	-	-	-		-	1	7	-	-	7	-	-				-	5,636 86	-
	Hypobromous Acid Feed - RCA	-	1	0	0	0	-	-	0	2	2	-	-	2	-	-	-	-	100	12	-
4a.1.5.25	2 Internal Circ Water & CDSR	-	25	-	-	-	-	-	4	29	-	-	29	-	-	-		-	-	366	-
	3 Main Gen/Exciter/Transformer	-	0	-	-	-	-	-	0	0	-	-	0	-	-	-	-	-	-	5	-
	4 Main Steam 5 Main Steam - RCA	-	101 380	11	38	864	-	-	15 231	116 1,525	1,525	-	116	5,166	-	-		-	209,799	1,482 5,146	-
	Repairable Spare Snubbers	_	6	0	0	2	_	-	2	10	10	_	-	12	-	-	-	-	490	82	_
	7 Steam Exclusion	-	2	-	-	-	-	-	0	2	- 1	-	2	-	-	-		-	-	32	-
	Steam Exclusion - RCA	-	4	0	0	4	-	-	2	10	10	-	-	24	-	-	-	-	966	47	-
	9 Steam Generator Blowdown	-	378 5	21	27	319	215	-	202	1,162	1,162	-	- 6	1,906	631	-	-	-	118,130	5,179	-
	O Steam Generators Turbine & Moisture Separators	-	5 377	-	-	-	-	-	1 57	6 434	-	-	434	-	-	-	-	-	-	75 5,472	-
	2 Turbine & Moisture Separators 2 Turbine Oil Purification	-	53	-	-	-	-	-	8	61	-	-	61	-	-	-	-	-	-	757	-
4a.1.5.3	3 Water Treatment	-	453	-	-	-	-	-	68	521	-	-	521	-	-	-	-	-	-	6,677	-
	Water Treatment - RCA	-	20	0	1	19	-	-	8	49	49	-	-	115	-	-	-	-	4,652	252	-
4a.1.5	Totals	-	3,779	43	108	2,177	215	-	1,091	7,413	4,480	-	2,933	13,010	631	-	-	-	569,060	53,681	-
4a.1.6	Scaffolding in support of decommissioning	-	2,865	22	10	188	30	_	755	3,870	3,870	-	-	1,012	89	-	_	-	51,216	23,719	<u>-</u>
4a.1	Subtotal Period 4a Activity Costs	144	24,706	15,603	3,470	6,506	25,776	556	24,709	101,471	98,537	-	2,933	41,476	29,226	-	673	1,773	4,282,686	188,606	5,187
Period 4	a Additional Costs																				
4a.2.1	Retired RPV Upper Internals Package	-	128	166	58	-	1,583	-	944	2,879	2,879	-	-	-	572	125		-	49,800	1,667	67
4a.2	Subtotal Period 4a Additional Costs	-	128	166	58	-	1,583	-	944	2,879	2,879	-	-	-	572	125	-	-	49,800	1,667	67
Dowied 4	a Collateral Costs																				
4a.3.1	Process decommissioning water waste	3	_	4	8	_	17	_	7	39	39	_	_	-	40		_	_	2,408	8	-
4a.3.3	Small tool allowance	-	241		-	-	-	-	36	277	249	-	28	-	-	-	-	-	-,		-
4a.3	Subtotal Period 4a Collateral Costs	3	241	4	8	-	17	-	43	316	288	-	28	-	40	-	-	-	2,408	8	-
Period 4	a Period-Dependent Costs																				
4a.4.1	Decon supplies	100	-	-	-	-	-	-	25	125	125	-	-	-	-	-	-	-	-	-	-
4a.4.2	Insurance	-	-	-	-	-	-	643	64	708	708	-	-	-	-	-		-	-	-	-
4a.4.3	Property taxes	-	-	-	-	-	-	2,668	267	2,935	2,935	-	-	-	-	-	-	-	-	-	-
4a.4.4 4a.4.5	Health physics supplies Heavy equipment rental	-	1,881 3,325	-	-	-	-	-	470 499	2,351 3,824	2,351 3,824	-	-	-	-	-	-	-	-	-	-
4a.4.6	Disposal of DAW generated	-	3,323	70	29	-	293	-	85	477	477	-	-	-	3,554	-		-	71,089	116	-
4a.4.7	Plant energy budget	-	-	-	-	-	-	2,047	307	2,354	2,354	-	-	-	-	-	-	-	-	- 1	-
4a.4.8	NRC Fees	-	-	-	-	-	-	420	42	461	461	-	-	-	-	-	-	-	-	-	-
4a.4.9	Fixed Overhead	-	-	-	-	-	-	1,581 565	237 85	1,818 649	1,818 649	-	-	-	-	-	-	-	-	-	-
4a.4.10 4a.4.11	Liquid Radwaste Processing Equipment/Services Railroad Track Maintenance	-	-	-	-	-	-	565 83	85 12	649 96	649 96	-	-		-	-	-	-	-		-
4a.4.11	Remedial Actions Surveys	-	-	-	-	-	-	1,489	223	1,712	1,712	-	-	-	-	-	-	-	-	-	-
4a.4.13	Security Staff Cost	-	-	-	-	-	-	4,486	673	5,159	5,159	-	=	-	-	-	-	-	-	-	67,000
4a.4.14	DOC Staff Cost	ē	-	-	-	-	-	17,103	2,565	19,668	19,668	-	Ē	-	-	-	-	-	-	-	189,200
4a.4.15 4a.4	Utility Staff Cost Subtotal Period 4a Period-Dependent Costs	100	5,206	70	29	-	293	21,194 52,278	3,179 8,734	24,374 66,709	24,374 66,709	-	-	-	3,554	-	-	-	71,089	116	335,701 591,901
ти.ч		100	5,200		20	-	200	52,210	0,104		50,105	-	-	•	5,554	-	-	-			
4a.0	TOTAL PERIOD 4a COST	246	30,281	15,844	3,564	6,506	27,669	52,834	34,430	171,375	168,414	-	2,961	41,476	33,393	125	673	1,773	4,405,984	190,397	597,154
PERIO	D 4b - Site Decontamination																				
Period 4 4b.1.1	b Direct Decommissioning Activities Remove spent fuel racks	314	35	86	41	-	703	-	356	1,535	1,535	-	-	-	2,092	-	-	-	132,919	576	-
Disnoso	of Plant Systems																				
	ADT & Misc Ventilation	_	22	1	1	26	3	-	10	63	63	-	_	153	9	-	-	-	6,803	325	-
4b.1.2.2	Aux Bldg Normal Ventilation	-	62	2	6	116	13	-	37	237	237	-	-	692	39	-	-	-	30,595	906	-
4b.1.2.3		-	12	0	1	12	2	-	5	32	32	-	-	70	6	-	-	-	3,234	176	-
4b.1.2.4		-	2	-	-	-	-	-	0	2	- 9	-	2	- ^	- ^	-	-	-	-	24	-
4b.1.2.5	Boron Recycle Chemical & Volume Control	-	3 858	0 62	0 57	0 394	3 677	-	2 458	9 2,507	9 2,507	-	=	3 2,356	9 1,977	-	-	-	700 223,753	45 11,575	-
	Cold Chemical Lab Ventilation	-	898	- 62	- -	594 -	- 011	-	458	2,807 1	2,80 <i>1</i>	-	1	کرونور -	1,977	-	-	-	440,100	11,575	-
		-	1	-	-	-	-	_	Ü	1	-	-	1	-	-	-	-	-	_	3	-

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Table H-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(1ne	ousanas o	of 2020 Dollars	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity		Decon	Removal	Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Disposal of Plant Sys	stems (continued)																				
4b.1.2.8 Componen		-	647	25	88	2,007	-	-	479	3,246	3,246	-	-	11,996	-	-	-	-	487,169	8,583	-
4b.1.2.9 Containme		-	35	- 0	20	459	-	-	5	40 934	934	-	40	2,743	-	-	-	-	- 111 000	502	-
4b.1.2.10 Containme	ent Cooling - KCA ent Hydrogen Control - RCA	-	302 36	6	20	459 24	-	-	148 13	934 74	934 74	-	-	2,743	-	-	-	-	111,390 5,742	3,949 494	-
4b.1.2.12 Containme		-	194	3	11	243	-	-	87	538	538	-	-	1,453	-	-	-	-	59,019	2,617	-
4b.1.2.13 Containme		-	211	23	49	790	243	-	242	1,558	1,558	-	-	4,721	722	-	-	-	237,643	3,016	-
4b.1.2.14 Control/Re 4b.1.2.15 Cooling W		-	28 159	1	2	44	7	-	16 24	98 183	98	-	183	260	20	-	-	-	11,878	406 2,344	-
4b.1.2.16 Cooling W		-	476	17	62	1,412	-	-	342	2,310	2,310	-	-	8,442	-			-	342,822	6,311	-
4b.1.2.17 Cranes/Ho	oists/Elevators - RCA	-	3	0	1	17	-	-	4	25	25	-	-	103	-	-	-	-	4,184	48	-
4b.1.2.18 D3 Emerge		-	10		-	-	-	-	2	12	-	-	12	-	-	-	-	-	-	141	-
4b.1.2.19 D4 Emerge 4b.1.2.20 D5 Emerge		-	10	-	-	-	-	-	2	12	-	-	12	-	-	-	-	-	-	141 5	-
4b.1.2.21 Electrical		-	1,714	-	-	-	-	-	257	1,972	-	-	1,972	-	-		-	-	-	24,276	-
4b.1.2.22 Electrical		-	430	5	16	334	25	-	167	978	978	-	-	1,997	75	-	-	-	85,887	5,813	-
	- Contaminated - Fuel Pool	-	184	2	7	145	11	-	72	421	421	-	-	864	33	-	-	-	37,167	2,488	-
4b.1.2.24 Electrical	- Decontaminated - Decontaminated - Fuel Pool	-	2,955 1,269	38 17	138 59	3,138 1,350	-	-	1,234 530	7,503 3,225	7,503 3,225	-	-	18,753 8,069	-	-	-	-	761,569 327,668	38,423 16,495	-
4b.1.2.26 Filter Rm			1,203	0	0	1,350	- 0	-	2	10	10	-	-	24	1		-	-	1,017	61	-
4b.1.2.27 Fire Prote		-	204	-	-	-	-	-	31	235	-	-	235	-	-	-	-	-	-,	3,009	-
	ection & Detection - RCA	-	246	4	13	306	-	-	110	679	679	-	-	1,828	-	-	-	-	74,245	3,134	-
	ection & Detection - RCA Fuel P	-	37	1	2	48	- 17	-	17	105	105	-	-	286	49	-	-	-	11,622	476	-
4b.1.2.30 Fuel Hand 4b.1.2.31 Fuel Oil	aing	-	66 1	1	2	34	17	-	26 0	146	146	-	1	200	49		-	-	11,273	983	-
4b.1.2.32 HVAC - Cl	lean	-	151	-	-	-	-	-	23	174	-	-	174	-	-	-	-	-	-	2,373	-
4b.1.2.33 HVAC - Co		-	1,112		87	1,798	136	-	598	3,759	3,759	-	-	10,745	405	-	-	-	462,103	14,282	-
	ontaminated - Fuel Pool	-	499	13	39	808	61	-	268	1,689	1,689	-	-	4,828	182	-	-	-	207,612	6,417	-
4b.1.2.35 Heating 4b.1.2.36 Heating	RCA	-	322 337	- 4	14	319	-	-	48 135	370 809	809	-	370	1,907	-	-	-	-	77,458	4,804 4,086	-
	Sample Rm Ventilation	-	17	0	1	18	1		8	46	46	-	-	107	4		-	-	4,622	255	-
4b.1.2.38 Incore Inst	strumentation	-	27	1	2	10	20	-	13	73	73	-	-	60			-	-	6,143	412	-
4b.1.2.39 Misc Drain		-	213		12	77	145	-	104	563	563	-	-	458			-	-	46,079	2,841	-
4b.1.2.40 Misc Lab & 4b.1.2.41 Miscellane		-	118 72		8	62	84	-	62 11	342 83	342	-	83	370	244	-	-	-	30,899	1,537 1,073	-
4b.1.2.42 Miscellane		-	134	1	4	100	-		49	289	289	-	-	600	-			-	24,378	1,636	-
4b.1.2.43 Radiation	Monitoring	-	7	-	-	-	-	-	1	9	-	-	9	-	-	-	-	-	· -	111	-
4b.1.2.44 Radiation		-	65	1	2	53	-	-	25	145	145	-	-	316		-	-	-	12,826	782	-
4b.1.2.45 Reactor Co 4b.1.2.46 Reactor Ho		•	216 116	20 11	16	38 9	249 108	-	126 60	666 311	666 311	-	-	229 54	730 312	-	-	-	56,440 22,678	2,891 1,499	-
4b.1.2.47 Reactor M		-	41	-	- '	-	-	-	6	47	-	-	47	-			-	-	-	583	-
4b.1.2.48 Reactor M	Iakeup - RCA	-	4	0	0	5	-	-	2	11	11	-	-	28	-	-	-	-	1,148	47	-
4b.1.2.49 Reactor Ve		-	16	1	0	4	5	-	6	32	32	-	-	22	14		-	-	1,816	225	-
4b.1.2.50 Residual F 4b.1.2.51 Safeguard		•	354 5	84	86	477	1,102	-	457 1	2,562 6	2,562	-	- 6	2,853	3,244	-	-	-	324,232	5,039 75	-
	ls Chilled Water - RCA	-	5	0	0	4	-		2	11	11	-	-	26	-		-	-	1,045	51	-
4b.1.2.53 Safety Inje	ection	-	793	42	72	1,117	395	-	479	2,898	2,898	-	-	6,676		-	-	-	345,708	11,029	-
4b.1.2.54 Sampling		-	48	3	2	6	32	-	22	113	113	-	-	37	93	-	-	-	7,628	645	-
4b.1.2.55 Service Blo 4b.1.2.56 Shield Bld	ldg & New Cmptr Vent	-	0 108	13	25	339	163	-	0 124	0 771	771	-	0	2,028	484	-	-	-	113,139	6 1,555	-
4b.1.2.56 Shield Bid 4b.1.2.57 Spent Fue		-	33	3	25	339 6	37	-	124	101	101	-	-	2,028	484 107		-	-	8,481	1,555	-
	el Pool Normal Ventilation	-	24	1	2	44	4	-	14	90	90	-	-	265	12		-	-	11,505	352	-
4b.1.2.59 Station &		-	161			-	-	-	24	185	-	-	185	-	-	-	-	-	-	2,424	-
4b.1.2.60 Station & 4b.1.2.61 Turbine B	Instrument Air - RCA	-	299 30	3	12	272	-	-	118 5	704 35	704	-	- 35	1,625	-	-	-	-	65,986	3,638 462	-
	Bldg Traps & Drains Bldg Traps & Drains - RCA	-	30	- 0	1	30	-	-	5 12	39 73	73	-	- -	180	-	-	-	-	7,321	462 344	-
4b.1.2.63 Turbine B	Bldg Ventilation	-	46	-	-	-	-	-	7	53	-	-	53	-	-	-	-	-	-,021	655	-
4b.1.2.64 Unit Coole	ers	-	23		-	-	-	-	3	26		-	26	-	-	-	-	-	-	332	-
4b.1.2.65 Unit Coole		-	56	0	2	39	-	-	20	117	117	-	-	232	1.050	-	-	-	9,413	690	-
4b.1.2.66 Waste Gas 4b.1.2.67 Waste Liq		-	438 1,642	43 116	45 100	410 612	464 1,234	-	298 837	1,699 4,541	1,699 4,541	-	-	2,453 3,655	1,358 3,594	-	-	-	187,339 381,754	5,879 22,011	-
4b.1.2.68 Waste Soli		- -	132	12	11	65	134	-	79	433	433	-	-	389	393		-	-	41,177	1,781	-
4b.1.2 Totals	-	-	17,877	633	1,092	17,625	5,377	-	8,385	50,989	47,545	-	3,444	105,339	15,761	-	-	-	5,294,310	240,033	-
4b.1.3 Scaffolding	g in support of decommissioning	-	4,297	33	15	281	45	-	1,133	5,804	5,804	-	-	1,518	134	-	-	-	76,824	35,578	-

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Table H-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(1110	ousanus o	f 2020 Dollars	5)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity		Decon	Removal	Packaging	Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Dogontos	nination of Site Buildings																				
	Reactor	1,096	2,528	240	1,236	373	7,080	-	3,215	15,768	15,768	_	-	2,230	67,331	_	_	_	3,286,725	45,740	-
4b.1.4.2	Auxiliary	1,168	375	23	117	177	648	-	886	3,395	3,395	-	-	1,060	6,118	-	-	-	332,495	21,235	-
4b.1.4.3	Backwash Waste Receiving Tank	-	25	3	17	-	97	-	33	175	175	-	-	-	929	-	-	-	43,896	266	-
4b.1.4.4	Drum Transfer & Truck Loading Enclosure	16	8	1	3	3	14	-	15	59	59	-	-	19	135	-	-	-	7,118	328	-
4b.1.4.5 4b.1.4.6	LLRW Storage Enclosure Radwaste	111 50	48 21	3	17 8	6 7	96 43	-	95 43	377 174	377 174	-	=	38 42	920 412	-	-	-	44,971 21,136	2,151 964	-
4b.1.4.6 4b.1.4.7	Resin Disposal	15	11	1	8	14	43 14	-	43 16	72	72	-	-	42 83	124		-	-	9,271	340	-
4b.1.4.8	Fuel Handling of Aux Building	924	1,015	13	45	404	195	-	833	3,430	3,430	-	_	2,417	1,652		-	_	177,755	27,145	-
4b.1.4	Totals	3,380	4,031	285	1,445	985	8,187	-	5,137	23,450	23,450	-	-	5,889	77,619		-	-	3,923,368	98,170	-
4b.1.5	Prepare/submit License Termination Plan		_	-				225	34	259	259									-	1,751
4b.1.6	Receive NRC approval of termination plan	-	-	-	-	-	-	220	54	200 a	209	-	-	-	-	-	•	-	-	-	1,751
4b.1	Subtotal Period 4b Activity Costs	3,693	26,240	1,036	2,594	18,892	14,312	225	15,045	82,037	78,593	-	3,444	112,746	95,607	-	-	-	9,427,420	374,358	1,751
	Additional Costs							1.005	01-	1010	1.040										2010
4b.2.1 4b.2.2	License Termination Survey Planning Excavation of Underground Services	-	1,175	-	-	-	-	1,037 $225$	311 328	1,348 1,728	1,348 1,728	-	-	-	-	-	-	-	-	7,411	6,240
4b.2.2	Operational Equipment		1,175	11	36	606	-	-	97	751	751	-	-	5,880	-	-	-		147,000	16	-
4b.2.4	License Termination ISFSI	-	24	81	435	-	2,532	1,375	1,112	5,560	5,560	-	-	-	9,355	-	_	-	1,123,457	3,762	5,460
4b.2	Subtotal Period 4b Additional Costs	-	1,199	93	471	606	2,532	2,638	1,848	9,387	9,387	-	-	5,880	9,355		-	-	1,270,457	11,189	11,700
Period 41	Collateral Costs																				
4b.3.1	Process decommissioning water waste	7	-	12	21	-	48	_	20	107	107	-	-	-	109	-	_	-	6,547	21	-
4b.3.3	Small tool allowance	-	443	-	-	-	-	-	66	509	509	-	-	-	-	-	-	-	´-	-	-
4b.3.4	Decommissioning Equipment Disposition	-	-	130	67	1,112	178	-	234	1,722	1,722	-	-	6,000	529		-	-	303,608	147	-
4b.3	Subtotal Period 4b Collateral Costs	7	443	142	88	1,112	225	1	320	2,338	2,338	-	-	6,000	638	-	-	-	310,155	168	-
Period 4	Period-Dependent Costs																				
4b.4.1	Decon supplies	1,449	-	-	-	-	-		362	1,811	1,811	-	-	-	-	-	-	-	-	-	-
4b.4.2	Insurance	-	-	-	-	-	-	862	86	949	949	-	-	-	-	-	-	-	-	-	-
4b.4.3 4b.4.4	Property taxes Health physics supplies	-	3,232	-	-	-	_	3,404	340 808	3,745 $4,041$	3,745 4,041	-	-	-	_	-	-	-	-	-	-
4b.4.5	Heavy equipment rental	-	4,577	-	_	-	-	-	687	5,263	5,263	-	_	_	-	-	-	_	_	_	_
4b.4.6	Disposal of DAW generated	-	-	116	47	-	482	-	139	784	784	-	-	-	5,849	-	-	-	116,984	191	-
4b.4.7	Plant energy budget	-	-	-	-	-	-	2,165	325	2,490	2,490	-	-	-	-	-	-	-	-	-	-
4b.4.8	NRC Fees	-	-	-	-	-	-	562	56	618	618	-	-	-	-	-	-	-	-	-	-
4b.4.9 4b.4.10	Fixed Overhead Liquid Radwaste Processing Equipment/Services	=	-	-	-	-	-	2,118 757	318 113	2,436 870	2,436 870	-	=	-	-	-	-	-	-	-	=
4b.4.10 4b.4.11	Railroad Track Maintenance	-	-	-	-	-	-	111	17	128	128	-	-	-	-	-	-		-		-
4b.4.12	Remedial Actions Surveys	-	-	-	-	-	-	1,995	299	2,294	2,294	-	-	-	-	-	_	-	-	-	-
4b.4.13	Security Staff Cost	-	-	-	-	-	-	7,811	1,172	8,983	8,983	-	-	-	-	-	-	-	-	-	115,753
4b.4.14	DOC Staff Cost	-	-	-	-	-	-	22,641	3,396	26,038	26,038	-	-	-	-	-	-	-	-	-	248,175
4b.4.15 4b.4	Utility Staff Cost Subtotal Period 4b Period-Dependent Costs	1,449	7,809	116	47	-	482	27,954 70,383	4,193 12,312	32,147 92,598	32,147 92,598	-	-	-	5,849	-	-	-	116,984	191	437,085 801,014
4b.0	TOTAL PERIOD 4b COST	5,149	35,691	1,386	3,201	20,610	17,552	73,246	29,526	186,361	182,916	-	3,444	124,626	111,449	-	-	-	11,125,020	385,906	814,465
PERIOI	4f - License Termination																				
	Direct Decommissioning Activities																				
4f.1.1	ORISE confirmatory survey	-	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-
4f.1.2 4f.1	Terminate license Subtotal Period 4f Activity Costs							166	50	a 216	216										
41.1	Dubiotal 1 e1100 41 Activity Costs	-	-	-	-	-	-	100	50	216	210	-	-	-	-	-	-	-	-	-	-
	Additional Costs							E 0.43	0.110	0.154	0.154									100.00	0.100
4f.2.1	License Termination Survey Subtotal Period 4f Additional Costs	-	-	-	-	-	-	7,041 7,041	2,112 2,112	9,154 9,154	9,154 9,154	-	-	-	-	-	-	-	-	100,895 100,895	3,120 3,120
4f.2	Subtotal 1 eriod 41 Additional Costs	-	-	-	-	-	-	1,041	2,112	9,104	9,104	<u>-</u>	-	-	-	-	-	-	-	100,895	5,120
Period 4	Collateral Costs																				
4f.3.1	DOC staff relocation expenses	-	-	-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-
4f.3	Subtotal Period 4f Collateral Costs	-	-	-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-

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Table H-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							`		1 2020 Donars	•											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Volumes		Burial /		Utility and
Activity		Decon	Removal	Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Period 4	Period-Dependent Costs																				
4f.4.2	Property taxes	-	-	-	-	-	-	1,335	133	1,468	1,468	-	=	-	-	-	-	-	-	-	-
4f.4.3	Health physics supplies	-	709	-	-	-	-	´-	177	886	886	-	-	-	-	-	-	-	-	-	-
4f.4.4	Disposal of DAW generated	-	-	7	3	-	27	-	8	45	45	-	-	-	332	-	-	-	6,649	11	-
4f.4.5	Plant energy budget	•	-	-	-	-	-	243	36	279	279	-	-	-	-	-	-	-	-	-	-
4f.4.6	NRC Fees	-	-	-	-	-	-	263	26	290	290	-	-	-	-	-	-	-	-	-	-
4f.4.7 4f.4.8	Fixed Overhead Railroad Track Maintenance	=	-	-	-	-	-	890 47	133 7	1,023 54	1,023 54	-	-	-	-	-	-	-	-	-	-
4f.4.9	Security Staff Cost	•	-	-	-	-	-	805	121	926	926	-	-	-	-	-	-	-	-	-	11,668
4f.4.10	DOC Staff Cost	-	-	-	-	-	-	4,238	636	4,874	4,874	-	-	-	-	-	-	-	-	-	46,283
4f.4.11	Utility Staff Cost	=	-	-	-	_	-	3,772	566	4,338	4,338	-	-	-	-	-	-	-	-	_	56,395
4f.4	Subtotal Period 4f Period-Dependent Costs	-	709	7	3	-	27	11,593	1,844	14,182	14,182	-	-	-	332	-	-	-	6,649	11	114,346
4f.0	TOTAL PERIOD 4f COST	-	709	7	3	-	27	20,064	4,196	25,006	25,006	-	-	-	332	-	-	-	6,649	100,906	117,466
PERIOI	0 4 TOTALS	5,395	66,681	17,237	6,768	27,115	45,248	146,144	68,152	382,741	376,336	-	6,405	166,102	145,174	125	673	1,773	15,537,650	677,209	1,529,086
PERIOI	0 5b - Site Restoration																				
Period 5	Direct Decommissioning Activities																				
Demoliti	on of Remaining Site Buildings																				
	Reactor	-	4,645	-	-	-	-	-	697	5,342	-	-	5,342	-	-	-	-	-	-	44,679	
	Auxiliary	-	1,993	-	-	-	-	-	299	2,291	-	-	2,291	-	-	-	-	-	-	11,902	
5b.1.1.3		-	7	-	-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	33	
5b.1.1.4		-	130	-	-	-	-	-	19	149	-	-	149	-	-	-	-	-	-	1,405	
5b.1.1.5	D3/D4 Emergency Generator	-	14 20	-	-	-	-	-	2 3	16	-	-	16 24	-	-	-	-	-	-	84 221	
5b.1.1.6 5b.1.1.7	Drum Transfer & Truck Loading Enclosure Hydrogen House	-	6	-	-	-	-	-	ئ 1	24 7	-	-	24 7	-	-	-	-	-	-	47	
5b.1.1.8	LLRW Storage Enclosure	-	128	-	-	-	-	-	19	147	-	-	147	-	-	-	-	-	-	853	
5b.1.1.9	Misc Structures 2017	-	2,617	-	-	-	-	-	393	3,009	-	-	3,009	-	-	-	-		-	22,582	
	Radwaste	_	176	-	-	_	-	_	26	202	-	-	202	-	-	-	-	_	_	1,400	
	Resin Disposal	-	14	-	-	-	-	-	2	16	-	-	16	-	-	-	-	-	-	120	
	Structures below 3' below grade	-	1,785	-	-	-	-	-	268	2,052	-	-	2,052	-	-	-	-	-	-	9,238	-
	Sulfuric Acid Tank Enclosure	•	3	-	-	-	-	-	0	4	-	-	4	-	-	-	-	-	-	35	-
	Turbine	-	2,140	-	-	-	-	-	321	2,461	-	-	2,461	-	-	-	-	-	-	21,997	
	Turbine Pedestal	-	365	-	-	-	-	-	55	420	-	-	420	-	-	-	-	-	-	1,857	
	Warehouse #2	-	24	-	-	-	-	-	4	27	-	-	27	-	-	-	-	-	-	213	
	Waste Neutralizing Tank House	-	7	-	-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	56	
	Waste Oil Storage	-	9	-	-	-	-	-	1	10	-	-	10	-	-	-	-	-	-	70	
	Water Treatment	-	324	-	-	-	-	-	49	373	-	-	373	-	-	-	-	-	-	2,690	
5b.1.1.20 5b.1.1	Fuel Handling of Aux Building Totals	-	1,095 15,501	-	-	-	-		164 2,325	1,259 17,826		-	1,259 17,826		-			-	-	8,240 127,723	
			10,001						2,020	11,020			11,020							121,120	
Site Clos 5b.1.2	eout Activities Remove Rubble		1,517						228	1,745	_		1,745							7,408	_
5b.1.2 5b.1.3	Grade & landscape site	-	448	-	-	-	-		67	515	-	-	515	-	-	-	-	-	-	921	
5b.1.4	Final report to NRC	-	-	-	-	-	-	86	13	99	99	-	-	-	-	-	-	-	-	- 521	667
5b.1	Subtotal Period 5b Activity Costs	-	17,466	-	-	-	-	86	2,633	20,185	99	-	20,086	-	-	-	-	-	-	136,051	
Period 5	o Additional Costs																				
5b.2.1	Clean Concrete Disposal	-	4,912	-	-	-	-	10	738	5,660	-	-	5,660	-	-	-	-	-	-	18,372	
5b.2.2	Intake Structure Cofferdam	-	442	-	-	-	-	-	66	508	-	-	508	-	-	-	-	-	-	3,552	
5b.2.3	Construction Debris	-	-	-	-	-	-	2,150	323	2,473	-	-	2,473	-	-	-	-	-	-	-	-
5b.2.4	Backfill	-	9,257	-	-	-	-	-	1,388	10,645	-	-	10,645	-	-	-	-	-	-	9,327	
5b.2.5	Demolition and Site Restoration of ISFSI	-	515	-	-	-	-	68	87	670	-	-	670	-	-	-	-	-	-	2,219	
5b.2	Subtotal Period 5b Additional Costs	-	15,125	-	-	-	-	2,227	2,603	19,955	-	-	19,955	-	-	-	-	-	-	33,470	80
Period 5	o Collateral Costs																				
5b.3.1	Small tool allowance	-	216	-	-	-	-		32	249	-	-	249	-	-	-	-	-	-	-	-
5b.3	Subtotal Period 5b Collateral Costs	-	216	-	-	-	-	-	32	249	-	-	249	-	-	-	-	-	-	-	-

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

Table H-2 Prairie Island SAFSTOR Unit 2 SAFSTOR Decommissioning Cost Estimate with 60 Years of Spent Fuel Storage (Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Volumes		Burial /		Utility and
Activity		Decon	Removal	Packaging	Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
D 1 FL	Decision of the Control																				
	Period-Dependent Costs							0.401	0.40	0.000			0.000								
	Property taxes	-		-	-	-	-	3,481	348	3,829	-	-	3,829	-	-	-	-	-	-	-	-
	Heavy equipment rental	-	7,144	-	-	-	-	-	1,072	8,215	-	-	8,215	-	-	-	-	-	-	-	-
5b.4.4	Plant energy budget	-	-	-	-	-	-	344	52	395	-	-	395	-	-	-	-	-	-	-	-
5b.4.5	Fixed Overhead	-	-	-	-	-	-	1,024	154	1,178	-	-	1,178	-	-	-	-	-	-	-	-
5b.4.6	Railroad Track Maintenance	-	-	-	-	-	-	133	20	152	-	-	152	-	-	-	-	-	-	-	-
5b.4.7	Security Staff Cost	_	_	_	_	-	-	2,055	308	2,363	-	-	2,363	_	_	-	_	_	-	-	29,221
	DOC Staff Cost	_	_	_	_	-	-	10,921	1,638	12,559	-	-	12,559	_	_	-	_	_	-	-	116,885
	Utility Staff Cost	_	_	_	_	_	_	3,831	575	4,406	_	-	4,406	_	_	-	_	_	-	-	57,340
	Subtotal Period 5b Period-Dependent Costs	-	7,144	-	-	-	-	21,789	4,166	33,099	-	-	33,099	-	-	-	-	-	-	-	203,445
5b.0	TOTAL PERIOD 5b COST	-	39,951	-	-	-	-	24,102	9,434	73,487	99	-	73,389	-	-	-	-	-	-	169,521	204,192
PERIOD	5 TOTALS	-	39,951		-	-	-	24,102	9,434	73,487	99	-	73,389		-	-		-	-	169,521	204,192
TOTAL CO	OST TO DECOMMISSION	12,732	121,684	17,878	7,311	27,293	47,788	911,654	176,962	1,323,304	952,576	290,238	80,490	172,234	166,987	125	673	1,773	16,284,880	947,658	5,801,223

TOTAL COST TO DECOMMISSION WITH 15.44% CONTINGENCY:	\$1,323,304	thousands of 2020 dollars
TOTAL NRC LICENSE TERMINATION COST IS 71.98% OR:	\$952,576	thousands of 2020 dollars
SPENT FUEL MANAGEMENT COST IS 21.93% OR:	\$290,238	thousands of 2020 dollars
NON-NUCLEAR DEMOLITION COST IS 6.08% OR:	\$80,490	thousands of 2020 dollars
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	167,785	Cubic Feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	1,773	Cubic Feet
TOTAL SCRAP METAL REMOVED:	42,406	Tons
TOTAL CRAFT LABOR REQUIREMENTS:	947,658	Man-hours

End Notes:  $n/a \ - indicates that this activity not charged as decommissioning expense a - indicates that this activity performed by decommissioning staff 0 - indicates that this value is less than 0.5 but is non-zero A cell containing " - " indicates a zero value$ 

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#### APPENDIX I

#### **DETAILED COST ANALYSIS**

#### SCENARIO 7: SAFSTOR with 100 Year DFS

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Prairie Island Nuclear Generating Plant, Unit 1	I-2
Prairie Island Nuclear Generating Plant, Unit 2	I-14

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Table I-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(T)	nousands	of 2020 Dollar	rs)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet		GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
PERIO	D 1a - Shutdown through Transition																				
Period 1	a Direct Decommissioning Activities																				
1a.1.1 1a.1.2	SAFSTOR site characterization survey Prepare preliminary decommissioning cost	-	-	-	-	-	-	415 167	124 25	539 192	539 192		-	-	-	-	-	-	-	-	1,300
1a.1.2 1a.1.3 1a.1.4	Notification of Cessation of Operations Remove fuel & source material	-	-	-	-	-	-	107	20	a n/a	192	-	-	-	-	-	-	•	-	-	1,300
1a.1.5 1a.1.6	Notification of Permanent Defueling Deactivate plant systems & process waste									a a											
1a.1.7 1a.1.8	Prepare and submit PSDAR Review plant dwgs & specs.	-	-	-	-	-	-	257 167	39 25	296 192	296 192		-	-	-	-	-	-	-	-	2,000 1,300
1a.1.9 1a.1.10	Perform detailed rad survey Estimate by-product inventory	_	_	_	_	_	_	129	19	a 148	148		_	_	_	_	_	_	_	_	1,000
1a.1.11 1a.1.12	End product description Detailed by-product inventory	-	-	-	-	-	-	129 193	19 29	148 222	148 222	-	-	-	-	-	-	-	-	-	1,000 1,500
1a.1.13 1a.1.14		-	-	-	-	-	-	129 398	19 60	148 458	148 458	-	-	-	-	-	-	-	-	-	1,000 3,100
1a.1.15 1a.1.16	Prepare/submit Defueled Technical Specifications	-	-	-	-	-	-	964 643	145 96	1,108 739	1,108 739	-	-	-	-	-	-	-	-	-	7,500 5,000
1a.1.17		-	-	-	-	-	-	129	19	148	148		-	-	-	-	-	-	-	-	1,000
	Specifications 1 Prepare plant and facilities for SAFSTOR	-	-	_	-	-	_	632	95	727	727	-	_	-	-	_	-	_	<u>-</u>	-	4,920
1a.1.18.	2 Plant systems 3 Plant structures and buildings	-	-	-	-	-	-	536 401	80 60	616 461	616 461	-	-	-	-	-	-	-	-	-	4,167 3,120
	4 Waste management 5 Facility and site dormancy	-	-	-	-	-	-	257 257	39 39	296 296	296 296		-	-	-	-	-	-	-	-	2,000 2,000
1a.1.18		-	-	-	-	-	-	2,083	312	2,395	2,395	÷	-	-	-	-	÷	-	÷	Ē	16,207
1a.1.19.	l Work Procedures 1 Plant systems	-	-	-	-	-	-	152		175	175		-	-	-	-	-	-	-	-	1,183
1a.1.19. 1a.1.19	2 Facility closeout & dormancy Total	-	-	-	-	-	-	154 306	23 46	$\frac{177}{352}$	$\frac{177}{352}$		-	-	-	-	-	-	-	-	1,200 2,383
1a.1.20	Procure vacuum drying system	-	-	-	-	-	-	13	2	15	15	-	-	-	-	-	-	-	-	-	100
1a.1.21 1a.1.22	Drain/de-energize non-cont. systems Drain & dry NSSS									a a											
1a.1.23 1a.1.24 1a.1	Drain/de-energize contaminated systems Decon/secure contaminated systems Subtotal Period 1a Activity Costs							6,120	980	a a 7,100	F 100										44,390
	a Collateral Costs	-	-	-	-	-	-	0,120	360	7,100	7,100	-	-	-	-	-	-	•	-	-	44,550
1a.3.1 1a.3	Prairie Island Indian Community Payments Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	1,249 1,249	-	1,249 1,249	-	1,249 1,249	-	-	-	-	-	-	-	-	-
	a Period-Dependent Costs							-,		2,2 20		-,									
1a.4.1	Insurance Property taxes	-	-	-	-	-	-	1,660 3,623	166 362	1,826 3,985	1,826 3,985		-	-	-	-	-	-	-	-	-
1a.4.2 1a.4.3	Health physics supplies	-	614	-	-	-	-	ə,62ə -	153	5,965 767	5,965 767		-	-	-	-		-	-	-	-
1a.4.4	Heavy equipment rental	-	753		-	-	-	-	113	866	866	-	-	-	-	-	-	-	-	-	-
1a.4.5	Disposal of DAW generated	=	-	12	5	-	50	-	14	82	82		-	-	610	-	-	-	12,190	20	-
1a.4.6 1a.4.7	Plant energy budget NRC Fees	-	-	-	-	-	-	1,621 892	243 89	1,864 981	1,864 981		-	-	-	-	-	-	-	-	-
1a.4.7 1a.4.8	Emergency Planning Fees	-	-	-	-	-	-	2,174	217	2,392	901	2,392	-		-	-		-	-	-	-
1a.4.9	Fixed Overhead	-	-	-	-	-	-	1,440	216	1,656	1,656		-	-	-	-	-	-	-	-	-
1a.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	422	63	486	-	486	-	-	-	-	-	-	-	-	-
1a.4.11 1a.4.12	ISFSI Operating Costs Railroad Track Maintenance	=	-	-	-	-	-	56 63	8	64 72	72	64	-	-	-	-	-	-	-	-	-
1a.4.12	Security Staff Cost	-		-	-	-	-	8,328	1,249	9,577	9,577		-			-		-	-	-	122,720
1a.4.14	Utility Staff Cost	-	-	-	-	-	-	26,931	4,040	30,971	30,971	-	-	-	-	-	-	-	-	-	422,240
1a.4	Subtotal Period 1a Period-Dependent Costs	-	1,367	12	5	-	50	47,211	6,945	55,590	52,648	2,942	-	-	610	-	-	-	12,190	20	544,960
1a.0	TOTAL PERIOD 1a COST	-	1,367	12	5	-	50	54,580	7,925	63,939	59,748	4,191	-	-	610	-	-	-	12,190	20	589,350

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Table I-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(11	lousanus	oi 2020 Dollai	. 5)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet		Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
PERIOI	1b - SAFSTOR Limited DECON Activities																				
Period 11	Direct Decommissioning Activities																				
Decontar	nination of Site Buildings																				
1b.1.1.1	Reactor	1,199		-	-	-	-	-	599	1,798	1,798	-	-	-	-	-	-	-	-	17,003	-
1b.1.1	Totals	1,199	-	=	-	=	-	-	599	1,798	1,798	=	-	-	-	-	-	-	-	17,003	-
1b.1	Subtotal Period 1b Activity Costs	1,199	-	-	-	-	-	-	599	1,798	1,798	-	-	-	-	-	-	-	-	17,003	-
Period 11	o Additional Costs																				
1b.2.1 1b.2	Spent Fuel Pool Isolation Subtotal Period 1b Additional Costs	-	-	-	-	-	-	$12,675 \\ 12,675$	1,901 1,901	$14,576 \\ 14,576$	14,576 14,576	-	-	-	-	-	-	-	-	-	-
	o Collateral Costs																				
1b.3.1 1b.3.2	Decon equipment Process decommissioning water waste	1,055 79		52	94	-	212	-	158 112	1,213 549	1,213 549	-	-	-	487	-	-	-	29,193	95	-
1b.3.4	Small tool allowance	- 19	20		- 94			-	3	23	23	-	-	-	401	-	-	-	29,193	- 95	-
1b.3.5	Prairie Island Indian Community Payments	-	-	-		-	-	311	-	311	-	311	-	-	-	-	-	-	-	-	-
1b.3	Subtotal Period 1b Collateral Costs	1,134	20	52	94	-	212	311	273	2,097	1,785	311	-	-	487	-	-	-	29,193	95	-
Period 1l 1b.4.1	o Period-Dependent Costs Decon supplies	449							112	561	561										
1b.4.1 1b.4.2	Insurance	-	-	-	-	-	-	414	41	455	455	-	-	-	-	-	-		-	-	-
1b.4.3	Property taxes	-	-	-	-	-	-	903	90	994	994	-	-	-	-	-	-	-	-	-	-
1b.4.4	Health physics supplies	=	250		-	-	-	-	63	313	313	-	-	-	-	-	-	-	-	-	-
1b.4.5 1b.4.6	Heavy equipment rental Disposal of DAW generated	-	188	- 6	- 3	-	27	-	28 8	216 43	216 43	-	-	-	324	-	-	-	6.486	11	-
1b.4.6 1b.4.7	Plant energy budget	-	-	-	-	, - -	-	404	61	465	465	-	-	-	- 524	-	-		- 0,480	- 11	-
1b.4.8	NRC Fees	-	-	-	-	-	-	161	16	177	177	-	-	-	-	-	-	-	-	-	-
1b.4.9	Emergency Planning Fees	=	-	-	-	-	-	542	54	596	-	596	-	-	-	-	-	-	-	-	-
1b.4.10 1b.4.11	Fixed Overhead Spent Fuel Pool O&M	-	-	-	-	-	-	359 105	54 16	413 121	413	121	-	-	-	-	-	-	-	-	-
1b.4.11	ISFSI Operating Costs	-		-	_	-	-	14	2	16	-	16	-	-			-	_	-	-	-
1b.4.13	Railroad Track Maintenance	-	-	-	-	-	-	16	2	18	18	-	-	-	-	-	-	-	-	-	-
1b.4.14	Security Staff Cost	=	-	-	-	-	-	2,076	311	2,388	2,388	-	-	-	-	-	-	-	-	-	30,596
1b.4.15 1b.4	Utility Staff Cost Subtotal Period 1b Period-Dependent Costs	449	438	6	3	-	27	6,714 11,709	1,007 1,866	7,722 $14,498$	7,722 13,764	733	-	-	324	-	-	-	6,486	- 11	105,271 135,867
1b.0	TOTAL PERIOD 1b COST	2,781	458	59	97	7 -	239	24,696	4,640	32,969	31,924	1,045	-	-	811	-	-	-	35,678	17,108	135,867
PERIOI	1c - Preparations for SAFSTOR Dormancy																				
Period 1	e Direct Decommissioning Activities																				
1c.1.1	Prepare support equipment for storage	-	527	-	-	-	-	_	79	606	606	-	-	-	-	-	-	-	-	3,000	-
1c.1.2	Install containment pressure equal. lines	-	54	-		-	-	-	8	62	62	-	-	-	-	-	-	-	-	700	-
1c.1.3 1c.1.4	Interim survey prior to dormancy Secure building accesses	-	-	-	-	-	-	733	220	953 a	953	-	-	-	-	-	-	-	-	12,801	-
1c.1.5	Prepare & submit interim report	-	-	-	-	-	-	75	11	86	86	-	-	-	-	-	-	-	-	-	583
1c.1	Subtotal Period 1c Activity Costs	-	581		-	-	-	808	318	1,707	1,707	-	-	-	-	-	-	-	-	16,501	583
	e Collateral Costs																				
1c.3.1 1c.3.3	Process decommissioning water waste Small tool allowance	91	- 5	60	109	-	245	-	129 1	634 6	634 6	-	-	-	561	-	-	-	33,685	109	-
1c.3.3	Spent Fuel Capital and Transfer	-	- 0	-	-	-	-	163	25	188		188	-	-	-	-	-		-	-	-
1c.3.5	Retention and Severance	-	-	-	-	-	-	1,032	155	1,187	1,187	-	-	-	-	-	-	-	-	-	-
1c.3.6	Prairie Island Indian Community Payments	-	-	-	-	-	-	311	-	311	-	311	-	-	-	-	-	-	-	-	-
1c.3	Subtotal Period 1c Collateral Costs	91	5	60	109	-	245	1,507	309	2,325	1,826	499	-	-	561	-	-	-	33,685	109	-
Period 1o 1c.4.1	: Period-Dependent Costs Insurance	_	_	_	-	_	_	414	41	455	455	-	-	_	_	-	_	_	-	-	-
1c.4.2	Property taxes	-	-	-	-	-	-	903	90	994	994	-	-	-	-	-	-	-	-	-	-
1c.4.3	Health physics supplies	-	248		-	-	-	-	62	309	309	-	-	-	-	-	-	-	-	-	-
1c.4.4 1c.4.5	Heavy equipment rental Disposal of DAW generated	-	188	3	. 1	-	13	-	28	216 20	216 20	-	-	-	152	-	-	-	3,039	- 5	-
1c.4.5 1c.4.6	Plant energy budget	-	-	3			13	404	4 61	465	20 465	-	-	-	192	-	-	-	3,039	- b	-
10.1.0								104	01	130	100										

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Table I-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							<b>\</b>		or 2020 Donai	/											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
	c Period-Dependent Costs (continued)								<u> </u>										,		-
1c.4.7	NRC Fees	_	_	_	_	_	-	161	16	177	177	_	_	_	_	_	_	-	-	_	_
1c.4.8	Emergency Planning Fees	-	-	-	-	-	-	542	54	596	-	596	-	-	-	-	-	-	-	-	-
1c.4.9	Fixed Overhead Spent Fuel Pool O&M	-	-	-	-	-	-	359 105		413 121	413	- 121	-	-	-	-	-	-	-	-	-
1c.4.10 1c.4.11	ISFSI Operating Costs		-	-	-	-	-	105		16	-	16	-	-	-	-	-	-	-	-	-
1c.4.12	Railroad Track Maintenance	-	-	-	-	-	-	16	2	18	18	-	-	-	-	-	_	-	-	-	-
1c.4.13	Security Staff Cost	-	-	-	-	-	-	2,076		2,388	2,388	-	-	-	-	-	-	-	-	-	30,596
1c.4.14 1c.4	Utility Staff Cost Subtotal Period 1c Period-Dependent Costs	-	435	- 3	. 1		13	6,714 11,709	1,007 1,749	7,722 13,910	7,722 13,177	733	-	-	152	-	-	-	3,039	- 5	105,271 135,867
1c.0	TOTAL PERIOD 1c COST	91	1,021				257	14,024	2,376	17,943	16,710	1,233			713				36,724	16,615	
			,					,	ŕ	,	,	ŕ	-	-		-	-	-	,		
	D 1 TOTALS	2,873	2,846	134	212	-	546	93,299	14,941	114,851	108,382	6,468	-	-	2,134	-	-	-	84,593	33,743	861,667
PERIO	D 2a - SAFSTOR Dormancy with Wet Spent Fuel Storage																				
	a Direct Decommissioning Activities									-											
2a.1.1 2a.1.2	Quarterly Inspection Semi-annual environmental survey									a a											
2a.1.3	Prepare reports									a											
2a.1.4	Bituminous roof replacement	-	-	-	-	-	-	54		62	62	=	-	-	-	-	-	-	-	-	-
2a.1.5 2a.1	Maintenance supplies Subtotal Period 2a Activity Costs	-	-	-	-	-	-	520 574		650 712	650 712	-	-	-	-	-	-	-	-		-
	·							0.1	100												
	a Additional Costs							4.0.40	250	<b>~</b> 000	~ ^ ^										
2a.2.1 2a.2	Security Modifications Subtotal Period 2a Additional Costs		-	-	-	-	-	4,348 4,348		5,000 5,000	5,000 5,000	-	-	-	-		-	-	-	-	-
24.2	Substitute of the substitute o							1,010	002	0,000	0,000										
	a Collateral Costs																				
2a.3.1 2a.3.2	Spent Fuel Capital and Transfer Retention and Severance	-	-	-	-	-	-	66,237 22,434	9,936 3,365	76,173 25,799	25,799	76,173	-	-	-	-	-	-	-	-	-
2a.3.2 2a.3.3	Prairie Island Indian Community Payments		-	-	-	-	-	4,654	5,565	4,654	25,799	4,654	-	-	-		-	-	-	-	-
2a.3	Subtotal Period 2a Collateral Costs	-	-	-	-	-	-	93,325	13,301	106,626	25,799	80,827	-	-	-	-	-	-	-	-	-
Period 2	da Period-Dependent Costs																				
2a.4.1	Insurance	-	-	-	-	-	-	1,804	180	1,985	1,985	-	-	-	-	-	-	-	-	-	-
2a.4.2	Property taxes	-	- 001	-	-	-	-	13,489		14,838	14,838	-	-	-	-	-	-	-	-	-	-
2a.4.3 2a.4.4	Health physics supplies Disposal of DAW generated		801	14	- 6	-	59	-	200 17	1,001 96	1,001 96	-	-	-	714		-	-	14,273	23	-
2a.4.5	Plant energy budget	-	-	-	-	-	-	1,208	181	1,389	1,389	-	_	-	-	-	_	_		-	-
2a.4.6	NRC Fees	-	-	-	-	=	-	908	91	999	999	-	-	-	-	-	-	-	-	-	-
2a.4.7	Emergency Planning Fees	-	-	-	-	-	-	6,924	692	7,616		7,616	-	-	-	-	-	-	-	-	-
2a.4.8	Fixed Overhead	-	-	-	-	-	-	4,432	665 236	5,097 1,809	5,097	1,809	-	-	-	-	-	-	-	-	-
2a.4.9 2a.4.10	Spent Fuel Pool O&M ISFSI Operating Costs	-	-	-	-	-	-	1,573 209		240	-	1,809	-	-	-	-	-	-	-	-	-
2a.4.11	Railroad Track Maintenance	_	-	-	-	-	_	462		531	531	240	-	-	-	_	-	_	-	-	-
2a.4.12		-	-	-	-	-	-	29,334	4,400	33,734	24,289	9,446	-	-	-	-	_	-	-	-	431,215
2a.4.13	Utility Staff Cost	-	-	-	-	-	-	3,645	547	4,192	3,517	675	-	-	-	-	-	-	-	-	58,126
2a.4	Subtotal Period 2a Period-Dependent Costs	-	801		6	-	59	63,988	8,659	73,527	53,741	19,786	-	-	714	-	-	-	14,273	23	
2a.0	TOTAL PERIOD 2a COST	-	801	14	6	-	59	162,235	22,750	185,865	85,251	100,614	-	-	714	-	-	-	14,273	23	489,341
PERIO	D 2b - SAFSTOR Dormancy with Dry Spent Fuel Storage																				
	b Direct Decommissioning Activities																				
2b.1.1	Quarterly Inspection									a											
2b.1.2 2b.1.3	Semi-annual environmental survey Prepare reports									a a											
2b.1.3 2b.1.4	Bituminous roof replacement		_	_	_	_	_	704	106	a 810	810	_	_	_	_		_	_	_	_	_
2b.1.4 2b.1.5	Maintenance supplies		-	-	-	-	-	6,792		8,490	8,490	-	-	-	-		-	-		-	-
2b.1	Subtotal Period 2b Activity Costs	-	-	-	-	-	-	7,496		9,300	9,300	-	-	-	-	-	-	-	-	-	-
Dania 16	ob Callatonal Casta																				
2b.3.1	2b Collateral Costs Spent Fuel Capital and Transfer	_	_	-	-	=	_	122,995	18,449	141,444	_	141,444	_	_	_	_	_	_	_	-	-
2b.3.1 2b.3.2	Prairie Island Indian Community Payments	-	-	=	-	-	-	60,797	10,440	60,797	-	60,797	-	-	-	-	-	-	-	-	-
2b.3	Subtotal Period 2b Collateral Costs	-	-	-	-	-	-	183,792	18,449	202,241	-	202,241	-	-	-	-	-	-	-	-	-

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Table I-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							,														
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial V	Volumes		Burial /		Utility and
Activit		Decon			Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC		Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Poriod 9	b Period-Dependent Costs																				
2b.4.1	Insurance	_	_	-	_	-	_	23,569	2,357	25,926	25,926	_	_	_	-	_	-	_	_	-	_
2b.4.2	Property taxes	-	-	-	-	-	-	176,207	17,621	193,828	193,828	-	-	-	-	-	-	-	-	-	-
2b.4.3	Health physics supplies	-	5,528	-	-	-	-	-	1,382	6,910	6,910	-	-	-	-	-	-	-	-	-	-
2b.4.4	Disposal of DAW generated	-	-	100	40	-	414	-	120	674	674	-	-	-	5,027	-	-	-	100,550	164	-
2b.4.5	Plant energy budget	-	-	-	-	-	-	7,891	1,184	9,075	9,075	-	-	-	-	-	-	-	-	-	-
2b.4.6	NRC Fees	-	-	-	-	-	-	11,071	1,107	12,178	12,178	- 0.000	-	-	-	-	-	-	-	-	-
2b.4.7 2b.4.8	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	3,608 7,930	361 1,190	3,969 9,120	9,120	3,969	-	-	-	-	-	-	-	-	-
2b.4.9	ISFSI Operating Costs	-	-	-	-	-	-	2,724	409	3,132	3,120	3,132	-	-	-	-	-		-	-	-
2b.4.10	Railroad Track Maintenance	-	-	-	-	-	_	3,043	456	3,499	3,499		-	-	-	-	-	-	_	_	_
2b.4.11	Security Staff Cost	-	-	-	-	-	-	135,841	20,376	156,217	34,368	121,849	-	-	-	-	-	_	-	-	1,822,251
2b.4.12	Utility Staff Cost	-	-	-	-	-	-	66,470	9,970	76,440	48,005	28,436	-	-	-	-	-	-	-	-	1,012,362
2b.4	Subtotal Period 2b Period-Dependent Costs	-	5,528	100	40	-	414	438,354	56,532	500,968	343,582	157,386	-	-	5,027	-	-	-	100,550	164	2,834,613
2b.0	TOTAL PERIOD 2b COST		5,528	100	40		41.4	629,642	76,785	710 510	352,882	359,628			E 097				100,550	164	2,834,613
		-				-	414			712,510			-	-	5,027	-	-	-			
PERIO	D 2 TOTALS	-	6,329	114	46	-	473	791,877	99,535	898,374	438,133	460,241	-	-	5,741	-	-	-	114,823	187	3,323,954
PERIO	D 3a - Reactivate Site Following SAFSTOR Dormancy																				
Period 3	a Direct Decommissioning Activities																				
3a.1.1	Prepare preliminary decommissioning cost	-	-	-	-	-	-	167	25	192	192	-	-	-	-	-	-	_	-	-	1,300
3a.1.2	Review plant dwgs & specs.	-	-	-	-	-	-	591	89	680	680	-	-	-	-	-	-	-	-	-	4,600
3a.1.3	Perform detailed rad survey									a											
3a.1.4	End product description	-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	1,000
3a.1.5	Detailed by-product inventory	-	-	-	-	-	-	167 964	25 145	192	192 1.108	-	-	-	-	-	-	-	-	-	1,300
3a.1.6 3a.1.7	Define major work sequence Perform SER and EA	-	-	-	-	-	-	398	145 60	1,108 458	1,108	-	-	-	-	-	-	-	-	-	7,500 3,100
3a.1.7	Perform Site-Specific Cost Study			-	-	-	-	643	96	739	739	-	-	-	-	-	-	-	-	-	5,000
	Specifications Coulting							0.45	142	1.089	980		100								F 050
3a.1.9.1 3a.1.9.2		-	-	-	-	-	-	947 536	142 80	616	554	-	109 62	-	-	-	-	-	-	-	7,370 4,167
3a.1.9.3		-	-	-		-	-	912	137	1,049	1,049	-	- 02	-	-	-	-	-	-	-	7,100
3a.1.9.4		-	-	_	-	-	_	835	125	961	961	-	-	-	-	-	-	_	-	-	6,500
3a.1.9.5		-	-	-	-	-	-	64	10	74	74	-	-	-	-	-	-	-	-	-	500
3a.1.9.6		-	-	-	-	-	-	401	60	461	461	-	-	-	-	-	-	-	-	-	3,120
3a.1.9.7		-	-	-	-	-	-	206	31	236	118	-	118	-	-	-	-	-	-	-	1,600
3a.1.9.8		-	-	-	-	-	-	51	8	59	-	-	59	-	-	-	-	-	-	-	400
3a.1.9.9		-	-	-	-	-	-	51	8	59	-	-	59	-	-	-	-	-	-	-	400
	Plant structures & buildings Waste management	-	-	-	-	-	-	401 591	60 89	461 680	231 680	-	231	-	-	-	-	-	-	-	3,120 4,600
	2 Facility & site closeout	-	-	-		-	-	116	17	133	67	-	67	-	-	-	-		-	-	900
3a.1.9	Total	-	_	_	-	_	_	5,112	767	5,879	5,175	_	704	_	-	-	-	_	_	_	39,777
								•		,											,
	g & Site Preparations							000		05-	0.50										2 100
3a.1.10 3a.1.11		-	-	-	-	-	-	308 3,500	46 525	355 $4,025$	355 4,025	-	-	-	-	-	-	-	-	-	2,400
3a.1.11 3a.1.12	Plant prep. & temp. svces Design water clean-up system	-	-	-	-	-	-	3,500	525 27	4,025	4,025	-	-	-	-	-	-	-	-	-	1,400
3a.1.12	Rigging/Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,400	360	2,760	2,760	-	-	-	-		-	-	-	-	1,400
3a.1.14	Procure casks/liners & containers	-	-	-	-	-	_	158	24	182	182	-	-	-	-	-	-	-	_	_	1,230
3a.1	Subtotal Period 3a Activity Costs	-	-	-	-	-	-	14,717	2,208	16,925	16,221	-	704	-	-	-	-	-	-	-	68,607
Period 3	a Additional Costs																				
3a.2.1	Site Characterization	_	_	-	_	-	_	3,520	1,056	4.576	4,576	-	_	_	_	_	_	_	-	21,020	8,332
3a.2.2	Mixed/Hazardous Waste	_	-	353		178	_	- 0,020	76	702	702	-	_	6,132		-	-	_	351,977	2,348	
3a.2.3	Asbestos Abatement	-	2,526	3	150	-	1,369	-	996	5,044	5,044	-	-	-	12,843	-	-	-	166,959	20,907	-
3a.2	Subtotal Period 3a Additional Costs	-	2,526	356		178		3,520	2,129	10,321	10,321	-	-	6,132		-	-	-	518,936	44,275	8,332
Period 3	a Collateral Costs																				
3a.3.1	Small tool allowance	_	34	-	_	-	_	-	5	39	39	-	_	-	-	_	-	_	-	-	_
3a.3.2	Spent Fuel Capital and Transfer	-	-	-	-	-	-	24,367	3,655	28,022	-	28,022	-	-	-	-	-	-	-	-	-
3a.3.3	Prairie Island Indian Community Payments	-	-	-	-	-	-	1,249	-	1,249	-	1,249	-	-	-	-	-	-	-	-	-
3a.3	Subtotal Period 3a Collateral Costs	-	34	-	-	-	-	25,616	3,660	29,310	39	29,271	-	-	-	-	-	-	-	-	-

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Table I-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

Period   P								(11	iousunus .	oi 2020 Dolla	13)											
The series of th																						
Martine   Mart									Other Costs	Total Contingency								Class C Cu. Feet	GTCC Cu. Feet			
Section   Sect																						
1.51   1.			-		-	-	-	-						-	-	-	-	-	-	-	-	-
1. 1			-		-	-	-	-						-		-	-	-	-	-	-	-
1. 1			-		-	-	-	-		113				-	-	-	-	-	-	-	-	-
14.1			-	-	10	4	-	42					-	-	-	516	-	-	-	10,311	17	-
Section   Sect			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	-
Substitute   Sub				-	-	-	-	-						-	-	-	-	-	-	-	-	-
Section   Sect			-	_	-	-	-	-						-	-	-	-	-	-	_	-	_
Martine   Mart			-	-	-	-	-	-						-	-	-	-	-	-	-	-	-
Section   Sect			-	-	-	-	-	-						-	-	-	-	-	-	-	-	-
March   Marc			-	-	-	-	-	-						-	-	-		-		-	-	69 160
Mine			-	_	_	-	-	_						-	_	_	-	_	-	-		
Paralle   Para			-	1,423	10	4	-	42	29,042				2,882	-	-	516	-	-	-	10,311	17	329,160
Paris   Pari	3a.0	TOTAL PERIOD $3a$ COST	-	3,983	366	248	178	1,412	72,895	12,414	91,495	58,638	32,153	704	6,132	13,359	-	-	-	529,247	44,292	406,099
No.   1	PERIOI	3b - Decommissioning Preparations																				
18.1.1	Period 3b	b Direct Decommissioning Activities																				
18.1.1.2   Santon interwals	Detailed	Work Procedures																				
St.1.1   Commission bindings			-	-	-	-	-	-					-	70	-	-	-	-	-	-	-	
Section   Composing assemble     29   18   18   18   18   18   18   18   1			-	-	-	-	-	-					-	150	-	-	-	-	-	-	-	
Section   Continue of Contin			-	-	-	-	-	-					-	100	-	-	-	-	-	-	-	
St.1.16   Income intermentation			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	
Sal.18   Sality denotes	3b.1.1.6	Incore instrumentation	-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	1,000
Sal. 19   Sale sheefed   Sale shee			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	
Section   Sect			-	-	-	-	=	-					=	89	-	-	-	-	-	-	-	
Salit   Semi generators			-	-	-	-	-	-			177		-	-	-	-	-	-	-	-	-	
Sull   Sair Turbane			-	-	-	-	-	-					-	-	-	-	-	-	-	-	-	4,600
Sh.1.1.1   Main Condensers			-	-	-	-	-	-		19		74	-		-	-	-	-	-	-	-	1,000
Salitify			-	-	-	-	-	-		30			-		-	-	-	-	-	-	-	
Sail			-	-	-	-	-	-					-		-	-	-	-	-	-	-	
10   10   10   10   10   10   10   10			-	-	-	-	-	-		53			-		-	-	-	-	-	-	-	
Period			-	-	-	-	-	-					-		-	-	-	-	-	-	-	32,243
18.5   18.6	3b.1	Subtotal Period 3b Activity Costs	-	-	Ē	-	-	-	4,144	622	4,765	3,841	-	924	-	-	-	-	-	-	-	32,243
1.00   1.00																						
1.00   1.00			1,055	-	-	-	-	-	1 264					-	-	-	-	-	-	-	-	-
18.5.4   Speint Fuel Capital and Transfer				1.200	_	_	_	-	- 1,204				-	_	_	-	_	-	_	_	-	_
Substail   Period			-		-	-	-	-	26,241				30,177	-	-	-	-	-	-	-	-	-
Period 3b Period-Dependent Costs   38			-		-	-	-	-						-	-	-	-	-	-	-	-	-
38   1   Deconsupplies   38   1   1   1   1   1   1   1   1   1			1,055	1,200	-	-	-	-	28,128	4,464	34,846	4,047	30,800	-	-	-	-	-	-	-	-	-
State   Stat			38	_	_	_	-	_	_	q	47	47	_	_	-	-	_	-	_	-	_	_
Sh.4.4   Property taxes			-			-	-	-			266		-	-	-	-	-	-	-	-	-	-
3b.4.5         Heavy equipment rental         375	3b.4.3	Property taxes	=		-	-	-	-		180	1,982	1,270	711	-	-	-	-	-	-	-	-	-
3b.4.6       Disposal of DAW generated       Disposal of DAW generated       2       24       7       39       39       -       291       5,814       9       -         3b.4.7       Plant energy budget       -       -       808       121       930       930       -       -       -       -       -       -         3b.4.8       NRC ISFSI Fees       -       -       6       -       6       -			-		-	-	-	-						-	-	-	-	-	-	-	-	-
3b.4.7       Plant energy budget       808       121       930       930       -        -       -       -       -       -       -       -       -       -       -       -       -       -       -       -        -			-	375	- 0	-	-	- 04		56				-	-	- 001	-	-	-	E 01.4	-	-
3b.4.8       NRC ISFSI Fees       60       6       66       66       66       68       69       68       69			-		- 6	2	-	24						-	-	291	-	-	-	,	9	-
3b.4.9     NRC Fees     -     167     17     183     183     -     -     -     -     -       3b.4.10     Emergency Planning Fees     -     37     4     41     -     41     -     -     -     -       3b.4.11     Fixed Overhead     -     718     826     826     -     -     -     -       3b.4.12     ISFSI Operating Costs     -     28     4     32     -     32     -     -     -       3b.4.13     Railroad Track Maintenance     31     5     36     36     -     -     -     34,485       3b.4.15     DOC Staff Cost     -     -     5,344     802     6,146     6,146     -     -     -     -     5,808			-	-	-	-	-	-						-	-	-	-	-	-	-	-	-
3b.4.11 Fixed Overhead			=	-	-	-	-	-				183	-	-	-	-	-	-	-	-	-	-
3b.4.12 ISFSI Operating Costs 28 4 32 32			-	-	-	-	-	-						-	-	-	-	-	-	-	-	-
3b.4.13 Railroad Track Maintenance			-	-	-	-	-	•						-	-	-	-	-	-	-	-	-
3b.4.14 Security Staff Cost 2,310 346 2,656 2,515 141 34,485 3b.4.15 DOC Staff Cost 5,344 802 6,146 6,146 58,080			-	-	-	-	-							-	-	-	-	-	-	-	-	-
3b.4.15 DOC Staff Cost 5,344 802 6,146 6,146 58,080			-		-	-	-	-						-	-	-	-	-	-	-	-	34,485
3b.4.16 Utility Staff Cost	3b.4.15	DOC Staff Cost	-	-	-	-	-	-	5,344	802	6,146	6,146	-	-	-	-	-	-	-	-	-	58,080
	3b.4.16	Utility Staff Cost	-	-	-	-	-	-	8,277	1,242	9,518	9,185	333	-	-	-	-	-	-	-	-	129,644

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Table I-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							,			•											
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
3b.4	Subtotal Period 3b Period-Dependent Costs	38	671	6	2	-	24	19,823	3,005	23,568	22,244	1,324	-	-	291	-	-	-	5,814	9	222,210
3b.0	TOTAL PERIOD 3b COST	1,092	1,871	6	2	-	24	52,094	8,090	63,180	30,132	32,124	924	-	291	-	-	-	5,814	9	254,453
PERIOD	3 TOTALS	1,092	5,853	372	251	178	1,436	124,989	20,504	154,675	88,770	64,276	1,628	6,132	13,649	-	-	-	535,061	44,301	660,551
PERIOD	) 4a - Large Component Removal																				
Period 4a	a Direct Decommissioning Activities																				
4a.1.1.1 4a.1.1.2 4a.1.1.3	Reactor Coolant Pumps & Motors	11 5 13 - 63 53	42 19 60 77 3,307 248 4,650 5,835	10 6 46 382 1,690 205 13,334 1,653	11 7 85 91 1,743 44 828 442	66 44 - 2,409 326	94 62 463 776 3,885 454 8,610 3,268	- - - - - 278 278	52 31 155 265 2,590 283 11,401 6,576	285 174 822 1,591 15,625 1,623 39,153 18,053	285 174 822 1,591 15,625 1,623 39,153 18,053	- - - - - -	:	240 160 - 18,672 2,138	254 169 2,332 2,196 10,990 2,146 1,174 9,245	- - - - - -	- - - - - 742	- - - - - -	33,680 22,441 295,800 158,199 1,581,180 165,025 167,605 579,324	778 352 1,226 1,346 10,253 4,449 22,373 22,373	80 750 2,250
4a.1.1	Totals	146	14,237	17,327	3,250	2,845	17,613	556	21,352	77,327	77,327	-	-	21,210	28,505	-	742	-	3,003,254	63,151	5,187
Removal 4a.1.2 4a.1.3	of Major Equipment Main Turbine/Generator Main Condensers	-	292 2,510	116 79	35 33	555 742	- -	-	173 752	1,170 4,115	1,170 4,115	-	-	2,243 4,000	-	-	-	-	134,601 180,000	4,116 34,978	
	g Costs from Clean Building Demolition Reactor Totals	-	794 794	- -	-	:	- -		119 119	913 913	913 913		Ī			- -	- -	- -	-	7,589 7,589	Ī
4a.1.5.1 4a.1.5.3 4a.1.5.3 4a.1.5.4 4a.1.5.6 4a.1.5.7 4a.1.5.9 4a.1.5.10 4a.1.5.11 4a.1.5.12 4a.1.5.14 4a.1.5.15 4a.1.5.14 4a.1.5.15 4a.1.5.17 4a.1.5.18 4a.1.5.19 4a.1.5.20 4a.1.5.20 4a.1.5.20 4a.1.5.20	Auxiliary Feedwater Auxiliary Feedwater - RCA Bleed Steam Caustic Addition - RCA Chemical Feed Chemical Feed - RCA Circulating Water		31 46 47 90 38 20 1 42 474 235 183 9 153 34 400 27 0 115 366 434 5 386 70 3,401	0 0 0 0 - 4 - - - - - 10 22 - - - - - - - - - - - - - - - - - -	2 0 	36 - 39 - 1 - - - 348 - - - - - - - - - - - - - - - - - - -			5 7 17 14 16 3 0 6 71 35 101 1 23 133 5 60 4 0 17 225 224 1 1,037	36 53 102 104 95 23 3 49 545 271 10 175 895 39 460 31 0 133 1,482 1,282 6 444 81 6,967			36 53 - 104 - 23 - 49 545 271 - 10 175 - 39 460 31 0 133 - 6 444 81 2,458	215 233 6 6 2,078 3,208       					8,722 9,453 243	452 670 601 1,335 444 304 12 619 6,837 3,420 2,329 127 2,215 2,651 505 5,881 389 5 1,690 4,956 5,974 75 5,609 1,003 48,101	
4a.1.0	Subtotal Period 4a Activity Costs	146	22,144	17,570	3,426	6,311	17,850	556	23,666	91,669	89,211		2,458	40,406	29,203	_	742	_	3,889,412	163,954	5,187
	a Additional Costs Retired RPV upper internals package Subtotal Period 4a Additional Costs	- -	128 128	166 166	58		1,583 1,583	- -	944 944	2,879 2,879	2,879 2,879	- - -	2,±00 - -		572 572	125 125	-	-	49,800 49,800	1,667 1,667	67 67
Period 4a 4a.3.1 4a.3.2 4a.3.3	a Collateral Costs Process decommissioning water waste Process decommissioning chemical flush waste Small tool allowance	2	- - 213	4	8	- -	17 -	- - -	7 - 32	38 - 245	38 - 220	- - -	- - 24	- - -	39 -	- - -	- - -	- - -	2,337	8	- - -

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Table I-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							`		or 2020 Dona	/											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity		Decon	Removal Cost	Packaging Costs	Transport Costs	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A Cu. Feet	Class B	Class C Cu. Feet	GTCC	Processed Wt., Lbs.	Craft Manhours	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. reet	Cu. reet	Cu. Feet	Wt., Lbs.	Mannours	Manhours
	a Collateral Costs (continued)																				
4a.3.4	Spent Fuel Capital and Transfer Prairie Island Indian Community Payments	-	-	-	-	-	-	2,163 1,660	324	2,487 1,660	-	2,487 1,660		-	-	-	-	-	-	-	-
4a.3.5 4a.3	Subtotal Period 4a Collateral Costs	2	213	4	- 8	-	17	3,823	363	4,430			24	-	39	-	-	-	2,337	- 8	-
								-,-		,		,							,		
Period 4a 4a.4.1	a Period-Dependent Costs Decon supplies	100	_	_	_	_		_	25	125	125	-	_	_	_	_	_	_		_	_
4a.4.2	Insurance	-	-	-	-	-	-	643	64		708		-	-	-	-	-	-	-	-	-
4a.4.3	Property taxes	-	-	-	-	-	-	4,441	444		2,985		-	-	-	-	-	-	-	-	-
4a.4.4 4a.4.5	Health physics supplies Heavy equipment rental	-	1,744 3,325	-	-	-	-	-	436 499		2,181 3,824		-	-	-	-	-	-	-	-	-
4a.4.6	Disposal of DAW generated	-	3,328	59	24	-	245		71		398		-	-	2,972	-	-	-	59,446	97	-
4a.4.7	Plant energy budget	-	-	-	-	-	-	2,047	307	2,354	2,354	-	-	-	-	-	-	-	-	-	-
4a.4.8	NRC ISFSI Fees	-	-	-	-	-	-	159	16		-	175	-	-	-	-	-	-	-	-	-
4a.4.9 4a.4.10	NRC Fees Emergency Planning Fees	-	-	-	-	-	-	643 99	64 10		707	108	-	-	-	-	-	-	-	-	-
4a.4.11	Fixed Overhead	-	-	_	-	-	_	1,581	237	1,818	1,818		_	-	-	-	-	-	-	-	-
4a.4.12	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	565	85				-	-	-	-	-	-	-	-	-
4a.4.13	ISFSI Operating Costs	-	-	-	-	-	-	74	11	86	-	86	-	-	-	-	-	-	-	-	-
4a.4.14 4a.4.15	Railroad Track Maintenance Remedial Actions Surveys	-	-	-	-	-	-	83 1.489	12 223		96 1,712		-	-	-	-	-	-	-	-	-
4a.4.16	Security Staff Cost	-	-	-	-	-	-	6,863	1,029				-	-	-	-	-	-	-	-	105,553
4a.4.17	DOC Staff Cost	-	-	-	-	-	-	17,190	2,579		19,769		-	-	-	-	-	-	-	-	189,964
4a.4.18	Utility Staff Cost Subtotal Period 4a Period-Dependent Costs	100	- 000	- 59	- 9.4	-	945	21,887	3,283	25,170	24,389		-	-	- 9.079	-	-	-	- 50 440	97	343,058
4a.4	Subtotal Period 4a Period-Dependent Costs	100	5,069	99	24	-	245	57,763	9,396	72,656	67,657	4,999	-	-	2,972	-	-	-	59,446	97	638,574
4a.0	TOTAL PERIOD 4a COST	248	27,554	17,799	3,516	6,311	19,695	62,142	34,369	171,634	160,006	9,146	2,482	40,406	32,786	125	742	-	4,000,995	165,725	643,828
PERIOD	O 4b - Site Decontamination																				
Period 4b	b Direct Decommissioning Activities																				
4b.1.1	Remove spent fuel racks	314	35	86	41	=	703	-	356	1,535	1,535	÷	-	-	2,092	-	-	-	132,919	576	-
Disposal	of Plant Systems																				
4b.1.2.1		-	2	0	0	1	-	-	1	3	3	-	-	3	-	-	-	-	140	26	-
4b.1.2.3 4b.1.2.4		-	5 1,263	- 89	90	- 753	973	-	1 694	5 3,861	3,861	-	5	4,498	2,846	-	-	-	366,565	65 17,235	-
		-	1,265 858	25		2,079		-	543	3,597	3,597		-	12,427		-	-	-	504,675	11,242	-
		-	74	-	-	-,	-	-	11		-	-	85		-	-	-	-	-	1,086	-
4b.1.2.7		-	304	7		569		-	166		1,070		-	3,400		-	-	-	138,090	3,971	-
4b.1.2.8 4b.1.2.9		-	30 93	0 2	_	18 145		-	10 46	59 293	59 293		-	105 868		-	-	-	4,278 35,249	401 1,217	-
	Containment Spray - NCA Containment Ventilation	-	229	24	-	828		-	254	1.635	1,635		-	4.951		-	-	-	247,952	3,278	-
4b.1.2.11	Cooling Water	-	163	-	-	-	-	-	24		-	-	187	-	-	-	-	-	-	2,396	-
	Cooling Water - RCA	-	658	16	57	1,293	-	-	368	2,392	2,392	-	-	7,728	-	-	-	-	313,832	8,594	-
	B D1 Emergency Diesel D2 Emergency Diesel	-	50 36	-	-	-	-	-	8	58 41	-	-	58 41		-	-	-	-	-	730 522	-
	5 Diesel Rooms Ventilation	-	9	_	_	-	_		1	11	-	-	11		_	-	_	_	_	135	-
	Electrical - Clean	-	1,905	-	-	-	-	-	286	2,191	-	-	2,191	-	-	-	-	-	-	26,981	-
	Electrical - Contaminated Electrical - Contaminated - Fuel Pool	-	553 137	7 2	20	423 103		-	213 53	1,248 307	1,248 307	-	-	2,527 615			-	-	108,690	7,488 1,857	-
	Electrical - Contaminated - Fuel Pool Electrical - Decontaminated	-	3,787	48		3,940			1,569	9,518	9,518	-	-	23,551			-	-	26,449 956,401	49,378	-
	Electrical - Decontaminated - Fuel Pool	-	947	12		986		-	392	2,380	2,380		_	5,893		-	-	-	239,327	12,340	-
	Fuel Handling	-	108	6	11	152	73	-	70		421	-	-	908	218	-	-	-	50,723	1,595	-
	Puel Oil HVAC - Clean	-	121 120	-	-	-	-	-	18 18	140 138	-	-	140 138	-	-	-	-	-	-	1,697 1,891	-
	HVAC - Contaminated	-	337	- 9	26	546	41		181	1,141	1,141	-	138	3,261	123	-	-	-	140,257	4,335	-
	HVAC - Contaminated - Fuel Pool	-	145	4	11	234		-	78	489			-	1,398			-	-	60,110	1,858	-
	Incore Instrumentation	-	25	1	2	10		-	13				-	60			-	-	6,058	382	-
	Misc Drains & Vents Reactor Coolant	-	212 283	15 21				-	110 150		592 796		-	390 344			-	-	49,062 64,085	2,764 3,865	-
	Reactor Coolant Reactor Hot Sampling	-	283 125	12		58 11		-	65	339	339		-	344 66			-	-	25,063	1,611	-
4b.1.2.30	Reactor Makeup	-	73	-	- '	-	-	-	11	84	-	-	84	-	-	-	-	-	· -	1,042	-
	Reactor Vessel	-	19	1	0	4		-	7	36	36		-	26			-	-	2,000	260	-
	Residual Heat Removal Safeguards Chilled Water	-	378 18	85	86	484	1,105	-	465 3	2,603 20	2,603	-	20	2,895	3,252	-	-	-	326,425	5,374 259	-
	Safeguards Chilled Water - RCA	-	85	1	4	83	-	-	34		207	-	- 20	495		-	-	-	20,100	1,019	-
	Safety Injection	-	809	42	73			-	486	2,939	2,939	-	-	6,788		-	-	-	349,908	11,276	-

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Table I-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(Tr	iousands	of 2020 Dollar	rs)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
	Plant Systems (continued)																				
4b.1.2.36 S	sampling Shield Bldg Ventilation	-	54 125	4 14	-	10 360	37 165	-	25 132	133 821	133 821	-	-	59 2,152	107 491	-	-	-	9,420 118,583	731 1,811	-
	Spent Fuel Pool Cooling	-	324	34			450	-	222	1,198	1,198	-	-	2,152 806	1,325		-	-	117,816	4,400	-
	station & Instrument Air	-	20	-		-	-	-	3	23	-	-	23	-		-	-	-	-	300	-
	tation & Instrument Air - RCA	-	81	1	2	56	-	-	29	169	169	-	-	332	-	-	-	-	13,496	1,053	-
	Station & Instrument Air - RCA Fuel Pool	-	20	0	_	14	-	-	7 8	42	42	-	-	83	-	-	-	-	3,374	263	-
4b.1.2.43 U	Curbine Bldg Traps & Drains Init Coolers	-	50 42	-		-	-	-	6	58 49	-	-	58 49	-	-		-	-	-	767 611	-
	Jnit Coolers - RCA	=	55	0		39	-	-	20	115	115	-	-	230	-	-	-	-	9,348	683	-
4b.1.2 T	otals	-	14,735	481	883	14,533	4,126	-	6,807	41,565	38,474	-	3,091	86,861	12,129	-	-	-	4,307,475	198,796	-
4b.1.3 S	caffolding in support of decommissioning	-	1,363	4	2	38	6	-	349	1,763	1,763	-	-	207	18	-	-	-	10,477	9,030	-
	ation of Site Buildings leactor	1.096	2,527	240	1,236	373	7,080		3,215	15,766	15,766			2,230	67,325				3,286,372	45,729	
	Backwash Waste Receiving Tank	1,050	2,527	240	,		97	-	3,213	15,766	15,766	-	-	2,230	929		-	-	43,896	266	-
	otals	1,096	2,552	243			7,177	-	3,248	15,941	15,941	-	-	2,230	68,254	-	-	-	3,330,268	45,995	-
	Prepare/submit License Termination Plan Receive NRC approval of termination plan	-	-	-	-	-	-	526	79	605 a	605	-	-	-	-	-	-	-	-	-	4,096
	Subtotal Period 4b Activity Costs	1,410	18,685	814	2,179	14,945	12,012	526	10,839	61,410	58,319	-	3,091	89,298	82,494	-	-	_	7,781,139	254,398	4,096
	dditional Costs	,	-,		,	,-	,-		.,	,			-,		- , -				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,,,,,	,
	icense Termination Survey Planning	-	-	-	-	-	-	1,037	311	1,348	1,348	-	-	-	-	-	-	-	-	-	6,240
	Excavation of Underground Services	-	1,175	-	-	-	-	225	328	1,728	1,728	-	-	-	-	-	-	-	-	7,411	-
	Operational Equipment Subtotal Period 4b Additional Costs	-	1,175	11 11			-	1,262	97 736	751 3,827	751 3,827	-	-	5,880 5,880	-	-	-	-	147,000 147,000	16 7,427	6,240
Period 4h Co	ollateral Costs																				
	Process decommissioning water waste	5	-	9	16	-	37	-	15	83	83	-	-	-	85	-	-	-	5,092	17	-
	mall tool allowance	-	307	-	-	-	-	-	46	353	353	-	-	-	-	-	-	-	-	-	-
4b.3.4 D	Decommissioning Equipment Disposition Prairie Island Indian Community Payments	-	-	130		1,112		2,225	234	1,722 2,225	1,722	2,225	-	6,000		-	-	-	303,608	147	-
	raine Island Indian Community Payments Subtotal Period 4b Collateral Costs	5	307	139	84	1,112	215		296	4,382	2,158	2,225 2,225	-	6,000	614	-	-	-	308,700	163	-
Period 4b Pe	eriod-Dependent Costs																				
	Decon supplies	564	-	-	-	-	-	-	141	705	705	-	-	-	-	-	-	-	-	-	-
	nsurance Property taxes	-	-	-	-	-	-	862 5,819	86 582	949 6,401	949 3,853	2,548	-	-	-	-	-	-	-	-	-
	Health physics supplies	-	2,435	-	-	-	-		609	3,043	3,043	2,540	-	-	-	-	-	-	-	-	-
4b.4.5 H	Ieavy equipment rental	-	4,577	-	-	-	-	-	687	5,263	5,263	-	-	-	-	-	-	-	-	-	-
	Disposal of DAW generated	÷	-	77	31	-	322	-	93	523	523	-	-	-	3,905	-	-	-	78,097	127	-
	Plant energy budget NRC ISFSI Fees	-	-	-	-	-	-	2,165 213	325 21	2,490 234	2,490	234	-	-	-	-	-	-	-	-	-
	VRC Fees	-	-	-	-	-	-	862	86	948	948	-	_	-	-	-	-	-	-	_	-
	Emergency Planning Fees	-	-	-	-	-	-	132	13	145	-	145	-	-	-	-	-	-	-	-	-
	ixed Overhead	-	-	-	-	-	-	2,118 757	318	2,436 870	2,436	-	-	-	-	-	-	-	-	-	-
	iquid Radwaste Processing Equipment/Services SFSI Operating Costs	-	_	-	-	-		100	113 15	115	870	115	-	-	_	-	_	-	-	-	-
	Railroad Track Maintenance	-	-	-	-	-	-	111	17	128	128	-	-	-	-	-	-	-	-	-	-
	Remedial Actions Surveys	-	-	-	-	-	-	1,995	299	2,294	2,294	-	-	-	-	-	-	-	-	-	-
	Security Staff Cost	-	-	-	-	-	-	1,202	180	1,383	462	921	-	-	-	-	-	-	-	-	20,373
	OOC Staff Cost Jtility Staff Cost	-	_	-	-	-		15,039 18,793	2,256 2,819	17,294 21,612	17,294 20,790	821	-	-	_	-	_	-	-	-	174,093 311,145
	Subtotal Period 4b Period-Dependent Costs	564	7,011	77	31	-	322	50,169	8,660	66,835	62,051	4,784	-	-	3,905	-	-	-	78,097	127	505,611
4b.0 T	OTAL PERIOD 4b COST	1,979	27,178	1,042	2,330	16,663	12,549	54,182	20,531	136,453	126,354	7,009	3,091	101,178	87,013	-	-	-	8,314,936	262,116	515,947
PERIOD 4e	e - Delay before License Termination																				
Period 4e Di	rect Decommissioning Activities																				
	ollateral Costs Prairie Island Indian Community Payments							986		986		986									
	rairie Island Indian Community Payments Subtotal Period 4e Collateral Costs	-	-	-	-	-	-	986 986	-	986 986	-	986 986	-	-	-	-	-	-	-	-	-

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Table I-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(11	iousunus (	oi 2020 Donai	,											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activi Inde		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet		Craft Manhours	Contractor Manhours
Period 4	le Period-Dependent Costs																				
4e.4.1	Insurance	-	-	-	-	-	-	382	38	420	-	420	-	-	-	-	-	-	-	-	-
4e.4.2	Property taxes	-	-	-	-	-	-	2,498	250	2,748	1,624	1,124	-	-	-	-	-	-	-	-	-
4e.4.3	Health physics supplies	-	87	-		-	-	-	22	109	109	-	-	-	-	-	-	-	-	-	-
4e.4.4	Disposal of DAW generated NRC ISFSI Fees	-	-	2	1	-	6	94	2 9	11 104	11	104	-	-	79	-	-	-	1,573	3	-
4e.4.6 4e.4.7	NRC ISFSI rees NRC Fees	-	-	-	-	-	-	162	16	178	178	104	-	-	-	-	-	-	-	-	-
4e.4.7	Emergency Planning Fees		-	-			-	58	6	64	- 170	64	-	-	-	-	-	-	-	-	-
4e.4.9	Fixed Overhead	_	-	-	-	-	-	939	141	1,079	1,079	-	-	_	-	-	-		_	-	-
4e.4.10	ISFSI Operating Costs	-	-	-	-	-	-	44	7	51	-	51	-	-	-	-	-	-	-	-	-
4e.4.11	Railroad Track Maintenance	-	-	-	-	-	-	49	7	57	57	-	-	-	-	-	-	-	-	-	-
4e.4.12		-	-	-	-	-	-	696	104	801	742		-	-	-	-	-	-	-	-	11,488
4e.4	Subtotal Period 4e Period-Dependent Costs	-	87	2	1	-	6	4,923	602	5,622	3,800	1,822	-	-	79	-	-	-	1,573	3	11,488
4e.0	TOTAL PERIOD 4e COST	-	87	2	1	-	6	5,909	602	6,607	3,800	2,807	-	-	79	-	-	-	1,573	3	11,488
PERIO	D 4f - License Termination																				
Period	of Direct Decommissioning Activities																				
4f.1.1	ORISE confirmatory survey	-	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-
4f.1.2	Terminate license									a											
4f.1	Subtotal Period 4f Activity Costs	-	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-
	f Additional Costs																				
4f.2.1	License Termination Survey	-	-	-	-	-	-	3,199	960	4,159	4,159	-	-	-	-	-	-	-	-	40,531	3,120
4f.2	Subtotal Period 4f Additional Costs	-	-	-	-	-	-	3,199	960	4,159	4,159	-	-	-	-	-	-	-	-	40,531	3,120
Period 4	f Collateral Costs																				
4f.3.1	DOC staff relocation expenses	-	-	-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-
4f.3.2	Spent Fuel Capital and Transfer	-	-	-	-	-	-	218	33	250	-	250	-	-	-	-	-	-	-	-	-
4f.3.3	Prairie Island Indian Community Payments	-	-	-	-	-	-	934		934		934	-	-	-	-	-	-	-	-	-
4f.3	Subtotal Period 4f Collateral Costs	-	-	-	-	-	-	2,416	222	2,638	1,454	1,185	-	-	-	-	-	-	-	-	=
	f Period-Dependent Costs																				
4f.4.1	Insurance	-	-	-	-	-	-	362	36	398	-	398	-	-	-	-	-	-	-	-	-
4f.4.2	Property taxes	-	-	-	-	-	-	2,306	231	2,537	1,469	1,068	-	-	-	-	-	-	-	-	-
4f.4.3	Health physics supplies	-	501		- 3	-	-	-	125	626	626	-	-	-	-	-	-	-		-	-
4f.4.4 4f.4.5	Disposal of DAW generated Plant energy budget	-	-	7	3	-	28	243	8 36	45 279	45 279	-	-	-	334	-	-	-	6,685	11	-
4f.4.6	NRC ISFSI Fees	-	-	-	-	-	-	243 90	36 9	98	279	98	-	-	-	-	-	-	-	-	-
4f.4.7	NRC Fees	-	_	-	-	-	-	422	42	465	465	-	-	_	-	-	-		-	-	-
4f.4.8	Emergency Planning Fees	-	_	_	-	-	-	55	6	61	-	61	-	_	-	-	_	_	-	-	_
4f.4.9	Fixed Overhead	-	-	-	-	-	-	890	133	1,023	1,023		-	-	-	-	-	-	-	-	-
4f.4.10	ISFSI Operating Costs	-	-	-	-	-	-	42	6	48	-	48	-	-	-	-	-	-	-	-	-
4f.4.11	Railroad Track Maintenance	-	-	-	-	-	-	47	7	54	54	-	-	-	-	-	-	-	-	-	-
4f.4.12	Security Staff Cost	-	-	-	-	-	-	1,835	275	2,111	927	1,184	-	-	-	-	-	-	-	-	27,614
4f.4.13	DOC Staff Cost	-	-	-	-	-	-	4,238	636	4,874	4,874	-	-	-	-	-	-	-	-	-	46,283
4f.4.14 4f.4	Utility Staff Cost Subtotal Period 4f Period-Dependent Costs	-	501	7	3	-	28	4,011 $14,541$	602 2,153	4,613 $17,232$	4,175 13,936	438 3,296	-	-	334	-	-	-	6,685	11	59,507 133,404
4f.0	TOTAL PERIOD 4f COST	-	501	7	3	-	28	20,322	3,384	24,245	19,764	4,481	-	-	334	-	-		6,685	40,542	136,524
PERIO	D 4 TOTALS	2,227	55,320	18,849	5,850	22,974	32,278	142,555	58,887	338,939	309,924	23,443	5,573	141,584	120,212	125	742	-	12,324,190	468,386	1,307,787
PERIO	D 5b - Site Restoration																				
Period	b Direct Decommissioning Activities																				
Demoli	ion of Remaining Site Buildings																				
5b.1.1.1	Reactor	-	4,644		-	-	-	-	697	5,341	-	-	5,341	-	-	-	-	-	-	44,669	-
	Condensate Storage Tank Foundation	-	3		-	-	-	-	0	4	-	-	4	-	-	-	-	-	-	16	-
	Structures below 3' below grade	-	1,785		-	-	-	-	268	2,052	-	-	2,052	-	-	-	-	-	-	9,238	-
	Turbine	-	2,139		-	-	-	-	321	2,460	-	-	2,460	-	-	-	-	-	-	21,985	-
5b.1.1.5	Turbine Pedestal Totals	-	365		-	-	-	-	55 1 240	10.276	-	-	420	-	-	-	-	-	-	1,857 77,765	-
5b.1.1	Totals	-	8,936	-	-	-	-	-	1,340	10,276	-	-	10,276	-	-	-	-	-	-	77,765	-

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Table I-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Volumes		Burial /		Utility and
Activity		Decon	Removal		Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Site Clos	seout Activities																				
5b.1.2	Grade & landscape site	-	448	-	-	-	-	-	67	515	-	-	515	-	-	-	-	-	-	921	-
5b.1.3	Final report to NRC	-	-	-	-	-	-	200	30	231	231	-	-	-	-	-	-	-	-	-	1,56
5b.1	Subtotal Period 5b Activity Costs	-	9,384	-	-	-	-	200	1,438	11,022	231	-	10,792	-	-	-	-	-	-	78,686	1,56
Period 5h	b Additional Costs																				
5b.2.1	Clean Concrete Disposal	_	2,242	-	-	-	-	5	337	2,583	-	-	2,583	_	-	_	-	_	-	8,386	-
5b.2.2	Intake Structure Cofferdam	-	623		-	-	-	-	93	716	-	-	716	-	-	-	-	-	-	5,168	-
5b.2.3	Construction Debris	-	-	-	-	-	-	10	2	12	-	-	12	-	-	-	-	-	-	-	-
5b.2.4	Backfill	-	3,011	-	-	-	-	-	452	3,462	-	-	3,462	-	-	-	-	-	-	2,904	-
5b.2.5	Disposition of Original Casks	-	24			-	2,390		728	3,640	3,640	-	-	-	8,929	-	-	-	1,059,612	146	-
5b.2	Subtotal Period 5b Additional Costs	-	5,899	80	418	-	2,390	15	1,611	10,413	3,640	-	6,773	-	8,929	-	-	-	1,059,612	16,604	-
Period 5b	b Collateral Costs																				
5b.3.1	Small tool allowance	-	122	-	-	-	-	-	18	140	-	-	140	-	-	-	-	-	-	-	-
5b.3.2	Spent Fuel Capital and Transfer	-	-	-	-	-	-	5,519	828	6,347	-	6,347	-	-	-	-	-	-	-	-	-
5b.3.3	Prairie Island Indian Community Payments	-	-	-	-	-	-	2,649	-	2,649	-	2,649	-	-	-	-	-	-	-	-	-
5b.3	Subtotal Period 5b Collateral Costs	-	122	-	-	-	-	8,168	846	9,136	-	8,996	140	-	-	-	-	-	-	-	-
Period 5b	b Period-Dependent Costs																				
5b.4.1	Insurance	-	-	-	-	-	-	513	51	565	-	565	-	-	-	-	-	-	-	-	-
5b.4.2	Property taxes	-	-	-	-	-	-	5,904	590	6,494	-	2,663	3,831	-	-	-	-	-	-	-	-
5b.4.3	Heavy equipment rental	-	7,144	-	-	-	-	-	1,072	8,215	-	-	8,215	-	-	-	-	-	-	-	-
5b.4.4	Plant energy budget	-	-	-	-	-	-	344	52	395	-	395	-	-	-	-	-	-	-	-	-
5b.4.5	NRC ISFSI Fees	-	-	-	-	-	-	326	33	359	-	359	-	-	-	-	-	-	-	-	-
5b.4.6	Emergency Planning Fees	-	-	-	-	-	-	157	16	173	-	173	-	-	-	-	-	-	-	-	-
5b.4.7	Fixed Overhead	-	-	-	-	-	-	1,024	154	1,178	-	781	397	-	-	-	-	-	-	-	-
5b.4.8	ISFSI Operating Costs	-	-	-	-	-	-	119	18	136	-	136	-	-	-	-	-	-	-	-	-
5b.4.9	Railroad Track Maintenance	-	-	-	-	-	-	133	20	152	(0)		56	-	-	-	-	-	-	-	
5b.4.10	Security Staff Cost	-	-	-	-	-	-	4,976	746	5,722	0	,	412	-	-	-	-	-	-	-	74,4
5b.4.11	DOC Staff Cost	-	-	-	-	-	-	10,921	1,638	12,559	-	1.050	12,559 4.668	-	-	-	-	-	-	-	116,8
5b.4.12	Utility Staff Cost	-		-	-	-	-	5,170	776	5,946	-	1,278	,	-	-	-	-	-	-	-	76,6
5b.4	Subtotal Period 5b Period-Dependent Costs	-	7,144	-	-	-	-	29,587	5,165	41,895	0	11,757	30,139	-	-	-	-	-	-	-	267,95
5b.0	TOTAL PERIOD 5b COST	-	22,548	80	418	-	2,390	37,970	9,060	72,467	3,871	20,753	47,843	-	8,929	-	-	-	1,059,612	95,290	269,51
PERIOR	D 5c - Fuel Storage Operations/Shipping																				
Period 5c	c Direct Decommissioning Activities																				
	c Collateral Costs																				
5c.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	89,253	13,388	102,641	-	102,641	-	-	-	-	-	-	-	-	-
5c.3.2	Prairie Island Indian Community Payments	-	-	-	-	-	-	27,796	-	27,796	-	27,796	-	-	-	-	-	-	-	-	-
5c.3	Subtotal Period 5c Collateral Costs	-	-	-	-	-	-	117,049	13,388	130,437	-	130,437	-	-	-	-	-	-	-	-	-
	c Period-Dependent Costs																				
5c.4.1	Insurance	-	-	-	-	-	-	5,388	539	5,927	-	5,927	-	-	-	-	-	-	-	-	-
5c.4.2	Property taxes	-	-	-	-	-	-	31,074	3,107	34,181	-	34,181	-	-	-	-	-	-	-	-	-
5c.4.3	Plant energy budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5c.4.4	NRC ISFSI Fees	-	-	-	-	-	-	3,422	342	3,764	-	3,764	-	-	-	-	-	-	-	-	-
5c.4.5	Emergency Planning Fees	-	-	-	-	-	-	1,650	165	1,815	-	1,815	-	-	-	-	-	-	-	-	-
5c.4.6	Fixed Overhead	-	-	-	-	-	-	3,626	544	4,170	-	4,170	-	-	-	-	-	-	-	-	-
5c.4.7	ISFSI Operating Costs	-	-	-	-	-	-	1,245	187	1,432	-	1,432	-	-	-	-	-	-	-	-	-
5c.4.8	Railroad Track Maintenance	-	-	-	-	-	-	1,391	209	1,600	-	1,600	-	-	-	-	-	-	-	-	CO 4 O
5c.4.9	Security Staff Cost	=	-	-	-	=	-	42,996	6,449	49,446	-	49,446	-	-	-	-	-	-	-	-	624,8
5c.4.10	DOC Staff Cost	=	-	-	-	=	-	3,411	512	3,922	-	3,922	-	-	-	-	-	-	-	-	23,1
5c.4.11	Utility Staff Cost Subtatal Paried 5a Paried Dependent Costs	=	-	-	-	=	-	21,001	3,150 15,204	24,151 130,408	-	24,151 130,408	-	-	-	-	-	-	-	-	306,6 954,6
5c.4	Subtotal Period 5c Period-Dependent Costs	-	-	-	-	-	-	115,204	15,204	150,408	-	150,408	-	-	-	-	-	-	-	-	994,6
5c.0	TOTAL PERIOD 5c COST	-	_	-	-	-	-	232,252	28,592	260,844	-	260,844	-	-	-	-	-	-	-	-	954,61

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Table I-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							,			Ť											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
	o 5d - GTCC shipping	0000		0000	0000	00505	0000	00505	convingency	Costs	0000	COSUS	COSCO	04.100	0417000	04.1000	04.700	currect	770, 200		Mamours
Period 5d	l Direct Decommissioning Activities																				
	Steam Supply System Removal			1 444			0.000		1 000	11,787	11.505							1.550	044.000		
5d.1.1.1 5d.1.1	Totals	-	-	1,444 1,444		-	8,680 8,680	-	1,663 1,663	11,787	11,787 11,787	-	-	-	-	-	-	1,773 1,773	344,823 344,823	-	-
5d.1	Subtotal Period 5d Activity Costs	-	-	1,444	-	-	8,680	-	1,663	11,787	11,787	-	-	-	-	-	-	1,773	344,823	-	-
	l Collateral Costs																				
5d.3.1 5d.3.2	Spent Fuel Capital and Transfer Prairie Island Indian Community Payments	-	-	-	-	-	-	28 48	4	32 48	-	32 48	-	-	-	-	-	-	-	-	-
5d.3	Subtotal Period 5d Collateral Costs	-	-	-	-	-	-	76	4	80	-	80	-	-	-	-	-	-	-	-	-
Period 5d	l Period-Dependent Costs																				
5d.4.1	Insurance	-	-	-	-	-	-	9	1	10			-	-	-	-	-	-	-	-	-
5d.4.2 5d.4.4	Property taxes NRC ISFSI Fees	-	-	-	-	-	-	53 4	5 0	58 4	58	- 4	-		-	-	-	-	-	-	-
5d.4.5	Emergency Planning Fees	-	-	-	-	-	-	3	0	3	-	3	-	-	-	-	-	-	-	-	-
5d.4.6 5d.4.7	Fixed Overhead Railroad Track Maintenance	-	-	-	-	-	-	6	1	7 3	7 3	-	-	-	-	-	-	-	-	-	-
5d.4.8	Security Staff Cost	-	-	-	-	-	-	$\frac{2}{74}$	11	85	85		-		-	-	-			-	1,077
5d.4.9 5d.4	Utility Staff Cost Subtotal Period 5d Period-Dependent Costs	=	-	-	-	-	-	19 171	3 22	22 194	22 186		-	-	-	-	-	-	-	-	269 1,346
	•	-	-	-	-	-	-						-	-	-	-	-	-	-	-	,
5d.0	TOTAL PERIOD 5d COST	-	-	1,444	-	-	8,680	247	1,689	12,060	11,973	87	-	-	-	-	-	1,773	344,823	-	1,346
PERIOD	5e - ISFSI Decontamination																				
Period 5e	Direct Decommissioning Activities																				
	Additional Costs																				
5e.2.1 5e.2	License Termination ISFSI Subtotal Period 5e Additional Costs	-	0				142 142	1,197 1,197	339 339	1,696 1,696	1,696 1,696	-	-	-	424 424		-	-	65,754 65,754	5,882 5,882	
			· ·	-	1.		112	1,101	550	1,000	1,000				121				00,104	0,002	1,101
Period 5e 5e.4.1	Period-Dependent Costs Insurance	_	_	_	_	_	_	93	23	116	116	_	_	_	_	_	_	_	_	_	_
5e.4.2	Property taxes	-	-	-	-	-	-	56	14	69	69		-	-	-	-	-	-	-	-	-
5e.4.3 5e.4.4	Plant energy budget Fixed Overhead	=	-	-	-	-	-	11 54	3 14	13 68			-	-	-	-	-	-	-	-	-
5e.4.4	Railroad Track Maintenance	-	-	-	-	-	-	21	5	26	26	-	-	-	-	-	-	-	-	-	-
5e.4.6	Security Staff Cost	-	-	-	-	-	-	174	43	217	217		-	-	-	-	-	-	-	-	2,500
5e.4.7 5e.4	Utility Staff Cost Subtotal Period 5e Period-Dependent Costs	-	-	-	-	-	-	129 536	32 134	161 670	161 670		-		-	-	-	-	-	-	1,896 4,396
5e.0	TOTAL PERIOD 5e COST	-	0	2	17	-	142	1.733	473	2.367	2.367	-	-	_	424	_	-	_	65.754	5.882	,
PERIOD	of - ISFSI Site Restoration							,		,	,									,	,
	Direct Decommissioning Activities																				
Pariod 5f	Additional Costs																				
5f.2.1	Demolition and Site Restoration of ISFSI	-	1,121	-	-	-	-	161	192	1,474	_	-	1,474	-	-	-	-	-	-	4,846	
5f.2	Subtotal Period 5f Additional Costs	-	1,121	-	=	-	-	161	192	1,474	-	-	1,474	-	-	-	-	-	-	4,846	80
	Collateral Costs																				
5f.3.1 5f.3	Small tool allowance Subtotal Period 5f Collateral Costs	-	7 7		-	-	-	-	1 1	8	-	-	8		-	-	-	-	-	-	-
01.0	Danioual I citou of Collateral Costs	-	,	-	-	-	-	-	1	0	-	-	0	-	-	-		-	-	-	-

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Xcel Energy

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

Table I-1 Prairie Island SAFSTOR Unit 1 SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage (Thousands of 2020 Dollars)

Activity		Decon	Removal	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Total	Total	NRC Lic. Term.	Spent Fuel Management	Site Restoration	Processed Volume	Class A	Burial V Class B	Volumes Class C	GTCC	Burial / Processed	Craft	Utility and Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Period 5f F	Period-Dependent Costs																				
	Property taxes	-	-	-	-	-	-	28	3	31	-	-	31	-	-	-	-	-	-	-	-
5f.4.3	Heavy equipment rental	-	59	-	-	-	-	-	9	68	-	-	68	-	-	-	-	-	-	-	-
5f.4.4	Plant energy budget	-	-	-	-	-	-	6	1	6	-	-	6	-	-	-	-	-	-	-	-
5f.4.5	Fixed Overhead	-	-	-	-	-	-	28	4	32	-	-	32	-	-	-	-	-	-	-	-
5f.4.6	Railroad Track Maintenance	-	-	-	-	-	-	11	2	12	-	-	12	-	-	-	-	-	-	-	-
	Security Staff Cost	-	-	-	-	-	-	89	13	102	-	-	102	-	-	-	-	-	-	-	1,281
	Utility Staff Cost	-	-	-	-	-	-	55	8	63	-	-	63	-	-	-	-	-	-	-	795
5f.4	Subtotal Period 5f Period-Dependent Costs	-	59	-	-	-	-	216	40	315	-	-	315	-	-	-	-	-	-	-	2,076
5f.0	TOTAL PERIOD 5f COST	-	1,187	-	-	-	-	377	233	1,798	-	-	1,798	-	-	-	-	-	-	4,846	2,156
PERIOD	5 TOTALS	-	23,736	1,525	435	-	11,212	272,580	40,048	349,536	18,210	281,684	49,641	-	9,353	-	-	1,773	1,470,189	106,017	1,233,184
TOTAL CO	OST TO DECOMMISSION	6,192	94,084	20,994	6,793	23,152	45,944	1,425,301	233,914	1,856,374	963,420	836,113	56,842	147,716	151,089	125	742	1,773	14,528,860	652,634	7,387,143

TOTAL COST TO DECOMMISSION WITH 14.42% CONTINGENCY:	\$1,856,374	thousands of 2020 dollars
TOTAL NRC LICENSE TERMINATION COST IS 51.9% OR:	\$963,420	thousands of 2020 dollars
SPENT FUEL MANAGEMENT COST IS 45.04% OR:	\$836,113	thousands of 2020 dollars
NON-NUCLEAR DEMOLITION COST IS 3.06% OR:	\$56,842	thousands of 2020 dollars
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	151,957	Cubic Feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	1,773	Cubic Feet
TOTAL SCRAP METAL REMOVED:	33,003	Tons
TOTAL CRAFT LABOR REQUIREMENTS:	652,634	Man-hours

End Notes: n/a - indicates that this activity not charged as decommissioning expense a - indicates that this activity performed by decommissioning staff 0 - indicates that this value is less than  $0.5\ but$  is non-zero A cell containing " - " indicates a zero value

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Table I-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(Th	ousands o	of 2020 Dollars	s)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B	Class C Cu. Feet	GTCC Cu. Feet		Craft Manhours	Contractor Manhours
	•	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	cu. reet	cu. Feet	Cu. Feet	Wt., Los.	Mannours	Maillours
PERIOD 1a - Sh	utdown through Transition																				
Period 1a Direct I	Decommissioning Activities																				
	OR site characterization survey	-	-	-	-	-	-	415	124	539	539	-	-	-	-	-	-	-	-	-	-
	re preliminary decommissioning cost ation of Cessation of Operations	-	-	-	-	=	-	71	11	82 a	82	-	-	-	-	-	-	-	-	-	556
1a.1.4 Remove	e fuel & source material									n/a											
	ation of Permanent Defueling vate plant systems & process waste									a a											
1a.1.7 Prepar	e and submit PSDAR	-	-	-	-	-	-	110	16	126	126		-	-	-	-	-	-	-	-	855
	v plant dwgs & specs. m detailed rad survey	-	-	-	-	-	-	71	11	82 a	82	-	-	-	-	-	-	-	-	-	556
	ate by-product inventory	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
	roduct description ed by-product inventory	-	-	-	-	-	-	55 82	8 12	63 95	63 95	-	-	-	-	-	-	-	-	-	428 641
	major work sequence	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
	m SER and EA	-	-	-	-	-	-	170	26	196 474	196		-	-	-	-	-	-	-	-	1,326
	re/submit Defueled Technical Specifications m Site-Specific Cost Study	-	-	-		-	-	412 275	62 41	474 316	474 316		-	-	-	-	-	-	-	-	3,207 2,138
	re/submit Irradiated Fuel Management Plan	-	-	-	-	-	-	55	8	63	63		-	-	-	-	-	-	-	-	428
Activity Specificat																					
1a.1.18.1 Prepar 1a.1.18.2 Plant s	re plant and facilities for SAFSTOR	-	-	-	-	-	-	270 229	41 34	311 263	311 263		-	-	-	-	-	-	-	-	2,104 1,782
	structures and buildings	-	-	-	-	-	-	171	26	197	197	-	-	-	-	-	-	-	-	-	1,334
1a.1.18.4 Waste		-	-	-	-	-	-	110 110	16 16	126 126	126 126		-	-	-	-	-	-	-	-	855 855
1a.1.18.5 Facility	y and site dormancy	-	-	-	-	-	-	891	134	1,024	1,024		-		-	-	-	-		-	6,930
	,									,	,										,
Detailed Work Pro 1a.1.19.1 Plant s		_	_	_	_	_	_	65	10	75	75	-	_	_	_	-	-	_	_	_	506
	y closeout & dormancy	-	-	-	-	-	-	66	10	76	76		-	-	-	-	-	-	-	-	513
1a.1.19 Total		-	-	-	-	-	-	131	20	151	151	-	-	-	-	-	-	-	-	-	1,019
	e vacuum drying system	-	-	-	-	-	-	5	1	6	6	-	-	-	-	-	-	-	-	-	43
	de-energize non-cont. systems & dry NSSS									a a											
	de-energize contaminated systems									a											
	secure contaminated systems al Period 1a Activity Costs	-	_	_	-	-	-	2,854	490	a 3,345	3,345	-	-	_	-	-	-	-	-	_	18,981
	•							,		-,-	-,-										-,
Period 1a Collater 1a.3.1 Spent 1	rai Costs Fuel Capital and Transfer	-	_	_	-	-	-	1,330	199	1,529	-	1,529	-	_	-	-	-	-	_	-	-
1a.3.2 Retenti	ion and Severance	-	-	-	-	-	-	8,394	1,259	9,653	9,653		-	-	-	-	-	-	-	-	-
	s Island Indian Community Payments al Period 1a Collateral Costs	-	-	-	-	-	-	1,249 10,973	1,459	1,249 12,432	9,653	1,249 2,779	-	-	-	-	-	-	-	-	-
Period 1a Period-I	Down doub Costs																				
1a.4.1 Insura		_	-	-		-	-	1,660	166	1,826	1,826	-	-	-	-	-	-	-	-	-	-
	ty taxes	-	-	-	-	-	-	3,623	362	3,985	3,985	-	-	-	-	-	-	-	-	-	-
	physics supplies equipment rental	-	604 753		-	-	-	-	151 113	755 866	755 866	-	-	-	-	-	-	-	-	-	-
1a.4.5 Disposa	al of DAW generated	-	-	12	2	5 -	49		14	80	80		-	-	597	-	-	-	11,944	19	-
1a.4.6 Plant e 1a.4.7 NRC F	energy budget 'ees	-	-	-	-	-	-	1,621 516	243 52	1,864 567	1,864 567	-	-	-	-	-	-	-	-	-	-
1a.4.8 Emerge	ency Planning Fees	-	-	-	-	-	-	2,174	217	2,392	-	2,392	-	-	-	-	-	-	-	-	-
	Overhead Fuel Pool O&M	-	-	-	-	-	-	1,440 422	216 63	1,656 486	1,656	486	-	-	-	-	-	-	-	-	-
1a.4.11 ISFSI (	Operating Costs	-	-	-		-	-	56	8	64	-	64	-	-	-	-	-	-	-	-	-
	ad Track Maintenance ty Staff Cost	-	-	-	-	-	-	63 8,328	9 1,249	72 9,577	72 9,577		-	-	-	-	-	-	-	-	122,720
1a.4.14 Utility	Staff Cost	-	-	-	-	-	-	8,328 25,478	1,249 3,822	29,300	29,300	-	-	-	-	-	-	-	-	-	400,944
1a.4 Subtota	al Period 1a Period-Dependent Costs	-	1,357	12	2	5 -	49	45,381	6,687	53,491	50,549	2,942	-	-	597	-	-	-	11,944	19	523,664
1a.0 TOTAL	L PERIOD 1a COST	-	1,357	12	2	5 -	49	59,209	8,636	69,267	63,547	5,720	-	-	597	-	-	-	11,944	19	542,645

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Table I-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(111)	ousunus (	oi 2020 Dollars	••											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed	·		Volumes		Burial /		Utility and
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
PERIO	D 1b - SAFSTOR Limited DECON Activities																				
Period 1	b Direct Decommissioning Activities																				
Danasta	mination of Site Buildings																				
	Reactor	1,199	-	_	-	_	-	-	599	1,798	1,798	-	-	-	-	-	-	-	-	17,003	-
	Auxiliary	1,244	-	-	-	-	-	-	622	1,866	1,866	-	-	-	-	-	-	-	-	17,950	
1b.1.1.3 1b.1.1.4		17 105	-	-	-	-	-	-	8 52	25 157	25 157	-	-	-	-	-	-	-	-	244 1,487	
1b.1.1.5		47	-	-	-	-	-	-	23	70	70	-	-	-	-	-	-	-	-	669	
1b.1.1.6		14	-	-	-	-	-	-	7	21	21	-	-	-	-	-	-	-	-	198	
1b.1.1.7 1b.1.1	Fuel Handling of Aux Building Totals	911 3,536	-	-	-	-	-	-	455 1,768	1,366 5,304	1,366 5,304	-	-	-	-	-	-	-	-	12,414 49,966	
1b.1	Subtotal Period 1b Activity Costs	3,536	-	-	-	-	-	-	1,768	5,304	5,304	-	-	-	-	-	-	-	-	49,966	-
Period 1	b Additional Costs																				
1b.2.1	Spent Fuel Pool Isolation Subtotal Period 1b Additional Costs	-	-	-	-	-	-	8,450		9,718	9,718	-	-	-	-	-	-	-	-	-	-
1b.2		-	-	-	-	-	-	8,450	1,268	9,718	9,718	-	-	-	-	-	-	-	-	-	-
Period 1 1b.3.1	b Collateral Costs Decon equipment	1,055	_	_	-	-	-	_	158	1,213	1,213	_	-		_	_	_	-	-	-	-
1b.3.2	Process decommissioning water waste	107	-	71	128	-	288	-	152	746	746	-	-	-	661	-	-	-	39,639	129	-
1b.3.3	Process decommissioning chemical flush waste	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1b.3.4 1b.3.5	Small tool allowance Spent Fuel Capital and Transfer	-	59	-	-	-	-	309	9 46	68 356	68	356	-	-	-	-	-	-	-	-	-
1b.3.6	Retention and Severance	-	-	-	-	-	-	2,296	344	2,640	2,640	-	-	-	-	-	-	-	-	-	-
1b.3.7	Prairie Island Indian Community Payments		-	-	-		-	311	-	311	-	311	-	-	-	-	-	-	-	-	-
1b.3	Subtotal Period 1b Collateral Costs	1,162	59	71	128	-	288	2,917	710	5,334	4,667	667	-	-	661	-	-	-	39,639	129	-
	b Period-Dependent Costs	1 994							999	1,667	1,667										
1b.4.1 1b.4.2	Decon supplies Insurance	1,334	-	-	-	-	-	414	333 41	455	455	-	-	-	-	-	-	-	-	-	-
1b.4.3	Property taxes	-	-	-	-	-	-	902	90	993	993	-	-	-	-	-	-	-	-	-	-
1b.4.4	Health physics supplies	-	438 188		-	-	-	-	109 28	547 216	547 216	-	-	-	-	-	-	-	-	-	-
1b.4.5 1b.4.6	Heavy equipment rental Disposal of DAW generated	-	100	13	5	· -	52	-	15	85	85	-	-	-	634	-	-	-	12,677	21	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	404	61	465	465	-	-	-	-	-	-	-	-	-	-
1b.4.8 1b.4.9	NRC Fees Emergency Planning Fees	-	-	-	-	-	-	98 542	10 54	108 596	108	596	-	-	-	-	-	-	-	-	-
1b.4.3 1b.4.10	Fixed Overhead	-			-	-	-	359		413	413	-	-	-			-		-	-	-
1b.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	105	16	121	-	121	-	-	-	-	-	-	-	-	-
1b.4.12 1b.4.13	ISFSI Operating Costs Railroad Track Maintenance	-	-	-	-	-	-	14 16		16 18	18	16	-	-	-	-	-	-	-	-	-
1b.4.14		-	-	-	-	-	-	2,076		2,388	2,388	-	-	-	-	-	-	-	-	-	30,596
1b.4.15	Utility Staff Cost		·			-	-	6,714		7,722	7,722	-	-	-	-	-	-	-			105,271
1b.4	Subtotal Period 1b Period-Dependent Costs	1,334	626	13	5	-	52	11,645	2,135	15,809	15,076	733	-	-	634	-	-	-	12,677	21	,
1b.0	TOTAL PERIOD 1b COST	6,032	684	84	133	-	340	23,012	5,880	36,165	34,764	1,401	-	-	1,295	-	-	-	52,317	50,115	135,867
PERIO	D 1c - Preparations for SAFSTOR Dormancy																				
Period 1	c Direct Decommissioning Activities																				
1c.1.1	Prepare support equipment for storage	-	527		-	-	-	-	79 8	606 62	606 62	-	-	-	-	-	-	-	-	3,000 700	
1c.1.2 1c.1.3	Install containment pressure equal. lines Interim survey prior to dormancy	-	54	-	-	-	-	733	8 220	62 953	62 953	-	-	-	-	-	-	-	-	12,801	
1c.1.4	Secure building accesses									a										12,001	
1c.1.5	Prepare & submit interim report	-	-	-	-	-	-	32	5	37	37	-	=	-	=	-	-	-	-	=	249
1c.1	Subtotal Period 1c Activity Costs	-	581	-	-	-	-	765	312	1,658	1,658	-	-	-	-	-	-	-	-	16,501	249
	c Collateral Costs	91		60	109		0.45		100	004	00.4				561				99.00	100	
1c.3.1 1c.3.3	Process decommissioning water waste Small tool allowance	91	- 5		109		245	-	129 1	634 6	634 6	-	-	-	561	-	-	-	33,685	109	-
1c.3.4	Spent Fuel Capital and Transfer	-	-	-	-	-	-	90	13	103	-	103	-	-	-	-	-	-	-	-	-
1c.3.5	Retention and Severance	-	-	-	-	-	-	1,722		1,980	1,980	311	-	-	-	-	-	-	-	-	-
1c.3.6	Prairie Island Indian Community Payments	-	-	-	-	-	-	311	-	311	-	311	-	-	-	-	-	-	-	-	-

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Table I-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							`		1 2020 Donar.	- /											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet		Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
1c.3	Subtotal Period 1c Collateral Costs	91	5	60	109	-	245	2,123	401	3,034	2,619	415	-	-	561	-	-	-	33,685	109	-
Period 1c	Period-Dependent Costs																				
1c.4.1	Insurance	-	-	-	-	-	-	414	41	455	455	-	-	-	-	-	-	-	-	-	-
1c.4.2	Property taxes	-	-	-	-	-	-	901	90	991	991	-	-	-	-	-	-	-	-	-	-
1c.4.3	Health physics supplies	-	248	-	-	-	-	-	62	309	309	-	-	-	-	-	-	-	-	-	-
1c.4.4	Heavy equipment rental	-	188	- 0	- 1	-	- 10	-	28	216	216	-	-	-	150	-	-	-	- 0.000	- 5	-
1c.4.5 1c.4.6	Disposal of DAW generated	-	-	3	1	-	13	404	4 61	20 465	20 465	-	-	-	152	-	-	-	3,039	б	-
1c.4.6 1c.4.7	Plant energy budget NRC Fees	-	-	-	-	-	-	404 98	10	108	108	-	-	-	-	-	-	-	-	-	-
1c.4.7	Emergency Planning Fees	-	-	-	-	-		542	54	596	- 100	596	-	-	-	-	-	-	-	-	-
1c.4.9	Fixed Overhead	_	_	-	-	-	-	359	54	413	413	-	-	-	-	_	-	-	-	-	_
1c.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	105	16	121	_	121	-	-	-	-	-	-	-	-	_
1c.4.11	ISFSI Operating Costs	-	-	-	-	-	-	14	2	16	-	16	-	-	-	-	-	-	-	-	-
1c.4.12	Railroad Track Maintenance	-	-	-	-	-	-	16	2	18	18	-	-	-	-	-	-	-	-	-	-
1c.4.13	Security Staff Cost	-	-	-	-	-	-	2,076	311	2,388	2,388	-	-	-	-	-	-	-	-	-	30,596
1c.4.14	Utility Staff Cost	-	-	-	-	-	-	6,714	1,007	7,722	7,722	-	-	-	-	-	-	-	-	-	105,271
1c.4	Subtotal Period 1c Period-Dependent Costs	-	435	3	1	-	13	11,643	1,742	13,838	13,104	733	-	-	152	-	-	-	3,039	5	135,867
1c.0	TOTAL PERIOD 1c COST	91	1,021	63	110	-	257	14,531	2,456	18,530	17,382	1,148	-	-	713	-	-	-	36,724	16,615	136,116
PERIOR	0 1 TOTALS	6,123	3,062	159	248	-	646	96,752	16,972	123,961	115,692	8,269	-	-	2,605	-	-	-	100,985	66,750	814,628
PERIOR	2a - SAFSTOR Dormancy with Wet Spent Fuel Storage																				
Dania J Oa	a Direct Decommissioning Activities																				
2a.1.1	Quarterly Inspection									_											
2a.1.1 2a.1.2	Semi-annual environmental survey									a a											
2a.1.2	Prepare reports									a a											
2a.1.3	Bituminous roof replacement	_	_	_	_	_	_	223	33	256	256	_	_	_	_	_	_	_	_	_	_
2a.1.5	Maintenance supplies	_	_	-	-	-	_	349	87	437	437	_	-	_	-	_	-	_	_	_	_
2a.1	Subtotal Period 2a Activity Costs	-	-	-	-	-	-	572	121	693	693	-	-	-	-	-	-	-	-	-	-
Period 2a	a Additional Costs																				
2a.2.1	Security Modifications	-	-	-	-	-	-	4,348	652	5,000	5,000	-	-	-	-	-	-	-	-	-	-
2a.2	Subtotal Period 2a Additional Costs	-	-	-	-	-	-	4,348	652	5,000	5,000	-	-	-	-	-	-	-	-	-	-
Period 2a	a Collateral Costs																				
2a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	64,672	9,701	74,373	-	74,373	-	-	-	-	-	-	-	-	-
2a.3.2	Retention and Severance	-	-	-	-	-	-	11,054	1,658	12,712	12,712	-	-	-	-	-	-	-	-	-	-
2a.3.3	Prairie Island Indian Community Payments	-	-	-	-	-	-	3,128	-	3,128	-	3,128	-	-	-	-	-	-	-	-	-
2a.3	Subtotal Period 2a Collateral Costs	-	-	-	-	-	-	78,854	11,359	90,213	12,712	77,501	-	-	-	-	-	-	-	-	-
Period 2a	a Period-Dependent Costs																				
2a.4.1	Insurance	-	-	-	-	-	-	1,213	121	1,334	1,334	-	-	-	-	-	-	-	-	-	-
2a.4.2	Property taxes	-	-	-	-	-	-	9,065	907	9,972	9,972	-	-	-	-	-	-	-	-	-	-
2a.4.3	Health physics supplies	-	617	-	-	-		-	154	771	771	-	-	-		-	-	-		-	-
2a.4.4	Disposal of DAW generated	-	-	11	5	-	47	- 010	14	77	77	-	-	-	576	-	-	-	11,523	19	-
2a.4.5 2a.4.6	Plant energy budget NRC Fees	-	-	-	-	-	-	812 536	122 54	934 590	934 590	-	-	-	-	-	-	-	-	-	-
2a.4.6 2a.4.7	Emergency Planning Fees	-	-	-	-	-	-	4,653	465	5,119	590	5,119	-	-	-	-	-	-	-	-	-
2a.4.8	Fixed Overhead	-	-	-	-		-	2,979	447	3,426	3,426	5,115	-	-	-		-	-	-	-	-
2a.4.9	Spent Fuel Pool O&M	-	_	-	-	-	-	1,057	159	1,216	-	1,216	_	_	_	-	-	-	-	_	_
2a.4.10	ISFSI Operating Costs	-	-	-	-	-	-	140	21	161	-	161	-	-	-	-	-	-	-	-	-
2a.4.11	Railroad Track Maintenance	-	-	-	-	-	-	385	58	443	443	-	-	-	-	-	-	-	-	-	-
2a.4.12	Security Staff Cost	-	-	-	-	-	-	19,158	2,874	22,032	15,863	6,169	-	-	-	-	-	-	-	-	281,262
2a.4.13	Utility Staff Cost	-	-	-	-	-	-	13,370	2,006	15,376	12,900	2,476	-	-	-	-	-	-	-	-	205,738
2a.4	Subtotal Period 2a Period-Dependent Costs	-	617	11	5	-	47	53,370	7,400	61,450	46,309	15,140	-	-	576	-	-	-	11,523	19	486,999
2a.0	TOTAL PERIOD 2a COST	-	617	11	5	-	47	137,143	19,532	157,355	64,714	92,641	-	-	576	-	-	-	11,523	19	486,999
PERIOR	2b - SAFSTOR Dormancy with Dry Spent Fuel Storage																				
	Direct Decommissioning Activities																				
2b.1.1	Quarterly Inspection									a											
2b.1.2	Semi-annual environmental survey									a											
2b.1.3	Prepare reports							4 400	000	a Foot	F 000										
2b.1.4	Bituminous roof replacement	-	-	-	-	-	-	4,402	660	5,063	5,063	-	-	-	-	-	-	-	-	-	-

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Table I-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(111	ousunus c	or 2020 Domar,	3)											
		_			_	Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet		Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
Period 2b	Direct Decommissioning Activities (continued)																				
2b.1.5 2b.1	Maintenance supplies Subtotal Period 2b Activity Costs	-	-	-	-	-	-	6,902 11,305	1,726 2,386	8,628 13,691	8,628 13,691	-	-	-	-	-	-	-	-	-	-
Period 2b	Collateral Costs																				
2b.3.1 2b.3.2	Spent Fuel Capital and Transfer Prairie Island Indian Community Payments	-	-	-	-	-	-	136,259 61,783	20,439	156,698 61.783	-	156,698 61,783	-	-	-	-	-	-	-	-	-
2b.3.2	Subtotal Period 2b Collateral Costs	-	-	-	-	-	-	198,042	20,439	218,481	=	218,481	-	-	-	-	-	-	-	-	-
	Period-Dependent Costs																				
2b.4.1 2b.4.2	Insurance Property taxes	-	-	-	-	-	-	23,951 179,063	2,395 17,906	26,346 196,969	26,346 196,969	-	-	-	-	-	-	-	-	-	-
2b.4.3	Health physics supplies	-	5,618	-	-	-	-	-	1,404	7,022	7,022	-	-	-	-	-	-	-	-	-	-
2b.4.4 2b.4.5	Disposal of DAW generated Plant energy budget	•	-	101	41	· -	421	8,019	122 1,203	685 9,222	685 9,222	-	-	-	5,109	-	-	-	102,180	167	-
2b.4.6	NRC Fees	-	-	-	-	-	-	10,191	1,019	11,211	11,211	-	-	-	-	-	-	-	-	-	-
2b.4.7	Emergency Planning Fees	-	-	-	-	-	-	3,667	367	4,033	-	4,033	-	-	-	-	-	-	-	-	-
2b.4.8 2b.4.9	Fixed Overhead ISFSI Operating Costs	-	-	-	-	-	-	8,059 2,768	1,209 415	9,268 3,183	9,268	3,183	-	-	-	-	-	-	-	-	-
2b.4.10	Railroad Track Maintenance	-	-	-	-	-	-	3,092	464	3,556	3,556	-	-	-	-	-	-	-	-	-	-
2b.4.11 2b.4.12	Security Staff Cost Utility Staff Cost	-	-	-	-	-	-	138,043 67,547	20,706 10,132	158,749 77,680	34,925 48,783	123,825 28,897	-	-	-	-	-	-	-	-	1,851,793 1,028,774
2b.4.12 2b.4	Subtotal Period 2b Period-Dependent Costs	-	5,618	101	41	-	421	444,401	57,343	507,924	347,987	159,938	-	-	5,109	-	-	-	102,180	167	2,880,567
2b.0	TOTAL PERIOD 2b COST	-	5,618	101	41	-	421	653,748	80,167	740,096	361,678	378,419	-	-	5,109	-	-	-	102,180	167	2,880,567
PERIOD	2 TOTALS	-	6,235	113	46	-	468	790,891	99,699	897,452	426,392	471,060	-	-	5,685	-	-	-	113,703	185	3,367,566
PERIOD	3a - Reactivate Site Following SAFSTOR Dormancy																				
	Direct Decommissioning Activities																				
3a.1.1 3a.1.2	Prepare preliminary decommissioning cost Review plant dwgs & specs.	-	-	-	-	-	-	71 253	11 38	82 291	82 291	-	-	-	-	-	-	-	-	-	556 1,967
3a.1.3	Perform detailed rad survey								50	a											
3a.1.4	End product description	-	-	-	-	-	-	55	8	63 82	63 82	-	-	-	-	-	-	-	-	-	428 556
3a.1.5 3a.1.6	Detailed by-product inventory Define major work sequence	-	-	-	-	-	-	71 412	11 62	82 474	82 474	-	-	-	-	-	-	-	-	-	3,207
3a.1.7	Perform SER and EA	-	-	-	-	-	-	170	26	196	196		-	-	-	-	-	-	-	-	1,326
3a.1.8	Perform Site-Specific Cost Study	-	-	-	-	-	-	275	41	316	316	-	-	-	-	-	-	-	-	-	2,138
Activity S 3a.1.9.1	Specifications Re-activate plant & temporary facilities	_	_	_	_	-	-	405	61	466	419		47	_	_	_	_	_	-	_	3,151
3a.1.9.2	Plant systems	-	-	-	-	-	-	229	34	263	237	-	26		-	-	-	-	-	-	1,782
3a.1.9.3 3a.1.9.4	Reactor internals Reactor vessel	-	-	-	-	-	-	390 357	59 54	449 411	449 411	-	-	-	-	-	-	-	-	-	3,036 2,779
3a.1.9.4 3a.1.9.5	Biological shield	-	-	-	-	-	-	27	4	32	32	-	-	-	-	-	-	-	-		2,779
3a.1.9.6	Steam generators	-	-	-	-	-	-	171	26	197	197	-		-	-	-	-	-	-	-	1,334
3a.1.9.7 3a.1.9.8	Reinforced concrete Main Turbine	-	-	-	•	-	-	88 22	13	101 25	51	-	51 25		-	-	-	-	-	-	684 171
	Main Condensers	-	-	-		-	-	22	3	25	-	-	25		-	-	-	-	-	-	171
3a.1.9.10	Plant structures & buildings	-	-	-	-	-	-	171	26	197	99	-	99	-	-	-	-	-	-	-	1,334
	Waste management	-	-	-	-	-	-	253 49	38 7	291 57	291 28	-	28	-	-	-	-	-	-	-	1,967 385
3a.1.9	Facility & site closeout Total	-	-	-	-	-	-	2,186	328	2,514	2,213		301		-	-	-	-	-	-	17,009
Planning	& Site Preparations																				
3a.1.10	Prepare dismantling sequence	-	-	-	-	-	-	132	20	152	152	-	-	-	-	-	-	-	-	-	1,026
3a.1.11 3a.1.12	Plant prep. & temp. svces Design water clean-up system	-	-	-	-	-	-	3,500 77	525 12	4,025 88	4,025 88	-	-	-	-	-	-	-	-	-	599
3a.1.12 3a.1.13	Rigging/Cont. Cntrl Envlps/tooling/etc.		-	-	-	-	-	2,400	360	2,760	2,760	-	-	-	-	-	-	-	-	-	- 599
3a.1.14	Procure casks/liners & containers		-	-	-	-	-	68	10	78	78	-	-	-	-	-	-	-	-	-	526
3a.1	Subtotal Period 3a Activity Costs	-	-	-	-	-	-	9,670	1,451	11,121	10,820	-	301	-	-	-	-	-	-	-	29,336
	Additional Costs							1 505	181	1.050	1050									0.000	0.800
3a.2.1 3a.2.2	Site Characterization Mixed/Hazardous Waste	-	-	353	94	178		1,505	451 76	1,956 702	1,956 702	-	-	6,132	-	-	-	-	351,977	8,988 2,348	3,563
3a.2.3	Asbestos Abatement		2,526	3	150	-	1,369	-	996	5,044	5,044	-	-	-	12,843	-	-	-	166,959	20,907	-
3a.2	Subtotal Period 3a Additional Costs	-	2,526	356	244	178	1,369	1,505	1,524	7,702	7,702	-	-	6,132	12,843	-	-	-	518,936	32,243	3,563

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Table I-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
	Collateral Costs																		, , , , , , , , , , , , , , , , , , , ,		
3a.3.1	Small tool allowance	-	34	-	-	-	-	-	5	39	39	-	-	-	-	-	-	-	-	-	-
3a.3.2	Spent Fuel Capital and Transfer	-	-	-	-	-	-	39,506	5,926	45,431	-	45,431	-	-	-	-	-	-	-	-	-
3a.3.3 3a.3	Prairie Island Indian Community Payments Subtotal Period 3a Collateral Costs	-	34	-	-	-	-	1,249 $40,755$	5,931	1,249 $46,720$	39	1,249 46,680	-	-	-	-	-	-	-	-	-
	Period-Dependent Costs																				
3a.4.1	Insurance	-	-	-	-	-	-	484	48	533	307	225	=	-	-	-	-	-	-	-	-
3a.4.2 3a.4.3	Property taxes Health physics supplies	-	641	-	-	-	-	3,546	355 160	3,900 802	2,500 802	1,400	-	-	-	-	-	-	-	-	-
3a.4.4	Heavy equipment rental	-	753	-	-	-	-	-	113	866	866	-	-	-	-		-	-	-	-	-
3a.4.5	Disposal of DAW generated	-	-	10	4	-	40	-	11	64	64	-	-	-	481	-	-	-	9,613	16	-
3a.4.6	Plant energy budget	-	-	-	-	-	-	1,621	243	1,864	1,864	-	=	-	-	-	-	-	-	-	-
3a.4.7 3a.4.8	NRC ISFSI Fees NRC Fees	-	-	-	-	-	-	120 260	12 26	132 286	286	132	-	-	-		_	-	-	-	-
3a.4.9	Emergency Planning Fees	-	-	-	-	-	-	74	7	82	-	82	-	-	-	-	-	-	-	-	-
3a.4.10	Fixed Overhead	-	-	-	-	-	-	1,440	216	1,656	1,656	-	-	-	-	-	-	-	-	-	-
3a.4.11	ISFSI Operating Costs	-	-	-	-	-	-	56	8	64	- 79	64	-	-	-	-	-	-	-	-	=
3a.4.12 3a.4.13	Railroad Track Maintenance Security Staff Cost	-	-	-	-	-	-	63 368	9 55	$\frac{72}{424}$	$\frac{72}{424}$	-	-	-	-	-	-	-	-	-	6,240
3a.4.13	Utility Staff Cost	-		-	-	-		12,056	1,808	13,864	13,379	485	-	-	-	-	-	-	-		199,680
3a.4	Subtotal Period 3a Period-Dependent Costs	-	1,394	10	4	-	40	20,088	3,074	24,609	22,220	2,388	=	-	481	-	-	-	9,613	16	205,920
3a.0	TOTAL PERIOD 3a COST	-	3,954	366	248	178	1,409	72,018	11,979	90,151	40,781	49,069	301	6,132	13,324	-	-	-	528,549	32,259	238,819
PERIOD	3b - Decommissioning Preparations																				
Period 3b	Direct Decommissioning Activities																				
	Work Procedures							200	00	200	200		00								2.024
	Plant systems Reactor internals	-	-	-	-	-	-	260 137	39 21	299 158	269 158	-	30	-	-	-	-	-	-	-	2,024 1,069
	Remaining buildings	-	-	-	-	-	-	74	11	85	21		64	-	-		-	-	-	-	577
3b.1.1.4	CRD cooling assembly	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
3b.1.1.5	CRD housings & ICI tubes	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
3b.1.1.6 3b.1.1.7	Incore instrumentation Reactor vessel	-	-	-	-	-	-	55 199	8 30	63 229	63 229	-	-	-	-	-	-	-	-	-	428 1,552
	Facility closeout	-	-	-	-	-	-	66	10	76	38	-	38	-	-		-	-	-	-	513
3b.1.1.9	Missile shields	-	-	-	-	-	-	25	4	28	28	-	-	-	-	-	-	-	-	-	192
	Biological shield	-	-	-	-	-	-	66	10	76	76	-	-	-	-	-	-	-	-	-	513
	Steam generators Reinforced concrete	-	-	-	-	-	-	253 55	38 8	291 63	291 32	-	32	-	-	-	-	-	-	-	1,967 428
	Main Turbine	-	-	-	-	-	-	86	13	99	- 32	-	99	-	-		-	-	-	-	667
3b.1.1.14	Main Condensers	-	-	-	-	-	-	86	13	99	-	-	99	-	-	-	-	-	-	-	667
	Auxiliary building	-	-	-	-	-	-	150	23	173	155	-	17	-	-	-	-	-	-	-	1,167
	Reactor building Total	-	-	-	-	-	-	150 $1,772$	23 266	173 2.038	155 1,643	-	17 395	-	-	-	-	-	-	-	1,167 13,787
3b.1.1	Subtotal Period 3b Activity Costs	-	-	-	-	-	-	1,772	266	2,038	1,643	-	395	-	-	-	-	-	-	-	13,787
	Collateral Costs																				
3b.3.1	Decon equipment	1,055		-	-	-	-	1 004	158	1,213	1,213	-	-	-	-	-	-	-	-	-	-
3b.3.2 3b.3.3	DOC staff relocation expenses Pipe cutting equipment	- -	1,200	-	=	-	-	1,264	190 180	1,454 1,380	1,454 1,380	-	-	-	-	-	-	-	-	-	-
3b.3.4	Prairie Island Indian Community Payments	-	1,200	-	-	-	-	623	-	623	1,560	623	-	-	-	-		-	-		-
3b.3	Subtotal Period 3b Collateral Costs	1,055	1,200	-	-	-	-	1,887	528	4,669	4,047	623	-	-	-	-	-	-	-	-	-
Period 3b 3b.4.1	Period-Dependent Costs Decon supplies	38							9	47	47										
3b.4.1 3b.4.2	Decon supplies Insurance	- 38	-	-	-	-	-	241	9 24	266	266	-	-	-			-	-	-	-	-
3b.4.3	Property taxes	-	-	-	-	-	-	1,667	167	1,834	1,175	658	-	-	-	-	-	-	-	-	-
3b.4.4	Health physics supplies	-	274	-	-	-	-	-	68	342	342	-	-	-	-	-	-	-	-	-	-
3b.4.5	Heavy equipment rental	-	375			-	- 00	-	56	432	432	-	-	-	- 001	-	-	-	- 202	- ^	=
3b.4.6 3b.4.7	Disposal of DAW generated Plant energy budget	-	-	5	2	-	22	808	6 121	35 930	35 930	-	-	-	264	-	-	-	5,286	9	-
3b.4.7	NRC ISFSI Fees	-		-	-	-	-	60	6	66	-	66	-	-	-	-		-	-		-
3b.4.9	NRC Fees	-	-	-	-	-	-	129	13	142	142	-	-	-	-	-	-	-	-	-	-
3b.4.10	Emergency Planning Fees	-	-	-	-	-	-	37	4	41	-	41	-	-	-	-	-	-	-	-	-
3b.4.11	Fixed Overhead	-	-	-	-	-	-	718	108	826	826	-	-	-	-	-	-	-	-	-	-

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Table I-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							` `	Jusanus C		- /											
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 3b I	Period-Dependent Costs (continued)																				
3b.4.12	ISFSI Operating Costs	-	-	-	-	-	-	28	4	32	-	32	-	-	-	-	-	-	-	-	-
	Railroad Track Maintenance	-	-	-	-	-	-	31	5	36	36		-	-	-	-	-	-	-	-	-
	Security Staff Cost DOC Staff Cost	-	-	-	-	-	-	184 3,727	28 559	211 4,287	211 4,287	-	-	-	-	-	-	-	-	-	3,111 42,523
	Utility Staff Cost	-	-	-	-	-	-	6,011	902	6,913	6,671	242	-	-	-		-	-	-	-	99,566
	Subtotal Period 3b Period-Dependent Costs	38		5	2	-	22	13,643	2,080	16,439	15,400	1,039	-	-	264	-	-	-	5,286	9	145,201
3b.0	TOTAL PERIOD 3b COST	1,092	1,849	5	2	-	22	17,301	2,874	23,146	21,089	1,661	395	-	264	-	-	-	5,286	9	158,988
PERIOD :	TOTALS	1,092	5,803	371	250	178	1,430	89,319	14,853	113,297	61,871	50,730	696	6,132	13,588	-	-	-	533,835	32,267	397,807
PERIOD 4	a - Large Component Removal																				
Period 4a I	Direct Decommissioning Activities																				
Nuclear St.	eam Supply System Removal																				
4a.1.1.1	Reactor Coolant Piping	11		10	11	66	94	-	52	285	285	-	-	240			-	-	33,680	778	
4a.1.1.2	Pressurizer Relief Tank	5	19	6	7	44	62	-	31	174	174		-	160	169	-	-	-	22,441	352	-
	Reactor Coolant Pumps & Motors	13		46	85	-	463	-	155	822	822		-	-	2,332		-	-	295,800	1,226	
	Pressurizer Steam Generators	-	77 3,307	382 1,690	91 1,743	2,409	776 3,885	-	265 2,590	1,591 15,625	1,591 15,625	-	-	18,672	2,196 10,990		-	-	158,199 1,581,180	1,346 10,253	
	CRDMs/ICIs/Service Structure Removal	63		205	1,745	326	3,000 454	-	2,590	1,623	1,623	-	-	2,138			-	-	165,025	4,449	
	Reactor Vessel Internals	51		13,353	862	-	7,848	278	11,032	38,074	38,074		-	-,	1,174		673	-	167,337	22,373	
	Reactor Vessel	-	5,835	1,653	442	-	3,268	278	6,576	18,053	18,053	-	-	-	9,245		-	-	579,324	22,373	1,053
4a.1.1	Totals	144	14,237	17,346	3,284	2,845	16,851	556	20,984	76,247	76,247	-	-	21,210	28,505	-	673	-	3,002,986	63,151	5,187
	Major Equipment																				
	Main Turbine/Generator	-	292	116	35	555	-	-	173	1,170	1,170		-	2,243		-	-	-	134,601	4,116	
4a.1.3	Main Condensers	-	2,510	79	33	742	-	-	752	4,115	4,115	-	-	4,000	-	-	-	-	180,000	34,978	-
	Costs from Clean Building Demolition																				
	Reactor	-	794	-	-	-	-	-	119	913	913		-	-	-	-	-	-	-	7,589	
	Auxiliary Radwaste	- -	221	-	-	-	-	-	33 1	254 10	254 10		-	-	-	-	-	-	-	1,309 65	
	Totals	-	1,023	-	-	-	-	-	154	1,177	1,177		-	-	-	-	-	-	-	8,963	
Disposal of	Plant Systems																				
	Admin Bldg Ventilation	-	6	-	-	-	-	-	1	7	-	-	7	-	-	-	-	-	-	90	-
	Air Removal	-	29	-	-	-	-	-	4	33	-	-	33		-	-	-	-	-	422	
	Auxiliary Feedwater	Ē	46	-	-	-	-	-	7	53	-	-	53		-	-	-	-	-	676	
	Auxiliary Feedwater - RCA Bleed Steam	=	38 90	0	1	30	-	-	14 13	84 103	84	-	103	178	-	-	-	-	7,214	486 1,331	-
	Caustic Addition - RCA	-	40	0	2	40	-	-	16	99	99	-	103	240			-		9,761	468	-
	Chemical Feed	-	17	-		-	-	-	3	20	-	-	20		-	-	-	-		261	=
	Chemical Feed - RCA	-	3	0	0	3	-	-	1	7	7	-	-	16	-	-	-	-	634	31	-
	Circulating Water	-	27 525	-	-	-	-	-	4 79	32 603	-	-	32 603		-	-	-	-	-	401	-
	Condensate Condensate Polishing	-	525 208	-	-	-	-	-	79 31	603 239	-	-	603 239	-	-	-	-	-	-	7,537 2,987	-
	Condensate Polishing - RCA	-	38	1	4	81	-	-	22	145	145	-	-	483	-	-	-	-	19,616	493	-
4a.1.5.13	Electro-Hydraulic	-	10	-	-	-	-	-	1	11	-	-	11	-	-	-	-	-	-	143	-
	External Circulating Water	-	26	-	-	-	-	-	4	30	-	-	30		-	-	-	-	-	385	-
	External Circulating Water - RCA	-	72	1	5	121	-	-	37	237	237	-	-	721	-	-	-	-	29,284	938	-
4a.1.5.16	Feedwater Feedwater - RCA	=	127 248	- 8	31	694	-	-	19 171	146 1,152	1,152	-	146	4,147	-	-	-	-	168,414	1,840 3,377	-
4a.1.5.17 4a.1.5.18		-	34	-	-	-		-	5	39	1,102	-	39				-	-	100,414	504	-
4a.1.5.19	Heater Drain	-	384	-	-	-	-	-	58	441	-	-	441		-	-	-	-	-	5,638	-
4a.1.5.20	Hypobromous Acid Feed	-	6	-	-	-	-	-	1	7	-	-	7	-	-	-	-	-	-	86	-
	Hypobromous Acid Feed - RCA	=	1	0	0	0	-	-	0	2	2	-	-	2	-	-	-	-	100	12	
	Internal Circ Water & CDSR Main Gen/Exciter/Transformer	=	25 0	-	-	-	-	-	4	29	-	-	29		-	-	-	-	-	366 5	-
	Main Steam	-	101	-	-	-	-	-	15	116	-	-	116		-	-	-	-	-	1,482	-
	Main Steam - RCA	- -	380	11	38	864	-	-	231	1,525	1,525	-	- 110	5,166	-	-	-	-	209,799	5,146	- -
4a.1.5.26	Repairable Spare Snubbers	-	6	0	0	2	-	-	2	10	10	-	-	12		-	-	-	490	82	
4a.1.5.27	Steam Exclusion	-	2	-	-	-	-	-	0	2	-	-	2	-	-	-	-	-	-	32	
	Steam Exclusion - RCA	-	4	0	0	4	- 01*	-	2	10	10		-	24		-	-	-	966	47	
	Steam Generator Blowdown	=	378 5	21	27	319	215	-	202	1,162 6	1,162	-	- 6	1,906	631	-	-	-	118,130	5,179 75	
48.1.5.30	Steam Generators	-	5	-	-	-	-	-	1	6	-	-	6	-	-	-	-	-	-	75	=

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Table I-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							` '		or 2020 Domar.	•											
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
	*	2050	0050	00000	COSCS	00505	Costs	COSES	contingency	COSCS	COBID	0000	COSCS	04,1000	04,100	currect	currect	currect	1101, 200	mumours	Manifour
	of Plant Systems (continued) Turbine & Moisture Separators		377						57	434			434							5,472	
	Turbine & Moisture Separators Turbine Oil Purification	-	53	-	-	-	-	-	8	61	-	-	61	-	-	-		-	-	757	-
4a.1.5.33	Water Treatment	-	453	-	-	-	-	-	68	521	-	-	521	-	-	-	-	-	-	6,677	-
	Water Treatment - RCA Totals	-	20 3,779	0 43	1 108	19 2,177	- 015	-	8 1,091	7 412	49	-	2,933	115 13,010		-	-	-	4,652 569,060	252 53,681	-
4a.1.5	Totals	-	5,779	45	108	2,177	215	-	1,091	7,413	4,480	-	2,955	15,010	691	-	-	-	569,060	55,661	-
4a.1.6 4a.1	Scaffolding in support of decommissioning Subtotal Period 4a Activity Costs	144	2,865 $24,706$	$\frac{22}{17,607}$	$\frac{10}{3,470}$	188 6,506	30 17,096	556	755 23,908	3,870 93,993	3,870 91,059	-	2,933	1,012 $41,476$		-	673	-	51,216 $3,937,863$	23,719 188,606	5,187
Period 4a	Additional Costs																				
4a.2.1 4a.2	Retired RPV Upper Internals Package Subtotal Period 4a Additional Costs	-	128 128	166 166	58 58	-	1,583 1,583	-	944 944	2,879 $2,879$	2,879 2,879	-	-	-	572 572	125 125	-	-	49,800 49,800	1,667 1,667	67 67
Period 4a	Collateral Costs																				
4a.3.1	Process decommissioning water waste	3	-	4	8	-	17	-	7	39	39	-	-	-	40	-	-	-	2,408	8	-
4a.3.3	Small tool allowance	-	241	-	-	-	-	1 000	36	277	249		28	-	-	-	-	-	-	-	-
4a.3.4 4a.3	Prairie Island Indian Community Payments Subtotal Period 4a Collateral Costs	3	241	4	8	-	17	1,660 1,660	43	1,660 1,976	288	1,660 1,660	28	-	40		-	-	2,408	8	-
	Period-Dependent Costs																				
4a.4.1 4a.4.2	Decon supplies Insurance	100	-	-	-	-	-	643	25 64	125 708	125 708	-	-	-	-	-	-	-	-	-	-
4a.4.2 4a.4.3	Property taxes	-	-	-	-	-	-	4,395	439	4,834	2,954	1,881	-	-	-	-	-	-	-	-	-
4a.4.4	Health physics supplies	-	1,882	-	-	-	-	-	470	2,352	2,352	-	-	-	-	-	-	-	-	-	-
4a.4.5	Heavy equipment rental	-	3,325	-	-	-	-	-	499	3,824	3,824	-	-	-	0.550	-	-	-	- 71 110	-	-
4a.4.6 4a.4.7	Disposal of DAW generated Plant energy budget	-	-	70	29	-	293	2,047	85 307	477 $2,354$	477 $2,354$	-	-	-	3,556	-	-	-	71,113	116	-
4a.4.8	NRC ISFSI Fees	-	-	-	-	-	-	159	16	175	-	175	-	-	-	-	-	-	-	-	-
4a.4.9	NRC Fees Emergency Planning Fees	ē	-	-	-	-	-	420 99	42 10	461 108	461	108	-	-	-	-	-	-	-	-	-
4a.4.10 4a.4.11	Fixed Overhead	-	-	-	-	-	-	1,581	237	1,818	1,818	106	-	-	-	-	-	-	-	-	-
4a.4.12	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	565	85	649	649	-	-	-	-	-	-	-	-	-	-
4a.4.13 4a.4.14	ISFSI Operating Costs Railroad Track Maintenance	-	-	-	-	-	-	74 83	11 12	86 96	96	86	-	-	-	-	-	-	-	-	-
4a.4.14 4a.4.15	Remedial Actions Surveys	-	-	-	-	-	-	1.489	223	1,712	1.712	-	-	-	-	-	-	-	-	-	-
4a.4.16	Security Staff Cost	-	-	-	-	-	-	5,911	887	6,798	5,159	1,638	-	-	-	-	-	-	-	-	91,140
4a.4.17 4a.4.18	DOC Staff Cost Utility Staff Cost	-	-	-	-	-	-	17,103 21,408	2,565 3,211	19,668 24,619	19,668 23,856	- 763	-	-	-	-	-	-	-	-	189,200 337,712
4a.4.16 4a.4	Subtotal Period 4a Period-Dependent Costs	100	5,207	70	29	-	293	55,975	9,189	70,863	66,212	4,651	-	-	3,556	-	-	-	71,113	116	
4a.0	TOTAL PERIOD 4a COST	246	30,282	17,847	3,564	6,506	18,989	58,190	34,084	169,711	160,439	6,311	2,961	41,476	33,394	125	673	-	4,061,184	190,397	623,305
PERIOD	9 4b - Site Decontamination																				
	Direct Decommissioning Activities	014		0.0	43		<b>5</b> 00		070	1 202	1 505				2.002				100.010	*=0	
4b.1.1	Remove spent fuel racks	314	35	86	41	-	703	-	356	1,535	1,535	-	-	-	2,092	-	-	-	132,919	576	-
	of Plant Systems		~~				-		2.5	**	w -				_						
	ADT & Misc Ventilation Aux Bldg Normal Ventilation	-	22 62	1 2	1 6	26 116	3 13	-	10 37	63 237	63 237	-	-	153 692		-	-	-	6,803 30,595	325 906	<del>-</del> -
4b.1.2.3	Aux Bldg Special Ventilation	-	12	0	1	12	2	-	5	32	32	-	-	70		-	-	-	3,234	176	-
4b.1.2.4	Battery Rm Special Ventilation	-	2	-	-	-	-	-	0	2	-	-	2	-	-	-	-	-	-	24	-
4b.1.2.5 4b.1.2.6	Boron Recycle Chemical & Volume Control	-	3 858	0 62	0 57	0 394	3 677	-	$\frac{2}{458}$	9 2,507	9 2,507	-	-	3 2,356	9 1,977	-	-	-	700 223,753	45 11,575	-
	Cold Chemical Lab Ventilation	-	1	-	-	-	-	_	0	1	2,501	-	1	2,555	-	-	-	-	-	9	-
4b.1.2.8	Component Cooling - RCA	-	647	25	88	2,007	-	-	479	3,246	3,246	-	-	11,996	-	-	-	-	487,169	8,583	-
4b.1.2.9 4b.1.2.10	Containment Cooling Containment Cooling - RCA	-	35 302	- 6	20	459	-	-	5 148	40 934	934	-	40	2,743	-	-	-	-	111,390	502 3,949	-
4b.1.2.11	Containment Hydrogen Control - RCA	-	36		1	24	-	-	13	74	74	-	-	141		-	-	-	5,742	494	-
4b.1.2.12	Containment Spray - RCA	-	194	3	11	243	- 0.40	-	87	538	538	-	-	1,453		-	-	-	59,019	2,617	-
	Containment Ventilation Control/Relay/Cmptr Rm Vent	-	211 28	23 1	49 2	790 44	243 7	-	242 16	1,558 98	1,558 98	-	-	4,721 260	722 20	-	-	-	237,643 11,878	3,016 406	<del>-</del>
4b.1.2.15	Cooling Water	-	159	-	-	-	- '	-	24	183	-	-	183	-	-	-	-	-	-	2,344	-
4b.1.2.16	Cooling Water - RCA	-	476	17	62	1,412	-	-	342	2,310	2,310	-	-	8,442		-	-	-	342,822	6,311	-
	Cranes/Hoists/Elevators - RCA D3 Emergency Diesel	-	3 10	0	1	17	-	-	4 2	25 12	25	-	12	103	-	-	-	-	4,184	48 141	-
	D4 Emergency Diesel	-	10	-	-	-	-	-	2	12	-	-	12		-	-	-	-	-	141	-
	- *																				

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Table I-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(222)	, asamas (	or 2020 Domar.	٠,											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity		Decon		Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Disposal	of Plant Systems (continued)																				
	D5 Emergency Diesel	-	0	-	-	-	-	-	0	0	-	-	0		-	-	-	-	-	5	-
	Electrical - Clean Electrical - Contaminated	-	1,714 430	- 5	16	334	25	-	257 167	1,972 978	978	-	1,972	1.997	- 75	-	-	-	85.887	24,276 5,813	-
	Electrical - Contaminated - Fuel Pool	-	184	2	7	145	11	-	72	421	421	-	-	864	33	-	-	-	37,167	2,488	-
	Electrical - Decontaminated	-	2,955	38	138	3,138	-	-	1,234	7,503	7,503	-	-	18,753	-	-	-	-	761,569	38,423	-
	Electrical - Decontaminated - Fuel Pool Filter Rm Ventilation	-	1,269	17 0	59 0	1,350 4	- 0	-	530 2	3,225 10	3,225 10	-	-	8,069 24	- 1	-	-	-	327,668	16,495 61	-
	Fire Protection & Detection	-	204	- 0	-	4	- 0	-	31	235	- 10	-	235	- 24		-		-	1,017	3,009	-
	Fire Protection & Detection - RCA	-	246	4	13	306	-	-	110	679	679	-	-	1,828	-	-	-	-	74,245	3,134	-
	Fire Protection & Detection - RCA Fuel P	-	37	1	2	48	-	-	17	105	105	-	-	286	-	-	-	-	11,622	476	-
	Fuel Handling	-	66 1	1	2	34	17	-	26 0	146	146	-	- 1	200	49	-	-	-	11,273	983 9	-
4b.1.2.31 4b.1.2.32	HVAC - Clean	-	151	-	-	-	-	-	23	174	-	-	174	-	-	-	-	-	-	2,373	-
	HVAC - Contaminated	-	1,112	29	87	1,798	136	-	598	3,759	3,759	-		10,745	405	_	-	-	462,103	14,282	-
	HVAC - Contaminated - Fuel Pool	-	499	13	39	808	61	-	268	1,689	1,689	-	-	4,828	182	-	-	-	207,612	6,417	-
4b.1.2.35	Heating Heating - RCA	-	322 337	- 4	14	319	-	-	48 135	370 809	809	-	370	1.907	-	-	-	-	77,458	4,804 4,086	-
	Heating - RCA Hot Lab & Sample Rm Ventilation	-	337 17	4 0	14 1	319 18	1	-	135	809 46	809 46	-	-	1,907	4	-	-	-	77,458 4.622	4,086 255	-
4b.1.2.38	Incore Instrumentation	-	27	1	2	10	20	-	13	73	73	-	-	60	58	-	-	-	6,143	412	-
	Misc Drains & Vents	-	213	12	12	77	145	-	104	563	563	-	-	458	426	-	-	-	46,079	2,841	-
	Misc Lab & Service Areas Vent	-	118 72	8	8	62	84	-	62	342 83	342	-	- 00	370	244	-	-	-	30,899	1,537 1,073	-
	Miscellaneous Gas Miscellaneous Gas - RCA	-	134	1	4	100	-	-	11 49	289	289	-	83	600	-	-	-	-	24,378	1,636	-
	Radiation Monitoring	-	7			-	-	-	1	9	-	-	9	-	-	-	-	-		111	-
	Radiation Monitoring - RCA	-	65	1	2	53	-	-	25	145	145	-	-	316	-	-	-	-	12,826	782	-
	Reactor Coolant Reactor Hot Sampling	-	216 116	20 11	16	38 9	249 108	-	126 60	666 311	666 311	-	-	229 54	730 312	-	-	-	56,440 22,678	2,891 1,499	-
	Reactor Makeup	-	41	- 11	- '		106	-	60	47	911	-	47	- 54	512	-	-	-	22,676	1,499 583	-
	Reactor Makeup - RCA	-	4	0	0	5	-	-	2	11	11	-		28	-	_	-	-	1,148	47	-
	Reactor Vessel	-	16	1	0	4	5	-	6	32	32	-	-	22	14	-	-	-	1,816	225	-
	Residual Heat Removal Safeguards Chilled Water	-	354 5	84	86	477	1,102	-	457 1	2,562	2,562	-	- 6	2,853	3,244	-	-	-	324,232	5,039 75	-
	Safeguards Chilled Water - RCA	-	5 5	0	0	4	-	-	2	11	11	-	- 6	26	-	_	-	-	1,045	51	-
	Safety Injection	-	793	42	72	1,117	395	-	479	2,898	2,898	-	-	6,676	1,161	-	-	-	345,708	11,029	-
	Sampling	-	48	3	2	6	32	-	22	113	113	-	-	37	93	-	-	-	7,628	645	-
	Service Bldg & New Cmptr Vent Shield Bldg Ventilation	-	0 108	13	25	339	163	-	0 124	0 771	771	-	0	2,028	484	-	-	-	113,139	6 1,555	-
	Spent Fuel Pool Cooling	-	33	3	2	6	37	-	19	101	101	-	-	39	107		-	-	8,481	427	-
4b.1.2.58	Spent Fuel Pool Normal Ventilation	-	24	1	2	44	4	-	14	90	90	-	-	265	12	-	-	-	11,505	352	-
	Station & Instrument Air	Ē	161	-	-	-	-	-	24	185	-	-	185	-	-	-	-	-	-	2,424	=
	Station & Instrument Air - RCA Turbine Bldg Traps & Drains	-	299 30	3	12	272	-	-	118 5	704 35	704	-	- 35	1,625	-	-	-	-	65,986	3,638 462	-
	Turbine Bldg Traps & Drains - RCA	-	30	0	1	30	-	-	12	73	73	-	-	180	_	-	_	-	7,321	344	-
4b.1.2.63	Turbine Bldg Ventilation	-	46	-	-	-	-	-	7	53	-	-	53	-	-	-	-	-	· -	655	-
	Unit Coolers	-	23	- 0	-	-	-	-	3	26	-	-	26	-	-	-	-	-	- 0.410	332	-
	Unit Coolers - RCA Waste Gas Disposal	-	56 438	43	2 45	39 410	464	-	20 298	117 1,699	117 1,699	-	-	232 2,453	1,358	-	-	-	9,413 187,339	690 5,879	-
	Waste Liquid Disposal	-	1,642	116	100	612	1,234	-	837	4,541	4,541	-	-	3,655	3,594	-	-	-	381,754	22,011	-
	Waste Solid Disposal	-	132	12	11	65	134	-	79	433	433	-	-	389	393	-	-	-	41,177	1,781	-
4b.1.2	Totals	-	17,877	633	1,092	17,625	5,377	-	8,385	50,989	47,545	-	3,444	105,339	15,761	-	-	-	5,294,310	240,033	-
4b.1.3	Scaffolding in support of decommissioning	-	4,297	33	15	281	45	-	1,133	5,804	5,804	-	-	1,518	134	-	-	-	76,824	35,578	-
Decontan	nination of Site Buildings																				
4b.1.4.1		1,096		240	1,236	373	7,080	-	3,215	15,768	15,768	-	-	2,230	67,331	-	-	-	3,286,725	45,740	-
	Auxiliary Pool-work Wests Possiving Tonk	1,168	375 25	23	117 17	177	648 97	-	886 33	3,395	3,395 175	-	-	1,060	6,118 929	-	-	-	332,495	21,235 266	-
4b.1.4.3 4b.1.4.4	Backwash Waste Receiving Tank Drum Transfer & Truck Loading Enclosure	16		3 1	17 3	3	97	-	33 15	175 59	175 59	-	-	19	929 135	-	-	-	43,896 7,118	266 328	-
4b.1.4.5	LLRW Storage Enclosure	111		3	17	6	96	-	95	377	377	-	-	38	920	-	-	-	44,971	2,151	-
4b.1.4.6	Radwaste	50	21	1	8	7	43	-	43	174	174	-	-	42	412	-	-	-	21,136	964	-
4b.1.4.7	Resin Disposal	15		1	3	14	14 195	-	16 833	2 420	72	-	-	83	124	-	-	-	9,271 177,755	340	-
4b.1.4.8 4b.1.4	Fuel Handling of Aux Building Totals	924 3,380	1,015 4,031	13 285	45 $1,445$	404 985	8,187	-	5,137	3,430 $23,450$	3,430 23,450	-	-	2,417 5,889	1,652 77,619	-	-	-	3,923,368	27,145 98,170	-
10.1.1		5,500	4,001	200	1,110	500	0,101							0,000	.1,010				5,525,550	50,170	
4b.1.5	Prepare/submit License Termination Plan	-	-	-	-	-	-	225	34	259	259	-	-	-	-	-	-	-	-	=	1,751
4b.1.6	Receive NRC approval of termination plan									a											

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Table I-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(		1 2020 Donars	,											
Activity	7	Decon	Removal	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Total	Total	NRC Lic. Term.	Spent Fuel Management	Site Restoration	Processed Volume	Class A	Burial Class B	Volumes Class C	GTCC	Burial / Processed	Craft	Utility and Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
4b.1	Subtotal Period 4b Activity Costs	3,693	26,240	1,036	2,594	18,892	14,312	225	15,045	82,037	78,593	-	3,444	112,746	95,607	-	-	-	9,427,420	374,358	1,751
Period 4b 4b.2.1	Additional Costs							1.005	011	1.040	1,348										0.040
4b.2.1 4b.2.2	License Termination Survey Planning Excavation of Underground Services	-	1,175	-	-	-	-	1,037 225	311 328	1,348 1,728	1,348 1,728	-	-	-	-	-	-	-	-	7,411	6,240
4b.2.3	Operational Equipment	-	1,170	11	36	606	-	-	97	751	751	-	-	5,880	-		-	-	147,000	16	
4b.2	Subtotal Period 4b Additional Costs	-	1,175	11	36	606	-	1,262	736	3,827	3,827	-	-	5,880	-	-	-	-	147,000	7,427	
Period 4b	Collateral Costs																				
4b.3.1	Process decommissioning water waste	7		12	21	-	48	-	20	107	107	-	-	-	109	-	-	-	6,547	21	-
4b.3.3	Small tool allowance	-	443	130	67	1,112	178	-	66	509	509	-	-	-	-	-	-	-	-	- 145	-
4b.3.4 4b.3.5	Decommissioning Equipment Disposition Prairie Island Indian Community Payments	-	-	130	67	1,112	178	2,225	234	1,722 $2,225$	1,722	2,225	-	6,000	529	-	-	-	303,608	147	-
4b.3	Subtotal Period 4b Collateral Costs	7	443	142	88	1,112	225	2,225	320	4,563	2,338	2,225	=	6,000	638	-	-	-	310,155	168	
Period 4b	Period-Dependent Costs																				
4b.4.1	Decon supplies	1,449	-	-	-	-	-	-	362	1,811	1,811	-	-	-	-	-	-	-	-	-	-
4b.4.2	Insurance	=	-	-	-	-	-	862	86	949	949	-	-	-	-	-	-	-	-	-	-
4b.4.3	Property taxes	-	- 0.010	-	-	-	-	5,715	572	6,287	3,785	2,502	-	-	-	-	-	-	-	-	-
4b.4.4 4b.4.5	Health physics supplies Heavy equipment rental	-	3,213 4,577	-	-	-	-	-	803 687	4,016 5,263	4,016 5,263	-	-	-	-	-	-	-	-	-	-
4b.4.6	Disposal of DAW generated	-	4,077	116	47	-	482	-	139	784	784	-	-	-	5,851	-	-	-	117,027	191	-
4b.4.7	Plant energy budget	-	-	-	-	-		2,165	325	2,490	2,490	-	-	-	-,	-	-	-	,	-	-
4b.4.8	NRC ISFSI Fees	-	-	-	-	-	-	213	21	234	-	234	-	-	-	-	-	-	-	-	-
4b.4.9	NRC Fees	-	-	-	-	-	-	562	56	618	618		-	-	-	-	-	-	-	-	-
4b.4.10	Emergency Planning Fees	-	-	-	-	-	-	132	13	145	- 0.400	145	-	-	-	-	-	-	-	-	-
4b.4.11 4b.4.12	Fixed Overhead Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	2,118 757	318 113	2,436 870	2,436 870	-	-	-	-	-	-	-	-	-	-
4b.4.13	ISFSI Operating Costs	-	-	-	-	-	-	100	15	115	-	115	-	-	-	-	-	-	-	-	-
4b.4.14	Railroad Track Maintenance	-	-	-	-	_	-	111	17	128	128	-	-	-	-	-	-	-	-	-	-
4b.4.15	Remedial Actions Surveys	-	-	-	-	-	-	1,995	299	2,294	2,294	-	-	-	-	-	-	-	-	-	-
4b.4.16	Security Staff Cost	-	-	-	-	-	-	10,435	1,565	12,000	8,988	3,012	-	-	-	-	-	-	-	-	160,203
4b.4.17 4b.4.18	DOC Staff Cost	-	-	-	-	-	-	22,641 28,347	3,396 4,252	26,038 32,600	26,038 31,361	1,239	-	-	-	-	-	-	-	-	248,175 440,789
4b.4.18 4b.4	Utility Staff Cost Subtotal Period 4b Period-Dependent Costs	1,449	7,790	116	47	-	482	76,155	13,040	99,079	91,832	7,247	•	-	5,851	-	-	-	117,027	191	849,167
4b.0	TOTAL PERIOD 4b COST	5,149	35,647	1,305	2,766	20,610	15,020	79,868	29,142	189,506	176,590	9,472	3,444	124,626	102,096	-	-	-	10,001,600	382,144	857,159
PERIOD	4f - License Termination																				
Period 4f	Direct Decommissioning Activities																				
4f.1.1	ORISE confirmatory survey	=	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-
4f.1.2	Terminate license									a											
4f.1	Subtotal Period 4f Activity Costs	-	-	-	-	-	-	166	50	216	216	•	-	-	-	-	-	-	-	-	-
Period 4f 4f.2.1	Additional Costs License Termination Survey	_	_	_	_	_	_	7,041	2,112	9,154	9,154	_	-	_	_	_	_	-	_	100,895	3,120
4f.2	Subtotal Period 4f Additional Costs	-	-	-	-	-	-	7,041	2,112	9,154	9,154	-	-	-	-	-	-	-	-	100,895	3,120
	Collateral Costs																				
4f.3.1	DOC staff relocation expenses	-	-	-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-
4f.3.2 4f.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	218 934	33	250 934	-	250 934	-	-	-	-	-	-	-	-	-
4f.3.3 4f.3	Prairie Island Indian Community Payments Subtotal Period 4f Collateral Costs	-	-	-	-	-	-	2,416	222	2,638	1,454	1,185	-	-	-	-	-	-	-	-	-
Period 4f	Period-Dependent Costs																				
4f.4.1	Insurance	-	-	-	-	-	-	362	36	398	-	398	-	-	-	-	-	-	-	-	-
4f.4.2	Property taxes	-	<u>-</u>	-	-	-	-	2,306	231	2,537	1,469	1,068	-	-	-	-	-	-	-	-	-
4f.4.3	Health physics supplies	-	710		-	-	-	-	178	888	888	-	-	-	- 004	-	-	-		-	-
4f.4.4 4f.4.5	Disposal of DAW generated Plant energy budget	-	-	7	3	-	28	243	8 36	45 279	45 279	-	-	-	334	-	-	-	6,685	11	-
4f.4.6	NRC ISFSI Fees	-	-	-	-	-	-	90	9	98	-	98	-	-		-	-	-	-	-	-
4f.4.7	NRC Fees	-	-	=	-	-	-	263	26	290	290	-	-	-	-	-	-	-	-	-	=
4f.4.8	Emergency Planning Fees	-	-	-	-	-	-	55	6	61	-	61	-	-	-	-	-	-	-	-	-
4f.4.9	Fixed Overhead	-	-	-	-	-	-	890	133	1,023	1,023	-	-	-	-	-	-	-	-	-	-
4f.4.10	ISFSI Operating Costs	-	-	-	-	-	-	42	6	48	-	48	-	-	-	-	-	-	-	-	-

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Table I-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

						(110	ousanus c	oi 2020 Dollars	s)											
A		D 1	D 1 1	<b>m</b>	Off-Site	LLRW	0:1	m . 1	m . 1	NRC	Spent Fuel	Site	Processed			Volumes	CITIC C	Burial /	G G	Utility and
Activity Index Activity Description	Decon Cost	Removal Cost	Packaging Costs	Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
Period 4f Period-Dependent Costs (continued)																				
4f.4.11 Railroad Track Maintenance	-	-	-	-	-	-	47	7	54		-	-	-	-	-	-	-	-	-	-
4f.4.12 Security Staff Cost 4f.4.13 DOC Staff Cost	-	-	-	-	-	-	1,835 4,238	275 636	2,111 4,874	927 4,874	1,184	=	-	-	-	-	-	-	-	27,614 46,283
4f.4.14 Utility Staff Cost	-	-	-	-	-	-	4,236	602	4,613		438	-	-		-	-	-	-	-	59,507
4f.4 Subtotal Period 4f Period-Dependent Costs	-	710	7	3	-	28	14,382	2,189	17,319		3,296	-	-	334	-	-	-	6,685	11	133,404
4f.0 TOTAL PERIOD 4f COST	-	710	7	3	-	28	24,006	4,574	29,327	24,846	4,481	-	-	334	-	-	-	6,685	100,906	136,524
PERIOD 4 TOTALS	5,398	5 66,639	19,159	6,333	27,115	34,036	162,064	67,800	388,543	361,874	20,263	6,405	166,102	135,824	125	673	-	14,069,470	673,447	1,616,988
PERIOD 5b - Site Restoration																				
Period 5b Direct Decommissioning Activities																				
Demolition of Remaining Site Buildings								205	<b>*</b> 0.40			¥ 0.40							44.050	
5b.1.1.1 Reactor 5b.1.1.2 Auxiliary	-	4,645 1,993		-	-	-	-	697 299	5,342 2,291	-	-	5,342 2,291	-	-	-	-	-	-	44,679 11,902	-
5b.1.1.3 Condensate Storage Tank Foundation	-	1,995	-	-	-	-	-	299	2,291	-	-	2,291	-	-	-	-	-	-	33	-
5b.1.1.4 Construction Warehouse & Fab Shop	-	130	_	_	-	-	_	19	149	-	-	149	-	-	-	_	-	_	1,405	-
5b.1.1.5 D3/D4 Emergency Generator	-	14		-	-	-	-	2	16	-	-	16	-	-	-	-	-	-	84	-
5b.1.1.6 Drum Transfer & Truck Loading Enclosure	-	20		-	-	-	-	3	24	-	-	24	-	-	-	-	-	-	221	-
5b.1.1.7 Hydrogen House	-	6		-	-	-	-	1	7	-	-	7	-	-	-	-	-	-	47	-
5b.1.1.8 LLRW Storage Enclosure 5b.1.1.9 Misc Structures 2017	-	128 2,617		-	-	-	-	19 393	147 3,009	-	-	147 3,009	-	-	-	-	-	-	853 22,582	-
5b.1.1.10 Radwaste	-	2,617		-	-	-	-	26	202	-	-	3,009	-	-	-	-	-	-	1,400	-
5b.1.1.11 Resin Disposal	-	14		-	-	-	_	2	16		-	16	-	-		-	-	-	120	-
5b.1.1.12 Structures below 3' below grade	-	1,785		-	-	-	-	268	2,052		-	2,052	-	-	-	-	-	-	9,238	-
5b.1.1.13 Sulfuric Acid Tank Enclosure	-	3	-	-	-	-	-	0	4	-	-	4	-	-	-	-	-	-	35	-
5b.1.1.14 Turbine	-	2,140		-	-	-	-	321	2,461	-	-	2,461	-	-	-	-	-	-	21,997	-
5b.1.1.15 Turbine Pedestal	-	365		-	-	-	-	55	420	-	-	420	-	-	-	-	-	-	1,857	-
5b.1.1.16 Warehouse #2	-	24		-	-	-	-	4	27	-	-	27	-	-	-	-	-	-	213	-
5b.1.1.17 Waste Neutralizing Tank House 5b.1.1.18 Waste Oil Storage	-	9		-	-	-	-	1	8 10		-	8 10	-	-	-	-	-	-	56 70	-
5b.1.1.19 Water Treatment	-	324		-	-	-	-	49	373			373	-	-	-		-	-	2,690	-
5b.1.1.20 Fuel Handling of Aux Building	- -	1,095		_	-	-	_	164	1,259		_	1,259	-	-	_	_		_	8,240	_
5b.1.1 Totals	-	15,501		-	-	-	-	2,325	17,826		-	17,826	-	-	-	-	-	-	127,723	=
Site Closeout Activities																				
5b.1.2 Remove Rubble	-	1,517		-	-	-	-	228	1,745		-	1,745	-	-	-	-	-	-	7,408	-
5b.1.3 Grade & landscape site 5b.1.4 Final report to NRC	-	448	-	-	-	-	86	67 13	515 99		-	515	-	-	-	-	-	-	921	667
5b.1 Subtotal Period 5b Activity Costs	-	17,466		-	-	-	86	2,633	20,185		-	20,086	-	-		-		-	136,051	667
·		,					-	_,				,,							,	
Period 5b Additional Costs 5b.2.1 Clean Concrete Disposal		4,912	_			_	10	738	5,660	_	_	5,660							18,372	_
5b.2.2 Intake Structure Cofferdam	-	4,912		-	-	-	- 10	66	508	-	-	508	-	-	-	-	-	-	3,552	-
5b.2.3 Construction Debris	<u>-</u>	-	-	_	-	-	2,150	323	2,473		-	2,473	-	-	-	_	-	_		-
5b.2.4 Backfill	-	9,257	-	-	-	-	´-	1,388	10,645		-	10,645	-	-	-	-	-	-	9,327	-
5b.2.5 Disposition of Original Casks	-	24		418	-	2,390	-	728	3,640		-	-	-	8,929	-	-	-	1,059,612	146	-
5b.2 Subtotal Period 5b Additional Costs	-	14,634	80	418	-	2,390	2,160	3,244	22,926	3,640	-	19,286	-	8,929	-	-	-	1,059,612	31,397	-
Period 5b Collateral Costs		210							215			0.45								
5b.3.1 Small tool allowance 5b.3.2 Spent Fuel Capital and Transfer	-	213	-	-	-	-	5,519	32 828	245 6,347		6,347	245	-	-	-	-	-	-	-	-
5b.3.3 Prairie Island Indian Community Payments		-	-	-	-	-	2,649	- 020	2.649		2.649	-	-	-		-		-	-	-
5b.3 Subtotal Period 5b Collateral Costs	-	213		-	-	-	8,168	860	9,241		8,996	245	-	-	-	-	-	-	-	=
Period 5b Period-Dependent Costs																				
5b.4.1 Insurance	-	-	-	-	-	-	513	51	565		565	-	-	-	-	-	-	-	-	-
5b.4.2 Property taxes	-	7 144	-	-	-	-	5,904	590	6,494		2,663	3,831	-	-	-	-	-	-	-	-
5b.4.3 Heavy equipment rental 5b.4.4 Plant energy budget	-	7,144	-	-	-	-	344	1,072 52	8,215 395		- 395	8,215	-	-	-	-	-	-	-	-
5b.4.5 NRC ISFSI Fees	-	-	-	-	-	-	326	33	359		359	-	-	-	-	-	-	-	-	-
5b.4.6 Emergency Planning Fees	-	-	-	-	-	-	157	16	173		173	-	-	-	-	-	-	-	-	-
5b.4.7 Fixed Overhead	-	-	-	-	-	-	1,024	154	1,178	-	781	397	-	-	-	-	-	-	-	-
5b.4.8 ISFSI Operating Costs	-	-	-	-	-	-	119	18	136	-	136	-	-	-	-	-	-	-	-	=

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Table I-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(111	ousunus c	or 2020 Donars	3)											
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Class B	Volumes Class C Cu. Feet		Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 5b P	eriod-Dependent Costs (continued)																				
5b.4.9 1	Railroad Track Maintenance	-	-	-	-	-	-	133	20	152	(0)	97	56	-	-	-	-	-	-	-	-
	Security Staff Cost	-	-	-	-	-	-	4,976	746	5,722	0	5,310	412	-	-	-	-	-	-	-	74,431
	DOC Staff Cost Utility Staff Cost	-	-	-	-	-	-	10,921 5,170	1,638 776	12,559 5,946	-	1,278	12,559 4,668	-	-	-	-	-	-	-	116,885 76,637
	Subtotal Period 5b Period-Dependent Costs	-	7,144		-	-	-	29,587	5,165	41,895	0	11,757	30,139		-	-	-	-	-	-	267,952
5b.0	TOTAL PERIOD 5b COST	-	39,457	80	418	-	2,390	40,001	11,901	94,247	3,739	20,753	69,756	-	8,929	-	-	-	1,059,612	167,448	268,620
PERIOD 5	c - Fuel Storage Operations/Shipping																				
Period 5c D	rirect Decommissioning Activities																				
	ollateral Costs																				
	Spent Fuel Capital and Transfer	-	-	-	-	-	-	89,253	13,388	102,641	-	102,641	-	-	-	-	-	-	-	-	-
	Prairie Island Indian Community Payments Subtotal Period 5c Collateral Costs	-	-	-	-	-	-	27,796 117,049	13,388	27,796 130,437	-	27,796 130,437	-	-	-	-	-	-	-	-	-
Period 5c P	eriod-Dependent Costs																				
	Insurance	-	-	-	-	-	-	5,388	539	5,927	-	5,927	-	-	-	-	-	-	-	-	-
	Property taxes	-	-	-	-	-	-	31,074	3,107	34,181	-	34,181	-	-	-	-	-	-	-	-	-
	NRC ISFSI Fees Emergency Planning Fees	-	-	-	-	-	-	3,422 1.650	342 165	3,764 1,815	-	3,764 1,815	-	-	-	-	-	-	-	-	-
	Fixed Overhead	-	-	-	-	-	-	3,626	544	4,170	-	4,170	-	-	-	-	-	-	-	-	-
	ISFSI Operating Costs	-	-	-	-	-	-	1,245	187	1,432	-	1,432	-	-	-	-	-	-	-	-	-
5c.4.8 1	Railroad Track Maintenance	-	-	-	-	-	-	1,391	209	1,600	-	1,600	-	-	-	-	-	-	-	=	-
	Security Staff Cost	-	-	-	-	-	-	42,996	6,449	49,446	-	49,446	-	-	-	-	-	-	-	-	624,838
	DOC Staff Cost Utility Staff Cost	-	-	-	-	-	-	3,411 21,001	512 3,150	3,922 $24,151$	-	3,922 24,151	-	-	-	-	-	-	-	-	23,142 306,633
	Subtotal Period 5c Period-Dependent Costs	-	-	-	-		-	115,204	15,204	130,408	-	130,408	-	-	-	-	-	-	-	-	954,613
5c.0	ГОТАL PERIOD 5c COST	-	-	-	-	-	-	232,252	28,592	260,844	-	260,844	-	-	-	-	-	-	-	-	954,613
PERIOD 5	d - GTCC shipping																				
Period 5d D	Direct Decommissioning Activities																				
Nuclear Ste	eam Supply System Removal																				
5d.1.1.1	Vessel & Internals GTCC Disposal	-	-	1,444		-	8,680	-	1,663	11,787	11,787	-	-	-	-	-	-	1,773			-
	Totals	-	-	1,444		-	8,680	-	1,663	11,787	11,787	-	-	-	-	-	-	1,773			-
5d.1	Subtotal Period 5d Activity Costs	-	-	1,444	-	-	8,680	-	1,663	11,787	11,787	-	-	-	-	-	-	1,773	344,823	-	-
	ollateral Costs Spent Fuel Capital and Transfer						<u>-</u>	28	4	32	_	32									
	Prairie Island Indian Community Payments	-	-	-	-	-	-	48	-	48		48	-	-	-	-	-	-	-	-	-
	Subtotal Period 5d Collateral Costs	-	-	-	-	-	-	76	4	80	-	80	-	-	-	-	-	-	-	-	-
	eriod-Dependent Costs																				
	Insurance	-	-	-	-	-	-	9	1 5	10 58	10 58	-	-	-	-	-	-	-	-	-	-
	Property taxes NRC ISFSI Fees	-	-	-	-	-	-	53 4	0	4		4	-	-	-	-	-	-	-	-	-
	Emergency Planning Fees	-	-	-	-	-	-	3	0	3	-	3	-	-	-	-	-	-	-	-	-
5d.4.6	Fixed Overhead	-	-	-	-	-	-	6	1	7	7	-	-	-	-	-	-	-	-	-	-
	Railroad Track Maintenance	-	-	-	-	-	-	2	0	3		-	-	-	-	-	-	-	-	-	1,077
	Security Staff Cost Utility Staff Cost	-	-	-	-	-	-	74 19	11 3	85 22	85 22	-	-	-	-	-	-	-	-		269
	Subtotal Period 5d Period-Dependent Costs	-	-	-	-	-	-	171	22	194	186	7	-	-	-	-	-	-	-	-	1,346
5d.0	TOTAL PERIOD 5d COST	-	-	1,444	-	-	8,680	247	1,689	12,060	11,973	87	-	-	-	-	-	1,773	344,823	-	1,346
PERIOD 5	e - ISFSI Decontamination																				
Period 5e D	birect Decommissioning Activities																				
	dditional Costs																				
	License Termination ISFSI Subtotal Period 5e Additional Costs	-	0	2 2	17 17	-	142 142		339 339	1,696 1,696	1,696 1,696	-	-	-	424 424		-	-	65,754 65,754	5,882 5,882	
Je.2	Judiotai i ciioù de Additiollai Costs	-	U	2	11	-	144	1,197	999	1,090	1,090	-	-	-	424	-	-	-	00,704	9,002	1,101

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

Table I-2 Prairie Island SAFSTOR Unit 2 SAFSTOR Decommissioning Cost Estimate with 100 Years of Spent Fuel Storage (Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
Period 5e Period-De	enendent Costs																				
5e.4.1 Insurance		-	-	-	_	_	-	93	23	116	116	-	-	-	-	-	-	-	-	-	-
5e.4.2 Property	taxes	-	-	-	-	-	-	56	14	69	69	-	-	-	-	-	-	-	-	-	-
5e.4.3 Plant ene	ergy budget	-	-	-	-	-	-	11	3	13	13	-	-	-	-	-	-	-	-	-	-
5e.4.4 Fixed Ov		-	-	-	-	-	-	54	14	68	68	-	-	-	-	-	-	-	-	-	-
	Track Maintenance	-	-	-	-	-	-	21	5	26	26	-	-	-	-	-	-	-	-	-	-
	Staff Cost	-	-	-	-	-	-	174	43	217	217	-	-	-	-	-	-	-	-	-	2,500
5e.4.7 Utility St		-	-	-	-	-	-	129	32	161	161	-	-	-	-	-	-	-	-	-	1,896
	Period 5e Period-Dependent Costs	-	-	-	-	-	-	536	134	670	670	-	-	-	-	-	-	-	-	-	4,396
5e.0 TOTAL F	PERIOD 5e COST	-	0	2	17	-	142	1,733	473	2,367	2,367	-	-	-	424	-	-	-	65,754	5,882	5,556
PERIOD 5f - ISFS	I Site Restoration																				
Period 5f Direct Dec	commissioning Activities																				
Period 5f Additional																					
	on and Site Restoration of ISFSI	-	1,121	-	-	-	-	161	192	1,474	-	-	1,474	-	-	-	-	-	-	4,846	80
5f.2 Subtotal	Period 5f Additional Costs	-	1,121	-	-	-	-	161	192	1,474	-	-	1,474	-	-	-	-	-	-	4,846	80
Period 5f Collateral																					
	ol allowance	-	7	-	-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	-	-
5f.3 Subtotal	Period 5f Collateral Costs	-	7	-	-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	-	-
Period 5f Period-Dep																					
5f.4.2 Property		-	-	-	-	-	-	28	3	31	-	-	31	-	-	-	-	-	-	-	-
	quipment rental	-	59	-	-	-	-	-	9	68	-	-	68	-	-	-	-	-	-	-	-
	ergy budget	-	-	-	-	-	-	6	1	6	-	-	6	-	-	-	-	-	-	-	-
5f.4.5 Fixed Ov		-	-	-	-	-	-	28	4	32	-	-	32	-	-	-	-	-	-	-	-
	Track Maintenance	-	-	-	-	-	-	11	2	12	-	-	12	-	-	-	-	-	-	-	
	Staff Cost	-	-	-	-	-	-	89	13	102	-	-	102	-	-	-	-	-	-	-	1,281
5f.4.8 Utility St		-	-	-	-	-	-	55	8	63	-	-	63	-	-	-	-	-	-	-	795
5f.4 Subtotal	Period 5f Period-Dependent Costs	-	59	-	-	-	-	216	40	315	-	-	315	-	-	-	-	-	-	-	2,076
5f.0 TOTAL F	PERIOD 5f COST	-	1,187	-	-	-	-	377	233	1,798	-	-	1,798	-	-	-	-	-	-	4,846	2,156
PERIOD 5 TOTAL	LS	-	40,644	1,525	435	-	11,212	274,611	42,889	371,316	18,078	281,684	71,553	-	9,353	-	-	1,773	1,470,189	178,175	1,232,291
TOTAL COST TO D	DECOMMISSION	12,610	122,384	21,327	7,312	27,293	47,794	1,413,637	242,212	1,894,569	983,908	832,007	78,655	172,234	167,056	125	673	1,773	16,288,180	950,825	7,429,280

TOTAL COST TO DECOMMISSION WITH 14.66% CONTINGENCY:	\$1,894,569	thousands of 2020 dollars
TOTAL NRC LICENSE TERMINATION COST IS 51.93% OR:	\$983,908	thousands of 2020 dollars
SPENT FUEL MANAGEMENT COST IS 43.92% OR:	\$832,007	thousands of 2020 dollars
NON-NUCLEAR DEMOLITION COST IS 4.15% OR:	\$78,655	thousands of 2020 dollars
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	167,854	Cubic Feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	1,773	Cubic Feet
TOTAL SCRAP METAL REMOVED:	42,406	Tons
TOTAL CRAFT LABOR REQUIREMENTS:	950,825	Man-hours

End Notes: n/a - indicates that this activity not charged as decommissioning expense a - indicates that this activity performed by decommissioning staff 0 - indicates that this value is less than 0.5 but is non-zero A cell containing " - " indicates a zero value  $\frac{1}{2} \frac{1}{2} \frac{1}{$ 

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis Document X01-1775-001, Rev. 0 Appendix J, Page 1 of 25

### APPENDIX J

### **DETAILED COST ANALYSIS**

### SCENARIO 8: SAFSTOR with 200 Year DFS

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Prairie Island Nuclear Generating Plant, Unit 1	J-2
Prairie Island Nuclear Generating Plant, Unit 2	J-14

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Table J-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(Tl	nousands	of 2020 Dollar	rs)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs		Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs		Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet		GTCC Cu. Feet			Contractor Manhours
PERIOD	1a - Shutdown through Transition																				
Period 1a	Direct Decommissioning Activities																				
1a.1.1	SAFSTOR site characterization survey	-	-	-	-	-	-	415	124	539	539	-	-	-	-	-	-	-	-	-	
1a.1.2 1a.1.3	Prepare preliminary decommissioning cost Notification of Cessation of Operations	-	-	-	-	-	-	167	25	192 a	192	-	-	-	-	-	-	-	-	-	1,300
1a.1.4 1a.1.5	Remove fuel & source material Notification of Permanent Defueling									n/a a											
1a.1.6 1a.1.7	Deactivate plant systems & process waste Prepare and submit PSDAR							257	39	a 296	296										2,000
1a.1.8	Review plant dwgs & specs.	-	-	-	-	-	-	167	25	192	192	-	-	-	-	-	-	-	-	-	1,300
1a.1.9 1a.1.10	Perform detailed rad survey Estimate by-product inventory	-	-	-	-	-	-	129	19	a 148	148	-	-	-	-	_	-	-	-	-	1,000
1a.1.11 1a.1.12	End product description Detailed by-product inventory	-	-	-	-	-	-	129 193	19 29	148 222	148 222	-	-	-	-	-	-	-	-	-	1,000 1,500
1a.1.13	Define major work sequence	-	-	-	-	-	-	129	19	148	148		-	-	-	-	-	-	-	-	1,000
1a.1.14 1a.1.15	Perform SER and EA Prepare/submit Defueled Technical Specifications	-	-	-	-	-	-	398 964	60 145	458 1,108	458 1,108		-	-	-	-	-	-	-	-	3,100 7,500
1a.1.16 1a.1.17	Perform Site-Specific Cost Study Prepare/submit Irradiated Fuel Management Plan	-	-	-	-	-	-	643 129	96 19	739 148	739 148	-	-	-	-	-	-	-	-	-	5,000 1,000
		-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	1,000
	Specifications Prepare plant and facilities for SAFSTOR	-	_	_	_	_	-	632	95	727	727	<u>-</u>	-	-	_	_	_	_	-	_	4,920
1a.1.18.2	Plant systems Plant structures and buildings	-	-	-	-	-	-	536 401	80 60	616 461	616 461	-	-	-	-	-	-	-	-	-	4,167 3,120
1a.1.18.4	Waste management	-	-	-	-	-	-	257	39	296	296		-	-	-	-	-	-	-	-	2,000
1a.1.18.5 1a.1.18	Facility and site dormancy Total	-	-	-	-	-	-	257 2,083	39 312	296 2,395	296 2,395		-	-	-	-	-	-	-	-	2,000 16,207
Dotailed !	Work Procedures																				
1a.1.19.1	Plant systems	-	-	-	-	-	-	152		175	175		-	-	-	-	-	-	-	-	1,183
	Facility closeout & dormancy Total	-	-	-	-	-	-	154 306	23 46	177 352	177 352	-	-	-	-	-	-	-	-	-	1,200 2,383
1a.1.20	Procure vacuum drying system						_	13	2	15	15		_	_	_	_	_		_		100
1a.1.21	Drain/de-energize non-cont. systems							10	2	a	10										100
1a.1.22 1a.1.23	Drain & dry NSSS Drain/de-energize contaminated systems									a a											
1a.1.24 1a.1	Decon/secure contaminated systems Subtotal Period 1a Activity Costs						_	6,120	980	a 7,100	7,100	_	_	_	_	_	_	_			44,390
	·							0,120	300	7,100	7,100										44,000
1a.3.1	Collateral Costs Prairie Island Indian Community Payments	-	-	-	-	-	-	1,249	-	1,249	-	1,249		-	-	-	-	-	-	-	-
1a.3	Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	1,249	-	1,249	-	1,249	-	-	-	-	-	-	-	-	-
Period 1a 1a.4.1	Period-Dependent Costs Insurance							1,660	166	1,826	1,826										
1a.4.2	Property taxes	-	-	-	-	-	-	3,623	362	3,985	3,985	-	-	-	-	-	-	-	-	-	-
1a.4.3 1a.4.4	Health physics supplies Heavy equipment rental	-	614 753		-	-	-	-	153 113	767 866	767 866	-	-	-	-	-	-	-		-	-
1a.4.5	Disposal of DAW generated	-	-	12	5	-	50	-	14	82	82	-	-	-	610	-	-	-	12,190	20	-
1a.4.6 1a.4.7	Plant energy budget NRC Fees	-	-	-	-	-	-	1,621 892	243 89	1,864 981	1,864 981	-	- -	-	-	-	-	-	-	-	-
1a.4.8	Emergency Planning Fees	-	-	-	-	-	-	2,174	217	2,392	-	2,392	-	-	-	-	-	-	-	-	-
1a.4.9 1a.4.10	Fixed Overhead Spent Fuel Pool O&M	-	-	-	-	-	-	1,440 422	216 63	1,656 486	1,656	486	-	-	-	-	-	-	-	-	-
1a.4.11 1a.4.12	ISFSI Operating Costs Railroad Track Maintenance	-	-	-	-	-	-	56 63	8 9	64 72	72	64	-	-	-	-	-	-	-	-	-
1a.4.13	Security Staff Cost	-	-	-	-	-	-	8,328	1,249	9,577	9,577	-	-	-	-	-	-	-	-	-	122,720
1a.4.14 1a.4	Utility Staff Cost Subtotal Period 1a Period-Dependent Costs	-	1,367	12	5	-	50	26,931 47,211	4,040 6,945	30,971 55,590	30,971 52,648	2,942	-	-	610	-	-	-	12,190	20	422,240 544,960
1a.0	TOTAL PERIOD 1a COST	-	1,367				50	54,580	7,925	63,939	59,748	4,191	_	-	610		-	_	12,190		589,350
			1,001	12			30	- 1,000	1,020	-5,000	50,.10	1,101			010				12,100	20	,

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Table J-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(11	iousanus	oi 2020 Dollai	. 5)											
						Off-Site	LLRW	0.1			NRC	Spent Fuel	Site	Processed		Burial '	Volumes	amaa	Burial/		Utility and
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet		Class C Cu. Feet	GTCC Cu. Feet		Craft Manhours	Contractor Manhours
PERIOI	0 1b - SAFSTOR Limited DECON Activities																				
Period 11	b Direct Decommissioning Activities																				
Decontar	mination of Site Buildings																				
	Reactor	1,199	-	-	-	-	-	-	599	1,798	1,798	-	-	-	-	-	-	-	-	17,003	-
1b.1.1	Totals	1,199	-	-	-	-	-	-	599	1,798	1,798	-	-	-	-	-	-	-	-	17,003	-
1b.1	Subtotal Period 1b Activity Costs	1,199	-	-	-	-	-	-	599	1,798	1,798	-	-	-	-	-	-	-	-	17,003	-
Period 11	b Additional Costs																				
1b.2.1 1b.2	Spent Fuel Pool Isolation Subtotal Period 1b Additional Costs	-	-	-	-	-	-	12,675 12,675	1,901 1,901	14,576 $14,576$	14,576 14,576	-	-	-	-	-	-	-	-	-	-
	b Collateral Costs							12,010	1,501	14,010	14,010										
1b.3.1	Decon equipment	1,055	-	-	-	-	-	-	158	1,213	1,213	-	-	-	-	-	-	-	-	-	-
1b.3.2	Process decommissioning water waste	79	-	52	94	-	212		112	549	549	-	-	-	487		-	-	29,193	95	-
1b.3.4 1b.3.5	Small tool allowance Prairie Island Indian Community Payments	-	20			-	-	311	3	23 311	23	311	-	-	-	-	-	-	-	-	-
1b.3.5 1b.3	Subtotal Period 1b Collateral Costs	1,134	20			-	212		273	2,097	1,785	311		-	487		-	-	29,193	95	-
Period 11	b Period-Dependent Costs																				
1b.4.1	Decon supplies	449	-	-	-	-	-	-	112	561	561	-	-	-	-	-	-	-	-	-	-
1b.4.2	Insurance	-	-	-	-	-	-	414	41	455	455	-	-	-	-	-	-	-	-	-	-
1b.4.3 1b.4.4	Property taxes Health physics supplies	-	250	-	-	-	-	903	90 63	994 313	994 313	-	-	-	-	-	-	-	-	-	-
1b.4.4	Heavy equipment rental	-	188		-	-	-	-	28	216	216	-	-	-	-	-	-	-	-	-	-
1b.4.6	Disposal of DAW generated	-	-	6	3	-	27	-	8	43	43	-	-	-	324	-	-	-	6,486	11	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	404	61	465	465	-	-	-	-	-	-	-	-	-	-
1b.4.8 1b.4.9	NRC Fees Emergency Planning Fees	-	-	-	-	-	-	161 542	16 54	177 596	177	596	-	-	-	-	-	-	-	-	-
1b.4.10	Fixed Overhead	-	-	-	-	-	-	359	54	413	413	-	-	-	-	-	-	-	-	-	-
1b.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	105	16	121	-	121	-	-	-	-	-	-	-	-	-
1b.4.12	ISFSI Operating Costs	-	-	-	-	-	-	14	2	16		16	-	-	-	-	-	-	-	-	-
1b.4.13 1b.4.14	Railroad Track Maintenance Security Staff Cost	-	-	-	-	-	-	16 2.076	2 311	18 2,388	18 2,388	-	-	-	-	-	-	-	-	-	30,596
1b.4.14 1b.4.15	Utility Staff Cost	-	-	-	-	-	-	6,714	1,007	7,722	7,722	-	-	-	-	-		-	-	-	105,271
1b.4	Subtotal Period 1b Period-Dependent Costs	449	438	6	3	-	27	11,709	1,866	14,498	13,764	733	-	-	324	-	-	-	6,486	11	135,867
1b.0	TOTAL PERIOD 1b COST	2,781	458	59	97	-	239	24,696	4,640	32,969	31,924	1,045	-	-	811	-	-	-	35,678	17,108	135,867
PERIOI	O 1c - Preparations for SAFSTOR Dormancy																				
Period 1	c Direct Decommissioning Activities																				
1c.1.1	Prepare support equipment for storage	-	527	_	-	-	-	_	79	606	606	-	-	-	-	-	-	_	-	3,000	-
1c.1.2	Install containment pressure equal. lines	-	54	-	-	-	-	-	8	62	62	-	-	-	-	-	-	-	-	700	-
1c.1.3 1c.1.4	Interim survey prior to dormancy Secure building accesses	-	-	-	-	-	-	733	220	953	953	-	-	-	-	-	-	-	-	12,801	-
1c.1.5	Prepare & submit interim report	-	-	-	-	-	-	75	11	a 86	86	-	-	-	-	-	-	-	-	-	583
1c.1	Subtotal Period 1c Activity Costs	-	581	-	-	-	-	808	318	1,707	1,707	-	-	-	-	-	-	-	-	16,501	583
Period 1	c Collateral Costs																				
1c.3.1	Process decommissioning water waste	91		60		-	245		129	634	634	-	-	-	561	-	-	-	33,685	109	-
1c.3.3 1c.3.4	Small tool allowance	-	5	-	-	-	-	163	1 25	6 188	6	188	-	-	-	-	-	-	-	-	-
1c.3.4 1c.3.5	Spent Fuel Capital and Transfer Retention and Severance	-	-	-	-	-	-	1,032	25 155	1,187	1,187	188	-	-	-		-	-	-	-	-
1c.3.6	Prairie Island Indian Community Payments	-	-	-	-	-	-	311	-	311	-	311	-	-	-	-	-	-	-	-	-
1c.3	Subtotal Period 1c Collateral Costs	91	5	60	109	-	245	1,507	309	2,325	1,826	499	-	-	561	-	-	-	33,685	109	-
	c Period-Dependent Costs																				
1c.4.1 1c.4.2	Insurance Property taxes	-	-	-	-	-	-	414 903	41 90	455 994	455 994	-	-	-	-	-	-	-	-	-	-
1c.4.2 1c.4.3	Froperty taxes Health physics supplies	-	248		-	-	-	903	62	309	309	-	-	-	-	-	-	-	-	-	-
1c.4.4	Heavy equipment rental	-	188	-	-	-	-	-	28	216	216	-	-	-	-	-	-	-	-	-	-
1c.4.5	Disposal of DAW generated	-	-	3	1	-	13		4	20	20	-	-	-	152	-	-	-	3,039	5	-
1c.4.6	Plant energy budget	-	-	-	-	-	-	404	61	465	465	-	-	-	-	-	-	-	-	-	-

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Table J-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	g Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
Poriod 1a	c Period-Dependent Costs (continued)																				
1c.4.7	NRC Fees	-	-	_	-	_	_	161	16	177	177	_	-	-	-	-	-	-	-	-	_
1c.4.8	Emergency Planning Fees	-	-	-	-	-	-	542	54	596	-	596	-	-	-	-	-	-	-	-	-
1c.4.9	Fixed Overhead	-	-	-	-	-	-	359	54	413	413	-	-	-	-	-	-	-	-	-	-
1c.4.10 1c.4.11	Spent Fuel Pool O&M ISFSI Operating Costs	-	-	-	-	-	-	105 14	16 2		-	121 16	-	-	-	-	-	-	-	-	-
1c.4.11	Railroad Track Maintenance	-	-	-	-	-	-	16	2		18	- 10		-	-	-	-	-	-	-	-
1c.4.13	Security Staff Cost	-	-	-	-	-	-	2,076	311		2,388	-	-	-	-	-	-	-	-	-	30,596
1c.4.14	Utility Staff Cost	-	-	-	-	-	-	6,714	1,007		7,722	-	-	-	-	-	-	-	-	-	105,271
1c.4	Subtotal Period 1c Period-Dependent Costs	-	435	3	3	-	13	11,709	1,749	13,910	13,177	733	-	-	152	-	-	-	3,039	5	135,867
1c.0	TOTAL PERIOD 1c COST	91	1,021	63	3 11		257	14,024	2,376	17,943	16,710	1,233	-	-	713	-	-	-	36,724	16,615	136,450
PERIOD	O 1 TOTALS	2,873	2,846	134	1 21:	-	546	93,299	14,941	114,851	108,382	6,468	-	-	2,134	-	-	-	84,593	33,743	861,667
PERIOD	O 2a - SAFSTOR Dormancy with Wet Spent Fuel Storage																				
	a Direct Decommissioning Activities																				
2a.1.1 2a.1.2	Quarterly Inspection Semi-annual environmental survey									a a											
2a.1.2 2a.1.3	Prepare reports									a a											
2a.1.4	Bituminous roof replacement	-	-	-	-	-	-	54	8	62	62	-	-	-	-	-	-	-	-	-	-
2a.1.5	Maintenance supplies	-	-	-	-	-	-	520	130		650	-	-	-	-	-	-	-	-	-	-
2a.1	Subtotal Period 2a Activity Costs	-	-	-	-	-	-	574	138	712	712	-	-	-	-	-	-	-	-	-	-
	a Additional Costs																				
2a.2.1	Security Modifications	-	-	-	-	-	-	4,348	652		5,000	-	-	-	-	-	-	-	-	-	-
2a.2	Subtotal Period 2a Additional Costs	-	-	-	-	-	-	4,348	652	5,000	5,000	-	-	-	-	-	-	-	-	-	-
	a Collateral Costs																				
2a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	66,237	9,936	76,173	-	76,173	-	-	-	-	-	-	-	-	-
2a.3.2 2a.3.3	Retention and Severance Prairie Island Indian Community Payments	-	-	-	-	-	-	22,434 4,654	3,365	25,799 4,654	25,799	4,654	-	-	-	-	-	-	-	-	-
2a.3.3	Subtotal Period 2a Collateral Costs	-	-	-	-	-	-	93,325	13,301		25,799	80,827	-	-	-	-	-	-	-	-	-
Period 2a	a Period-Dependent Costs																				
2a.4.1	Insurance	-	-	-	-	-	-	1,804	180		1,985	-	-	-	-	-	-	-	-	-	-
2a.4.2	Property taxes	-	-	-	-	-	-	13,489	1,349		14,838	-	-	-	-	-	-	-	-	-	-
2a.4.3 2a.4.4	Health physics supplies Disposal of DAW generated	-	801	14		-	- 59	-	200 17	1,001 96	1,001 96	-	-	-	714	-	-	-	14,273	23	-
2a.4.4 2a.4.5	Plant energy budget	-	-	14	Į.	-	99	1.208	181	1,389	1.389	-	-	-	714	-	-	-	14,273	23	-
2a.4.6	NRC Fees	-	-	-	-	-	-	908	91	999	999	-		-	-	-	-	-	-	-	
2a.4.7	Emergency Planning Fees	-	-	-	-	-	-	6,924	692		-	7,616	-	-	-	-	-	-	-	-	-
2a.4.8	Fixed Overhead	-	-	-	-	-	-	4,432	665	5,097	5,097	-	-	-	-	-	-	-	-	-	-
2a.4.9	Spent Fuel Pool O&M	-	-	-	-	-	-	1,573	236	1,809	-	1,809	-	-	-	-	-	-	-	-	-
2a.4.10	ISFSI Operating Costs	-	-	-	-	-	-	209	31		-	240	-	-	-	-	-	-	-	-	-
2a.4.11 2a.4.12	Railroad Track Maintenance Security Staff Cost	-	-	-	-	-	-	462 29,334	69 4,400		531 24,289	9,446	-	-	-	-	-	-	-	-	431,215
2a.4.12 2a.4.13	Utility Staff Cost	-	-	-	-	-	-	3,645	4,400 547	4,192	3,517	675	-	-	-	-	-	-	-	-	58,126
2a.4.16	Subtotal Period 2a Period-Dependent Costs	-	801	14	1	3 -	59		8,659	73,527	53,741	19,786	-	-	714	-	-	-	14,273	23	489,341
2a.0	TOTAL PERIOD 2a COST	-	801	14	1	-	59	162,235	22,750	185,865	85,251	100,614	-	-	714	-	-	-	14,273	23	489,341
PERIOD	O 2b - SAFSTOR Dormancy with Dry Spent Fuel Storage																				
Period 2b	b Direct Decommissioning Activities																				
2b.1.1	Quarterly Inspection									a											
2b.1.2	Semi-annual environmental survey									a											
2b.1.3	Prepare reports							50:	100	a	010										
2b.1.4 2b.1.5	Bituminous roof replacement	-	-	-	-	-	-	704 6,792	106 1,698	810 8,490	810 8,490	-	-	-	-	-	-	-	-	-	-
2b.1.5 2b.1	Maintenance supplies Subtotal Period 2b Activity Costs	-	-	-	-	-		7,496	1,804	9,300	9,300	-	-	-	-	-	-	-	-	-	-
								.,	2,001	-,00	-,500										
Period 2b 2b.3.1	b Collateral Costs Spent Fuel Capital and Transfer	_						122,995	18,449	141,444		141,444	_					_			
2b.3.1 2b.3.2	Prairie Island Indian Community Payments	-	-	-	-	-	-	60,797	10,445	60,797	-	60,797	-		-	-	-	-	-	-	-
2b.3	Subtotal Period 2b Collateral Costs	-	-	-	-	-	-	183,792	18,449		-	202,241	-	-	-	-	-	-	-	-	-

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Table J-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Volumes		Burial /		Utility and
Activity		Decon			Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC		Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Poriod 91	o Period-Dependent Costs																				
2b.4.1	Insurance	_	_	_	-	_	_	23,569	2,357	25,926	25,926	_	-	-	_	_	-	_	_	-	_
2b.4.2	Property taxes	-	-	-	-	-	-	176,207	17,621	193,828	193,828	-	-	-	-	-	-	_	-	-	-
2b.4.3	Health physics supplies	-	5,528	-	-	-	-	-	1,382	6,910	6,910	-	-	-	-	-	-	-	-	-	-
2b.4.4	Disposal of DAW generated	-	-	100	40	-	414	-	120	674	674	-	-	-	5,027	-	-	-	100,550	164	-
2b.4.5	Plant energy budget	-	-	-	-	-	-	7,891	1,184	9,075	9,075	-	-	-	-	-	-	-	-	-	-
2b.4.6	NRC Fees	-	-	-	-	-	-	11,071	1,107	12,178	12,178	-	-	-	-	-	-	-	-	-	-
2b.4.7	Emergency Planning Fees Fixed Overhead	-	-	-	=	-	-	3,608 7,930	361 1,190	3,969 9,120	9,120	3,969	-	=	-	-	-	-	-	-	-
2b.4.8 2b.4.9	ISFSI Operating Costs	-	-	-	-	-	-	2,724	1,190	3,132	9,120	3,132	-	-	-	-	-	-	-	-	-
2b.4.3 2b.4.10	Railroad Track Maintenance	-	-	-		-	-	3,043	456	3,499	3,499	5,152	-	-	-	-	-		-		-
2b.4.11	Security Staff Cost	_	-	_	-	_	-	135,841	20,376	156,217	34,368	121,849	-	-	-	-	-	_	_	-	1,822,251
2b.4.12	Utility Staff Cost	_	-	_	_	_	-	66,470	9,970	76,440	48,005	28,436	-	-	-	-	-	_	-	_	1,012,362
2b.4	Subtotal Period 2b Period-Dependent Costs	-	5,528	100	40	-	414		56,532	500,968	343,582	157,386	-	-	5,027	-	-	-	100,550	164	
2b.0	TOTAL PERIOD 2b COST	-	5,528	100	40	-	414	629,642	76,785	712,510	352,882	359,628	-	-	5,027	-	-	-	100,550	164	2,834,613
PERIOI	2 TOTALS	-	6,329	114	46	-	473	791,877	99,535	898,374	438,133	460,241	-	-	5,741	-	-	-	114,823	187	3,323,954
PERIO	0 3a - Reactivate Site Following SAFSTOR Dormancy																				
Period 3s	a Direct Decommissioning Activities																				
3a.1.1	Prepare preliminary decommissioning cost	-	-	_	_	_	-	167	25	192	192	-	_	-	-	_	_	_	-	-	1,300
3a.1.2	Review plant dwgs & specs.	_	-	_	_	_	-	591	89	680	680	_	-	-	-	-	-	_	-	_	4,600
3a.1.3	Perform detailed rad survey									a											,
3a.1.4	End product description	-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	1,000
3a.1.5	Detailed by-product inventory	-	-	-	-	-	-	167	25	192	192	-	-	-	-	-	-	-	-	-	1,300
3a.1.6	Define major work sequence	-	-	-	-	-	-	964	145	1,108	1,108	-	-	-	-	-	-	-	-	-	7,500
3a.1.7	Perform SER and EA	-	-	-	-	-	-	398	60	458	458	-	-	-	-	-	-	-	-	-	3,100
3a.1.8	Perform Site-Specific Cost Study	-	-	-	-	-	-	643	96	739	739	-	-	-	-	-	-	-	-	-	5,000
Activity	Specifications																				
3a.1.9.1		_	_	_	_	_	_	947	142	1.089	980	_	109	_		_	_	_	_	_	7,370
3a.1.9.2		_	-	-	-	_	-	536	80	616	554	_	62	-	-	-	-	_	_	_	4,167
3a.1.9.3	Reactor internals	-	-	-	-	-	-	912	137	1,049	1,049	-	-	-	-	-	-	-	-	-	7,100
3a.1.9.4	Reactor vessel	-	-	-	-	-	-	835	125	961	961	-	-	-	-	-	-	-	-	-	6,500
3a.1.9.5		-	-	-	-	-	-	64	10	74	74	-	-	-	-	-	-	-	-	-	500
3a.1.9.6		-	-	-	-	-	-	401	60	461	461	-	-	-	-	-	-	-	-	-	3,120
3a.1.9.7	Reinforced concrete	-	-	-	-	-	-	206	31	236	118	-	118	-	-	-	-	-	-	-	1,600
3a.1.9.8	Main Turbine	-	-	-	-	-	-	51	8	59	-	-	59	-	-	-	-	-	-	-	400
3a.1.9.9		-	-	-	-	-	-	51	8 60	59 461	231	-	59	-	-	-	-	-	-	-	400 3,120
	Plant structures & buildings Waste management	-	-	-	-	-	-	401 591	89	680	680	-	231	-	-	-	-	-	-	-	3,120 4,600
	Facility & site closeout	_		_	_			116	17	133	67		67	_			_				900
3a.1.9	Total	_	-	_	-	_	-	5,112	767	5,879	5,175	_	704	-	-	-	-	_	_	-	39,777
								-,2		-,0	-,0										,
	& Site Preparations																				
3a.1.10	Prepare dismantling sequence	-	-	-	-	-	-	308	46	355	355	-	-	-	-	-	-	-	-	-	2,400
3a.1.11	Plant prep. & temp. svces	-	-	-	-	-	-	3,500	525	4,025	4,025	-	-	-	-	-	-	-	-	-	- 100
3a.1.12	Design water clean-up system Rigging/Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	180 2,400	27 360	207 2,760	207	-	-	-	-	-	-	-	-	-	1,400
3a.1.13 3a.1.14	Rigging/Cont. Cntrl Envlps/tooling/etc. Procure casks/liners & containers	-	-	-	-	-	-	2,400 158	360 24	182	2,760 182	-	-	-	-	-	-	-	-	-	1,230
3a.1.14	Subtotal Period 3a Activity Costs	-	-	-	-	-	-	14,717	2,208	16,925	16,221	-	704	-	-	-	-		-	-	68,607
								, 1	2,230	-5,0=0	10,221		.54								00,001
	a Additional Costs																				
3a.2.1	Site Characterization	-	-	-	-	-	-	3,520	1,056	4,576	4,576	-	-	-	-	-	-	-	-	21,020	8,332
3a.2.2	Mixed/Hazardous Waste	-	-	353		178		-	76	702	702	-	-	6,132		-	-	-	351,977	2,348	-
3a.2.3	Asbestos Abatement	-	2,526	3		-	1,369	-	996	5,044	5,044	-	-		12,843	-	-	-	166,959	20,907	- 0.000
3a.2	Subtotal Period 3a Additional Costs	-	2,526	356	244	178	1,369	3,520	2,129	10,321	10,321	-	-	6,132	12,843	-	-	-	518,936	44,275	8,332
Period 3s	a Collateral Costs																				
3a.3.1	Small tool allowance	_	34	-	-	_	-	-	5	39	39	_	_	-	-	-	-	_	-	_	-
3a.3.2	Spent Fuel Capital and Transfer	_	-	-	-	-	-	24,367	3,655	28,022	-	28,022	-	-	-	-	-	-	-	-	-
3a.3.3	Prairie Island Indian Community Payments	-	-	-	-	-	-	1,249	-	1,249	-	1,249	-	-	-	-	-	-	-	-	-
3a.3	Subtotal Period 3a Collateral Costs	-	34	-	-	-	-	25,616	3,660	29,310	39	29,271	-	-	-	-	-	-	-	-	-

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Table J-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(11	10 ubullub	oi 2020 Dolla	10)											
Ι.						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
	a Period-Dependent Costs																				
3a.4.1	Insurance	-	-	-	-	-	-	484 3,618	48 362	533 3,980	307 2,551	225	-	-	-	-	-	-	-	-	-
3a.4.2 3a.4.3	Property taxes Health physics supplies	-	670	-	-	-	-	3,618	362 167	3,980 837	2,551	1,429	-	-	-	-	-	-	-	-	-
3a.4.4	Heavy equipment rental	-	753	-	-	-	-	-	113	866	866	-	-	-	-	-	-	-	-	-	-
3a.4.5	Disposal of DAW generated	-	-	10	4	-	42	-	12		69	-	-	-	516	-	-	-	10,311	17	-
3a.4.6 3a.4.7	Plant energy budget NRC ISFSI Fees	-	-	-	-	-	-	1,621 42	243 4	1,864 46	1,864	46	-	-	-	-	-	-	-	-	-
3a.4.7 3a.4.8	NRC ISFSI Fees NRC Fees	-		-	-	-	-	42 335	33	368	368	46	-	-	-	-	-	-	-	-	-
3a.4.9	Emergency Planning Fees	-	-	_	-	-	-	74	7	82	-	82	-	-	-	-	-	-	-	_	-
3a.4.10	Fixed Overhead	-	-	-	-	-	-	1,440	216	1,656	1,656	-	-	-	-	-	-	-	-	-	-
3a.4.11	ISFSI Operating Costs	-	-	-	-	-	-	56 63	8	64	-	64	-	-	-	-	-	-	-	-	-
3a.4.12 3a.4.13	Railroad Track Maintenance Security Staff Cost	-	-	-	-	-	-	4,632	695	72 5,327	72 5,044	282	-	-	-		-	-	-	-	69,160
3a.4.14	Utility Staff Cost	-	_	_	-	_	_	16,599	2,490	19,089	18,421	668	-	_	_	-	-	-	_	_	260,000
3a.4	Subtotal Period 3a Period-Dependent Costs	-	1,423	10	4	-	42		4,410	34,853	32,057	2,796	-	=	516	-	-	-	10,311	17	329,160
3a.0	TOTAL PERIOD 3a COST	-	3,983	366	248	178	1,412	72,817	12,406	91,409	58,638	32,067	704	6,132	13,359	-	-	-	529,247	44,292	406,099
PERIO	O 3b - Decommissioning Preparations																				
Period 3	b Direct Decommissioning Activities																				
Detailed	Work Procedures									=											. = -
	Plant systems	-	-	-	-	-	-	608 321	91 48	700 369	630 369	-	70	-	-	-	-	-	-	-	4,733 2,500
	Reactor internals Remaining buildings	-	-	-	-	-	-	321 174	48 26	200	50 50	-	150	-	_	-	_	-	-	-	2,500 1,350
	CRD cooling assembly	-	-	-	-	-	-	129	19		148	-	-	-	-	-	-	-	-	-	1,000
3b.1.1.5	CRD housings & ICI tubes	-	-	-	-	-	-	129	19	148	148	-	-	-	-	-	-	-	-	-	1,000
3b.1.1.6		-	-	-	-	-	-	129	19		148	-	-	-	-	-	-	-	-	-	1,000
3b.1.1.7		-	-	-	-	-	-	467 154	70 23	537 177	537 89	-	- 89	-	-	-	-	-	-	-	3,630 1,200
	Facility closeout Missile shields	-	-	-	-	-	-	154 58	9		89 67	-	89	-	-		-	-	-	-	1,200 450
	) Biological shield	-	_	_	-	-	-	154	23	177	177	-	-	-	_		-	-	-	-	1,200
	Steam generators	-	-	-	-	-	-	591	89	680	680	-	-	-	-	-	-	-	-	-	4,600
	2 Reinforced concrete	-	-	-	-	-	-	129	19		74	-	74	-	-	-	-	-	-	-	1,000
	Main Turbine	-	-	-	-	-	-	200 200	30 30	231 231	-	-	231 231	-	-	-	-	-	-	-	1,560 1,560
	Main Condensers Auxiliary building	-	-	-	-	-	-	351	53	403	363	-	40	-	-	-	-	-	-	-	2,730
	Reactor building	-	-	_	-	-	-	351	53	403	363	-	40	-	-	-	-	-	-	-	2,730
3b.1.1	Total	-	-	-	-	-	-	4,144	622	4,765	3,841	-	924	-	-	-	-	-	-	-	32,243
3b.1	Subtotal Period 3b Activity Costs	-	-	-	-	-	-	4,144	622	4,765	3,841	-	924	=	-	-	-	-	-	-	32,243
Period 3 3b.3.1	b Collateral Costs Decon equipment	1,055		_	_	_	_		158	1,213	1,213	_	_	_			_		_	_	_
3b.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-
3b.3.3	Pipe cutting equipment	-	1,200	-	-	-	-	-	180	1,380	1,380	-	-	-	-	-	-	-	-	-	-
3b.3.4	Spent Fuel Capital and Transfer	-	-	-	-	-	-	26,241	3,936	30,177	-	30,177	-	-	-	-	-	-	-	-	-
3b.3.5 3b.3	Prairie Island Indian Community Payments Subtotal Period 3b Collateral Costs	1,055	1,200	-	-	-	-	623 28,128	4,464	623 34,846	4,047	623 30,800	-	-	-	-	-	-	-	-	-
	b Period-Dependent Costs																				
3b.4.1	Decon supplies	38	-	-	-	-	-	-	9	47	47	-	-	-	-	-	-	-	-	-	-
3b.4.2	Insurance	÷	-	-	=	-	-	241	24	266	266	-	-	-	-	-	-	-	-	-	-
3b.4.3 3b.4.4	Property taxes Health physics supplies	-	295	-	-	-	-	1,802	180 74	1,982 369	1,270 369	711	-	-	-	-	-	-	-	-	-
3b.4.4	Heavy equipment rental	-	375		-	-	-	-	56	432	432	-	-		-		-	-	-	-	-
3b.4.6	Disposal of DAW generated	-	-	6	2	-	24	-	7	39	39	-	-	-	291	-	-	-	5,814	9	-
3b.4.7	Plant energy budget	-	-	-	-	-	-	808	121	930	930	-	-	-	-	-	-	-	-	-	-
3b.4.8	NRC ISFSI Fees	=	-	-	-	-	-	21	2	23	-	23	-	-	-	-	-	-	-	-	-
3b.4.9 3b.4.10	NRC Fees Emergency Planning Fees	<u> </u>	-	-	-	-	-	167 37	17 4	183 41	183	41	-	-	-	-	-	-	-	-	-
3b.4.10 3b.4.11	Fixed Overhead	-	-	-	-	-	-	718	108	826	826	41	-	-	-	-	-	-	-	-	-
3b.4.12	ISFSI Operating Costs	-	-	_	-	-	-	28	4	32	-	32	-	-	-	-	-	-	-	-	-
3b.4.13	Railroad Track Maintenance	=	-	-	-	-	-	31	5		36	-	-	-	-	-	-	-	-	-	-
3b.4.14	Security Staff Cost	=	-	-	-	-	-	2,310	346		2,515	141	-	-	-	-	-	-	-	-	34,485
3b.4.15 3b.4.16	DOC Staff Cost Utility Staff Cost	<u> </u>	-	-	-	-	-	5,344 8,277	802 1,242	6,146 9,518	6,146 9,185	333	-	-	-	-	-	-	-	-	58,080 129,644
ou.4.10	Comey Stan Cost	-	-	-	-	-	-	0,411	1,242	9,918	9,100	<b>ə</b> əə	-	-	-	-	-	-	-	-	129,044

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Table J-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

						(TI	iousands	of 2020 Dollar	rs)											
					Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity Index Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet		GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
3b.4 Subtotal Period 3b Period-Dependent Costs	38	671	6	3 2	_	24	19,784	3,001	23,525	22,244	1,281	_	_	291	_	_	_	5,814	9	222,210
3b.0 TOTAL PERIOD 3b COST	1,092		6	. 2	_	24	52,055	8,086	63,137	30,132		924	_	291	_	_	_	5,814		254,453
PERIOD 3 TOTALS	1,092		372	_		1,436	,	20,492	154,546	88,770	64,148	1,628	6,132		_		_	535,061		660,551
PERIOD 4a - Large Component Removal	1,002	0,000	012	201	110	1,400	124,012	20,102	104,040	00,770	04,140	1,020	0,102	10,040				000,001	11,001	000,001
Period 4a Direct Decommissioning Activities																				
_																				
Nuclear Steam Supply System Removal 4a.1.1.1 Reactor Coolant Piping	11	42	10	) 11	66	94	_	52	285	285	_	_	240	254	_	_	_	33,680	778	_
4a.1.1.2 Pressurizer Relief Tank	5						-	31	174		-	-	160			-	-	22,441		-
4a.1.1.3 Reactor Coolant Pumps & Motors	13	60	46	85	-	463	-	155	822	822	-	-	-	2,332	-	-	-	295,800	1,226	80
4a.1.1.4 Pressurizer	-	77				776		265	1,591	1,591	-	-	-	2,196		-	-	158,199		750
4a.1.1.5 Steam Generators	-	3,307				3,885		2,590	15,625	15,625	-	-	18,672			-	-	1,581,180		2,250
4a.1.1.6 CRDMs/ICIs/Service Structure Removal	63					454		283	1,623	1,623	-	-	2,138			-	-	165,025		-
4a.1.1.7 Reactor Vessel Internals	53		13,334			8,610		11,401	39,153	39,153	-	-	-	1,174		742		167,605		1,053
4a.1.1.8 Reactor Vessel	-	5,835	1,653			3,268	278		18,053	18,053	-	-	- 01 010	9,245			-	579,324		1,053
4a.1.1 Totals	146	14,237	17,327	3,250	2,845	17,613	556	21,352	77,327	77,327	-	-	21,210	28,505	-	742	-	3,003,254	63,151	5,187
Removal of Major Equipment																				
4a.1.2 Main Turbine/Generator	-	292				-	-	173	1,170	1,170	-	-	2,243		-	-	-	134,601		-
4a.1.3 Main Condensers	-	2,510	79	33	742	-	-	752	4,115	4,115	-	-	4,000	-	-	-	-	180,000	34,978	-
Cascading Costs from Clean Building Demolition																				
4a.1.4.1 Reactor	-	794	-	-	-	-	-	119	913	913	-	-	-	-	-	-	-	-	7,589	-
4a.1.4 Totals	-	794	-	-	-	-	-	119	913	913	-	-	-	-	-	-	-	-	7,589	-
Disposal of Plant Systems																				
4a.1.5.1 Air Removal	-	31	-	-	-	-	-	5	36	-	-	36	-	-	-	-	-	-	452	-
4a.1.5.2 Auxiliary Feedwater	-	46	-	-	-	-	-	7	53	-	-	53	-	-	-	-	-	-	670	-
4a.1.5.3 Auxiliary Feedwater - RCA	-	47		) 2	36	-	-	17	102		-	-	215	-	-	-	-	8,722		-
4a.1.5.4 Bleed Steam	-	90		-	-	-	-	14	104		-	104	-	-	-	-	-	-	1,335	-
4a.1.5.5 Caustic Addition - RCA	-	38		) 2	39	-	-	16	95	95	-	-	233	-	-	-	-	9,453		-
4a.1.5.6 Chemical Feed	-	20			-	-	-	3	23	-	-	23	-	-	-	-	-	-	304	-
4a.1.5.7 Chemical Feed - RCA	-	1 42	0	0	1	-	-	0	3 49	3	-	-	6	-	-	-	-	243		-
4a.1.5.8 Circulating Water 4a.1.5.9 Condensate	-	42 474		-	-	-	-	71	49 545	-	-	49 545	-	-	-	-	-	-	619 6,837	-
4a.1.5.10 Condensate Polishing	-	235		-	-		-	35	271	-	-	271	-	-	_	-	-	-	3,420	-
4a.1.5.11 Condensate Polishing - RCA		183		15	348	-	-	101	651	651	-		2,078	-	_	-	-	84,395		-
4a.1.5.12 Electro-hydraulic	-	9		-	-	_	-	1	10	-	_	10		-	_	-	_		127	-
4a.1.5.13 Feedwater	-	153	-	-	-	-	-	23	175	-	-	175	-	-	_	-	-	-	2,215	-
4a.1.5.14 Feedwater - RCA	-	195	7	24	537	-	-	133	895	895	-	-	3,208	-	-	-	-	130,294	2,651	-
4a.1.5.15 Gland Seal	-	34		-	-	-	-	5	39	-	-	39	-	-	-	-	-	-	505	-
4a.1.5.16 Heater Drain	-	400		-	-	-	-	60	460	-	-	460	-	-	-	-	-	-	5,881	-
4a.1.5.17 Internal Circ Water & CDSR	-	27		-	-	-	-	4	31	-	-	31	-	-	-	-	-	-	389	-
4a.1.5.18 Main Gen/Exciter/Transformer 4a.1.5.19 Main Steam	-	0 115		-	-	-	-	0 17	0 133	-	-	0 133	-	-	-	-	-	-	5 1,690	-
4a.1.5.19 Main Steam 4a.1.5.20 Main Steam - RCA	•	366		37	844	-	-	225	1,482	1,482	-	-	5,044	-	-	-	-	204,825		-
4a.1.5.21 Steam Generator Blowdown	_	434				234	_	224	1,282	1,282	_	_	2.031		_	_	_	126,640		_
4a.1.5.22 Steam Generators	-	5			-	-	-	1	6		_	6		-	_	-	_	-	75	-
4a.1.5.23 Turbine & Moisture Separators	-	386	-	-	-	-	-	58	444	-	-	444	-	-	_	-	-	-	5,609	-
4a.1.5.24 Turbine Oil Purification	-	70		-	-	-	-	11	81	-	-	81	-	-	-	-	-	-	1,003	-
4a.1.5 Totals	-	3,401	44	108	2,144	234	-	1,037	6,967	4,510	-	2,458	12,815	686	-	-	-	564,572	48,101	-
4a.1.6 Scaffolding in support of decommissioning	-	909	3	3 1	26	4	-	233	1,176	1,176	-	-	138	12	-	-	-	6,985	6,020	-
4a.1 Subtotal Period 4a Activity Costs	146	22,144	17,570	3,426	6,311	17,850	556	23,666	91,669	89,211	-	2,458	40,406	29,203	-	742	-	3,889,412	163,954	5,187
Period 4a Additional Costs																				
4a.2.1 Retired RPV upper internals package	-	128				1,583	-	944	2,879	2,879	-	-	-	572			-	49,800		67
4a.2 Subtotal Period 4a Additional Costs	-	128	166	58	-	1,583	-	944	2,879	2,879	-	-	-	572	125	-	-	49,800	1,667	67

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Table J-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							`		or 2020 Dona												
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity		Decon		Packaging		Processing		Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Period 4a	Collateral Costs																				
4a.3.1	Process decommissioning water waste	2	-	4	8	-	17	-	7	38	38	-	-	-	39	-	-	-	2,337	8	-
4a.3.3	Small tool allowance Spent Fuel Capital and Transfer	-	213	-	-	-	-	2,163	32 324	245 2,487	220	2,487	24	-	-	-	-	-	-	-	-
4a.3.4 4a.3.5	Prairie Island Indian Community Payments	-	-	-	-	-	-	1,660	524	1,660	-	1,660	-	-	-	-	-	-	-	-	-
4a.3	Subtotal Period 4a Collateral Costs	2	213	4	8	-	17	3,823	363	4,430	258	4,147	24	-	39	-	-	-	2,337	8	-
Dania d 4a	Period-Dependent Costs																				
4a.4.1	Decon supplies	100	_	-	_	-	_	_	25	125	125	-	_	-	_	_	-	_	_	_	-
4a.4.2	Insurance	-	-	-	-	-	-	643	64	708	708	-	-	-	-	-	-	-	-	-	-
4a.4.3	Property taxes	-		-	-	-	-	4,441	444	4,886	2,985	1,901	-	-	-	-	-	-	-	-	-
4a.4.4 4a.4.5	Health physics supplies Heavy equipment rental	-	1,744 $3,325$	-	-	-	-	•	436 499	2,181 3,824	2,181 3,824	-	-	-	-	-	-	-	-	-	-
4a.4.6	Disposal of DAW generated	-	5,525	59	24	-	245	-	71	398	398	-	-	-	2,972	-	-	-	59,446	97	-
4a.4.7	Plant energy budget	-	-	-	-	-	-	2,047	307	2,354	2,354	-	-	-	· -	-	-	-	-	-	-
4a.4.8 4a.4.9	NRC ISFSI Fees NRC Fees	-	-	-	-	-	-	55 643	6 64	61 707	707	61	-	-	-	-	-	-	-	-	-
4a.4.9 4a.4.10	Emergency Planning Fees	-	-	-	-	-	-	99	10	107	101	108	-	-	-	-		-	-	-	-
4a.4.11	Fixed Overhead	-	-	-	-	-	-	1,581	237	1,818	1,818	-	-	-	-	-	-	-	-	-	-
4a.4.12	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	565	85	649	649	-	-	-	-	-	-	-	-	-	-
4a.4.13 4a.4.14	ISFSI Operating Costs Railroad Track Maintenance	-	-	-	-	-	-	74 83	11 12	86 96	96	86	-	-	-	-	-	-	-	-	-
4a.4.15	Remedial Actions Surveys	-	-	-	-	-	-	1,489	223	1,712	1,712	-	-	-	-	-	-	-	-	-	-
4a.4.16	Security Staff Cost	-	-	-	-	-	-	6,863	1,029	7,892	5,943	1,949	-	-	-	-	-	-	-	-	105,553
4a.4.17	DOC Staff Cost	-	-	-	-	-	-	17,190	2,579	19,769	19,769	-	-	-	-	-	-	-	-	-	189,964
4a.4.18 4a.4	Utility Staff Cost Subtotal Period 4a Period-Dependent Costs	100	5,069	59	24	-	245	21,887 57,659	3,283 9,385	25,170 72,542	24,389 67,657	780 4,885	-	-	2,972	-	-	-	59,446	97	343,058 638,574
4a.0	TOTAL PERIOD 4a COST	248	27,554	17,799	3,516			62,038	34,358	171,520	160,006	9,032	2,482	40,406		125	742		4,000,995	165,725	643,828
	4b - Site Decontamination	240	27,004	11,133	3,310	0,311	13,039	02,038	34,300	171,020	100,000	5,032	2,402	40,400	52,700	120	742	-	4,000,338	100,720	040,020
LINIOL	40 - Sive Decontainmation																				
	Direct Decommissioning Activities Remove spent fuel racks	314	35	86	41	-	703	-	356	1,535	1,535	-	-	-	2,092	-	-	-	132,919	576	-
	of Plant Systems																				
4b.1.2.1 4b.1.2.3	Aux Bldg Normal Ventilation Buildings Maintenance	-	2 5	0	0	1	-	-	1	3 5	3	-	- 5	3	-	-	-	-	140	26 65	-
4b.1.2.4	Chemical & Volume Control	-	1,263	89	90	753	973		694	3.861	3.861	-		4.498		-		-	366,565	17,235	-
4b.1.2.5	Component Cooling - RCA	-	858	25	91	2,079		-	543	3,597	3,597	-	-	12,427	-,	-	-	-	504,675	11,242	-
	Containment Cooling	-	74		-	-	-	-	11	85	-	-	85		-	-	-	-	-	1,086	-
4b.1.2.7 4b.1.2.8	Containment Cooling - RCA Containment Hydrogen Control - RCA	-	304 30	7	25 1	569 18		-	166 10	1,070 59	1,070 59	-	-	3,400 105		-	-	-	138,090 4.278	3,971 401	-
4b.1.2.9	Containment Spray - RCA	-	93	2	6			-	46	293	293	-	_	868		-	-	-	35,249	1,217	-
	Containment Ventilation	-	229	24	51	828	248	-	254	1,635	1,635	-	-	4,951	737	-	-	-	247,952	3,278	-
	Cooling Water Cooling Water - RCA	-	163 658	16	- 57	1,293	-	-	24 368	187 2,392	2,392	-	187	7,728	-	-	-	-	313,832	2,396 8,594	-
	D1 Emergency Diesel	-	50	- 10		1,250			8	2,352	2,352	-	58		-	-		-	313,632	730	-
4b.1.2.14	D2 Emergency Diesel	-	36	-	-	-	-	-	5	41	-	-	41	-	-	-	-	-	-	522	-
	Diesel Rooms Ventilation	-	9	-	-	-	-	-	1	11	-	-	11		-	-	-	-	-	135	-
	Electrical - Clean Electrical - Contaminated	-	1,905 553	- 7	20	423	32	-	286 213	2,191 1,248	1,248	-	2,191	2,527	95	-	-	-	108,690	26,981 7,488	-
	Electrical - Contaminated  Electrical - Contaminated - Fuel Pool	-	137	2	5	103			53	307	307	-	-	615		-	-	-	26,449	1,857	-
	Electrical - Decontaminated	-	3,787	48				-	1,569	9,518	9,518	-	-	23,551	-	-	-	-	956,401	49,378	-
	Electrical - Decontaminated - Fuel Pool	-	947	12				-	392	2,380	2,380	-	-	5,893		-	-	-	239,327	12,340	-
	Fuel Handling Fuel Oil	-	108 121	6	11	152	73	-	70 18	421 140	421	-	140	908	218	-	-	-	50,723	1,595 1,697	-
	HVAC - Clean	-	120	-	-	-	-	-	18	138	-	-	138	-	-	-	-	-	-	1,891	-
	HVAC - Contaminated	-	337	9	26			-	181	1,141	1,141	-	-	3,261	123	-	-	-	140,257	4,335	-
	HVAC - Contaminated - Fuel Pool Incore Instrumentation	-	145 25	4	11 2			-	78 13	489 70	489 70	-	-	1,398		-	-	-	60,110 6,058	1,858 382	-
	Misc Drains & Vents	-	25 212	15	13	65		-	110	592	592	-	-	390		-	-	-	49,062	2,764	-
4b.1.2.28	Reactor Coolant	-	283	21	18	58	265	-	150	796	796	-	-	344	777	-	-	-	64,085	3,865	-
	Reactor Hot Sampling	-	125	12	7	11	118	-	65	339	339	-	-	66		-	-	-	25,063	1,611	-
	Reactor Makeup Reactor Vessel	-	73 19	. 1	- 0	- 4	- 5	-	11 7	84 36	- 36	-	84	26	- 14	-	-	-	2,000	1,042 260	-
	Residual Heat Removal	-	378	85				-	465	2,603	2,603	-	-	2,895		-	-	-	326,425	5,374	-
	Safeguards Chilled Water	-	18	-	-	-	-,-50	-	3	20	-,	-	20		-,	-	-	-	,	259	-

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Table J-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							,		01 2020 Donai	,											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Volumes		Burial /		Utility and
Activit		Decon	Removal	Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Disposa	of Plant Systems (continued)																				
	Safeguards Chilled Water - RCA	-	85	1	4	83	-	-	34	207	207	-	-	495	-	-	-	-	20,100	1,019	-
	Safety Injection	-	809	42	73	1,136	393	-	486	2,939	2,939	-	-	6,788	1,156	-	-	-	349,908	11,276	
4b.1.2.3	S Sampling	-	54	4	3	10	37	-	25	133	133	-	-	59	107	-	-	-	9,420	731	-
	Shield Bldg Ventilation	-	125	14	26		165	-	132	821	821	-	-	2,152	491	-	-	-	118,583	1,811	-
	S Spent Fuel Pool Cooling	-	324	34	32	135	450	-	222	1,198	1,198	-	-	806	1,325	-	-	-	117,816	4,400	
	Station & Instrument Air	-	20		-		-	-	3	23		-	23		-	-	-	-		300	
	Station & Instrument Air - RCA	-	81	1	2	56	-	-	29	169	169		-	332	-	-	-	-	13,496	1,053	
4b.1.2.4		-	20		1	14	-	-	7	42	42	-	-	83	-	-	-	-	3,374	263	
	2 Turbine Bldg Traps & Drains 3 Unit Coolers	-	50 42	-	-	-	-	-	8	58 49	-	-	58 49	-	-	-	-	-	-	767 611	-
	Unit Coolers - RCA	-	55	0	2	39	-	-	20	115	115	-	45	230	-	-	-	-	9,348	683	
4b.1.2.4 4b.1.2	Totals	-	14,735	481	883		4,126	-	6,807	41,565	38,474		3,091	86,861	12,129	-	-	-	4,307,475	198,796	
40.1.2	Totals		14,755	401	000	14,000	4,120		0,007	41,505	30,474		5,051	00,001	12,123				4,507,475	150,750	
4b.1.3	Scaffolding in support of decommissioning	-	1,363	4	2	38	6	-	349	1,763	1,763	-	-	207	18	-	-	-	10,477	9,030	-
Deconts	mination of Site Buildings																				
4b.1.4.1		1,096	2,527	240	1,236	373	7,080	-	3,215	15,766	15,766	-	-	2,230	67,325	-	-	-	3,286,372	45,729	-
4b.1.4.2	Backwash Waste Receiving Tank	-	25	3			97	-	33	175	175		-	-	929		-	-	43,896	266	
4b.1.4	Totals	1,096	2,552	243	1,253	373	7,177	-	3,248	15,941	15,941	-	-	2,230	68,254	-	-	-	3,330,268	45,995	-
4b.1.5	Prepare/submit License Termination Plan	-	-	-	-	-	-	526	79	605	605	-	-	-	-	-	-	-	-	-	4,096
4b.1.6	Receive NRC approval of termination plan									a											
4b.1	Subtotal Period 4b Activity Costs	1,410	18,685	814	2,179	14,945	12,012	526	10,839	61,410	58,319	-	3,091	89,298	82,494	-	-	-	7,781,139	254,398	4,096
Period 4	b Additional Costs																				
4b.2.1	License Termination Survey Planning	_	_	_	-	_	_	1,037	311	1.348	1.348	_	-	_	_	-	-	-	-	_	6,240
4b.2.2	Excavation of Underground Services	_	1,175	_	_	_	_	225	328	1,728	1,728		-	_	-	-	_	-	-	7,411	
4b.2.3	Operational Equipment	-	-	11	36	606	_	-	97	751	751		-	5,880	_	-	-	-	147,000	16	
4b.2	Subtotal Period 4b Additional Costs	-	1,175	11	36	606	-	1,262	736	3,827	3,827	-	-	5,880	-	-	-	-	147,000	7,427	6,240
Period 4	b Collateral Costs																				
4b.3.1	Process decommissioning water waste	5	-	9	16	-	37	-	15	83	83	-	-	-	85	-	-	-	5,092	17	-
4b.3.3	Small tool allowance	-	307	-	-	-	-	-	46	353	353		-	-	-	-	-	-	-	-	-
4b.3.4	Decommissioning Equipment Disposition	-	-	130	67	1,112	178	-	234	1,722	1,722		-	6,000	529	-	-	-	303,608	147	-
4b.3.5	Prairie Island Indian Community Payments	-		-	-		-	2,225		2,225		2,225	-		-	-	-	-		-	-
4b.3	Subtotal Period 4b Collateral Costs	5	307	139	84	1,112	215	2,225	296	4,382	2,158	2,225	-	6,000	614	-	-	-	308,700	163	-
Period 4	b Period-Dependent Costs																				
4b.4.1	Decon supplies	564	_	_	_	_	_	-	141	705	705	-	-	_	_	-	-	-	-	_	_
4b.4.2	Insurance	-	-	-	-	-	-	862	86	949	949		-	-	_	-	-	-	-	_	_
4b.4.3	Property taxes	-	-	-	-	-	-	5,819	582	6,401	3,853	2,548	-	-	-	-	-	-	-	-	-
4b.4.4	Health physics supplies	-	2,435	-	-	-	-	-	609	3,043	3,043		-	-	-	-	-	-	-	-	-
4b.4.5	Heavy equipment rental	-	4,577	-	-	-	-	-	687	5,263	5,263		-	-	-	-	-	-	-	-	-
4b.4.6	Disposal of DAW generated	-	-	77	31	-	322	-	93	523	523		-	-	3,905	-	-	-	78,097	127	-
4b.4.7	Plant energy budget	-	-	-	-	-	-	2,165	325	2,490	2,490		-	-	-	-	-	-	-	-	-
4b.4.8	NRC ISFSI Fees	-	-	-	-	-	-	74	7	81	- 0.40	81	-	-	-	-	-	-	-	-	-
4b.4.9	NRC Fees	-	-	-	-	-	-	862 132	86	948	948		-	-	-	-	-	-	-	-	-
4b.4.10 4b.4.11	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	2,118	13 318	145 2,436	2,436	145	-	-	-	-	-	-	-	-	-
4b.4.11 4b.4.12	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	2,118 757	113	2,436 870	2,436 870		-	-	-	-	-	-	-	-	-
4b.4.12	ISFSI Operating Costs	-	-	-	-	-	-	100	15	115	-	115	-	-		-	-	-	-	-	-
4b.4.14	Railroad Track Maintenance	-	-	_	-	-	_	111	17	128	128		-	_	-	-	-	_	_	_	-
4b.4.15	Remedial Actions Surveys	-	-	-	-	-	-	1,995	299	2,294	2,294		-	-	-	-	-	-	-	-	-
4b.4.16	Security Staff Cost	-	-	-	-	-	-	1,202	180	1,383	462		-	-	-	-	-	-	-	_	20,373
4b.4.17	DOC Staff Cost	-	-	-	-	-	-	15,039	2,256	17,294	17,294	-	-	-	-	-	-	-	-	-	174,093
4b.4.18	Utility Staff Cost	-	-	-	-	-	-	18,793	2,819	21,612	20,790		-	-	-	-	-	-	-	-	311,145
4b.4	Subtotal Period 4b Period-Dependent Costs	564	7,011	77	31	-	322	50,029	8,646	66,682	62,051	4,631	-	-	3,905	-	-	-	78,097	127	505,611
4b.0	TOTAL PERIOD 4b COST	1,979	27,178	1,042	2,330	16,663	12,549	54,043	20,517	136,300	126,354	6,856	3,091	101,178	87,013	-	-	-	8,314,936	262,116	515,947

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Table J-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(11	lousanus	of 2020 Dollar	15)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity		Decon	Removal			Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
PERIOD	4e - Delay before License Termination																				
Period 4e	Direct Decommissioning Activities																				
Period 4e	Collateral Costs																				
	Prairie Island Indian Community Payments	-	-	-	-	-	-	986	-	986	-	986	-	-	-	-	-	-	-	-	-
4e.3	Subtotal Period 4e Collateral Costs	-	-	-	-	-	-	986	-	986	-	986	-	-	-	-	-	-	-	-	-
Period 4e	Period-Dependent Costs																				
	Insurance	=	-	-	-	-	-	382	38	420	-	420	-	-	-	-	-	-	-	-	-
	Property taxes	-		-	-	-	-	2,498	250	2,748	1,624	1,124	-	-	-	-	-	-	-	-	-
	Health physics supplies	-	87			-	-	-	22	109	109		-	-	-	-	-	-	-	-	-
	Disposal of DAW generated NRC ISFSI Fees	-	-	2	1	-	6	33	2 3	11 36	11	36	-	-	79	-	-	-	1,573	3	-
	NRC Fees	-	-	-	-	-	_	162	16	178	178		-	_	-	-	_	_	-	-	-
4e.4.8	Emergency Planning Fees	-	-	-	-	-	-	58	6	64	-	64	-	-	-	-	-	-	-	-	-
4e.4.9	Fixed Overhead	-	-	-	-	-	-	939	141	1,079	1,079	-	-	-	-	-	-	-	-	-	-
	ISFSI Operating Costs	-	-	-	-	-	-	44	7	51	-	51	-	-	-	-	-	-	-	-	-
	Railroad Track Maintenance	-	-	-	-	-	-	49	7	57	57		-	-	-	-	-	-	-	-	-
	Utility Staff Cost	-	- 07	-	-	-	- 6	696	104	801 5,554	742		-	-	-	-	-	-	1 550	- 3	11,488
4e.4	Subtotal Period 4e Period-Dependent Costs	-	87	2	. 1	-	б	4,862	596	0,004	3,800	1,754	-	-	19	-	-	-	1,573	э	11,488
4e.0	TOTAL PERIOD 4e COST	-	87	2	2 1	-	6	5,847	596	6,540	3,800	2,740	-	-	79	-	-	-	1,573	3	11,488
PERIOD	4f - License Termination																				
	Direct Decommissioning Activities																				
	ORISE confirmatory survey	-	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-
	Terminate license Subtotal Period 4f Activity Costs	-	-	-	-	-	-	166	50	a 216	216	-	-	-	-	-	-	-	-	-	-
Period 4f	Additional Costs																				
	License Termination Survey	-	-	-	-	-	-	3.199	960	4,159	4.159	_	-	-	-	-	-	-	-	40,531	3,120
	Subtotal Period 4f Additional Costs	-	-	-	-	-	-	3,199	960	4,159	4,159	-	-	-	-	-	-	-	-	40,531	3,120
Period 4f (	Collateral Costs																				
	DOC staff relocation expenses	<u> </u>	-	-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-
	Prairie Island Indian Community Payments	-	-	-	-	-	-	934	-	934	-	934	-	-	-	-	-	-	-	-	-
4f.3	Subtotal Period 4f Collateral Costs	-	-	-	-	-	-	2,198	190	2,388	1,454	934	-	-	-	-	-	-	-	-	-
Period 4f I	Period-Dependent Costs																				
	Insurance	-	-	-	-	-	-	362	36	398	-	398	-	-	-	-	-	-	-	-	-
	Property taxes	-	-	-	-	-	-	2,306	231	2,537	1,469	1,068	-	-	-	-	-	-	-	-	-
	Health physics supplies	-	501		-	-	-	-	125	626	626	-	-	-	-	-	-	-		-	-
	Disposal of DAW generated Plant energy budget	<u>-</u>	-	7	3	-	28	243	8 36	45 279	45 279		-	-	334	-	-	-	6,685	11	-
	NRC ISFSI Fees	-	-	-	-	-	-	31	3	34	-	34	-	-	-	-	-	-	-	-	-
	NRC Fees	-	-	-	-	-	_	422	42	465	465		-	_	-	-	_	_	-	-	-
4f.4.8	Emergency Planning Fees	-	-	-	-	-	_	55	6	61	-	61	-	-	-	-	-	-	-	-	-
	Fixed Overhead	-	-	-	-	-	-	890	133	1,023	1,023		-	-	-	-	-	-	-	-	-
	ISFSI Operating Costs	-	-	-	-	-	-	42	6	48		48	-	-	-	-	-	-	-	-	-
	Railroad Track Maintenance	-	-	-	-	-	-	47	7	54	54		-	-	-	-	-	-	-	-	- 05.614
	Security Staff Cost DOC Staff Cost	-	-	-	-	-	-	1,835 4,238	275 636	2,111 4,874	927 4,874	1,184	-	-	-	-	-	-	-	-	27,614 46,283
	Utility Staff Cost	-	-	-	-	-	-	4,238	602	4,874	4,874		-	-	-	-		-	-	-	46,283 59,507
	Subtotal Period 4f Period-Dependent Costs	-	501	. 7	3	-	28	14,483	2,147	17,167	13,936		-	-	334	-	-	-	6,685	11	
4f.0	TOTAL PERIOD 4f COST	-	501	. 7	3	-	28	20,046	3,346	23,930	19,764	4,166	-	-	334	-	-	-	6,685	40,542	136,524

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Table J-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(T)	housands	of 2020 Dollar	rs)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial/		Utility and
Activity		Decon			Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
PERIOD 5	5b - Site Restoration																				
Period 5b D	Direct Decommissioning Activities																				
Demolition 5b.1.1.1 I	of Remaining Site Buildings		4,644						697	5,341			5,341							44,669	
	Condensate Storage Tank Foundation	-	3		-	-	_	-	0.57		-	-	3,341	-		-	-		-	16	-
	Structures below 3' below grade	-	1,785		-	-	-	-	268	2,052	-	-	2,052	-	-	-	-	-	-	9,238	-
	Turbine	-	2,139 365		-	-	-	-	321 55	2,460 420	-	-	2,460 420	-	-	-	-	-	-	21,985 1,857	-
	Turbine Pedestal Totals	-	8,936		-	-	-	-	1,340	10,276	-	-	10,276	-	-	-	-	-	-	77,765	-
	out Activities																				
	Grade & landscape site Final report to NRC	-	448		-	-	-	200	67 30	515 231	231	-	515	-	-	-	-	-	-	921	1,560
	Subtotal Period 5b Activity Costs	-	9,384	-	-	<del>-</del>	-	200			231		10,792	<del>-</del> -	-	-	-	-	-	78,686	1,560 1,560
	Additional Costs																				
	Clean Concrete Disposal Intake Structure Cofferdam	-	2,242 623		-	-		5	337 93	2,583 716	-	-	2,583 716	-	-	-	-	-	-	8,386 5,168	-
	Construction Debris	-	623	-	-	-	-	10			-	-	116	-		-	-	-	-	5,168	-
	Backfill	-	3,011	-	-	-	-	-	452	3,462	-	-	3,462	-	-	-	-	-	-	2,904	-
	Disposition of Original Casks	-	24				2,390		728	3,640	3,640			-	8,929		-	-	1,059,612	146	-
	Subtotal Period 5b Additional Costs	-	5,899	80	) 418	-	2,390	15	1,611	10,413	3,640	-	6,773	-	8,929	-	-	-	1,059,612	16,604	-
	Collateral Costs Small tool allowance		100						18	140			140								
	Spent Fuel Capital and Transfer	-	122	-	-	-	-	3,821	573	4,394	-	4,394		-	-	-	-	-	-	-	-
5b.3.3	Prairie Island Indian Community Payments	-	-	-	-	-	-	2,649	-	2,649	-	2,649		-	-	-	-	-	-	-	-
5b.3	Subtotal Period 5b Collateral Costs	-	122	-	-	-	-	6,470	591	7,183	-	7,043	140	-	-	-	-	-	-	-	-
	Period-Dependent Costs Insurance	_	_	_		_		513	51	565	_	565	-	_		_	_				_
	Property taxes	-	-	-	-	-	-	5,904	590	6,494	-	2,663		-	-	-	-	-	-	-	-
	Heavy equipment rental	-	7,144	-	-	-	-	-	1,072	8,215	-	-	8,215	-	-	-	-	-	-	-	-
	Plant energy budget NRC ISFSI Fees	-	-	-	-	-	-	344 243	52 24	395 268		395 268	-	-	-	-	-	-	-	-	-
	Emergency Planning Fees	-	-	-	-	-	-	157	16	173	-	173		-	-	-	-	-	-	-	-
5b.4.7	Fixed Overhead	-	-	-	-	-	-	1,024	154	1,178	-	781	397	-	-	-	-	-	-	-	-
	ISFSI Operating Costs	-	-	-	-	-	-	119	18		-	136		-	-	-	-	-	-	-	-
	Railroad Track Maintenance Security Staff Cost	-	-	-	-	-	-	133 4,976	20 746	152 5,722	(0)			-	-	-	-	-	-	-	74,431
	DOC Staff Cost	-	-	-	-	-	-	10,921	1,638	12,559	-	5,510	12,559	-		-	-		-	-	116,885
5b.4.12 U	Utility Staff Cost	-	-	-	-	-	-	5,170	776	5,946	-	1,278	4,668	-	-	-	-	-	-	-	76,637
5b.4	Subtotal Period 5b Period-Dependent Costs	-	7,144	-	-	-	-	29,504	5,156	41,804	0	11,666	30,139	-	-	-	-	-	-	-	267,952
5b.0	TOTAL PERIOD 5b COST	-	22,548	80	) 418	-	2,390	36,189	8,797	70,422	3,871	18,708	47,843	-	8,929	-	-	-	1,059,612	95,290	269,512
PERIOD 5	5c - Fuel Storage Operations/Shipping																				
Period 5c D	Direct Decommissioning Activities																				
	Collateral Costs							445 040	00.050	F10 F10		F10 F10									
	Spent Fuel Capital and Transfer Prairie Island Indian Community Payments	-	-	-	-	-	-	445,840 152,793	66,876	512,716 152,793	-	512,716 152,793	-	-	-	-	-	-	-	-	-
	Subtotal Period 5c Collateral Costs	-	-	-	-	-	-	598,632	66,876		-	665,508		-	-	-	-	-	-	-	-
	Period-Dependent Costs							00.010	0.000	00 *50		00 ==0									
	Insurance Property taxes	-	-	-	-	-	-	29,616 169,412	2,962 16,941	32,578 186,354	-	32,578 186,354	-	-	-	-	-	-	-	-	-
	Plant energy budget	-	-	-	-	-	-	105,412	10,541	100,554	-	100,354	-	-	-	-	-	-	-	-	-
5c.4.4	NRC ISFSI Fees	-	-	-	-	-	-	14,030	1,403		-	15,432	-	-	-	-	-	-	-	-	-
	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	9,068 19,930	907 2,990	9,974 22,920	-	9,974 22,920	-	-	-	-	-	-	-	-	-
	ISFSI Operating Costs	-	-	-	-	-	-	6,845	2,990 1,027	7,872	-	7,872	-	-	-	-	-	-	-	-	-
								0,020	1,021	.,0.2		.,512									

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Table J-1
Prairie Island SAFSTOR Unit 1
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(Tl	ousands	of 2020 Dollaı	rs)											
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 5c 5c.4.8 5c.4.9 5c.4.10 5c.4.11 5c.4	Period-Dependent Costs (continued) Railroad Track Maintenance Security Staff Cost DOC Staff Cost Utility Staff Cost Subtotal Period 5c Period-Dependent Costs	- - - -	: : :	- - - -			- - - -	7,647 236,347 18,749 115,440 627,085	1,147 35,452 2,812 17,316 82,956	8,795 271,799 21,561 132,756 710,041	- - - -	8,795 271,799 21,561 132,756 710,041	- - - - -	- - - -			- - - -	- - - -	- - - -	- - - -	3,434,684 127,211 1,685,540 5,247,434
5c.0	TOTAL PERIOD 5c COST	-	-	-	-	-	-	1,225,717	149,832	1,375,549	-	1,375,549	-	-	-	-	-	-	-	-	5,247,434
PERIOD	5d - GTCC shipping																				
Period 5d	Direct Decommissioning Activities																				
	Steam Supply System Removal Vessel & Internals GTCC Disposal Totals Subtotal Period 5d Activity Costs		- - -	1,444 1,444 1,444		- - -	8,680 8,680 8,680	- - -	1,663 1,663 1,663	11,787 11,787 11,787	11,787 11,787 11,787	- - -	· ·	- - -	- - -	- - -	- - -	1,773 1,773 1,773	344,823	- - -	- - -
Period 5d 5d.3.1 5d.3.2 5d.3	Collateral Costs Spent Fuel Capital and Transfer Prairie Island Indian Community Payments Subtotal Period 5d Collateral Costs	- - -		- - -	- - -	- - -	- -	28 48 76	4 - 4	32 48 80	- - -	32 48 80	- -	- - -	- -	- -	- - -	- - -	- - -	- - -	- - -
Period 5d 5d.4.1 5d.4.2 5d.4.4 5d.4.5 5d.4.6 5d.4.7 5d.4.8 5d.4.9 5d.4	Period-Dependent Costs Insurance Property taxes NRC ISFSI Fees Emergency Planning Fees Fixed Overhead Railroad Track Maintenance Security Staff Cost Utility Staff Cost Subtotal Period 5d Period-Dependent Costs	- - - - - - - - -	- - - - - - - -	- - - - - - - -	- - - - - - -	- - - - - - - -	- - - - - - -	9 53 4 3 6 2 74 19	1 5 0 0 1 1 3 22	10 58 4 3 7 3 85 22 194	10 58 - 7 3 85 22 186	4 3	: : : : :			- - - - - - -	-		-	-	1,077 269
5d.0	TOTAL PERIOD 5d COST	-	-	1,444	-	-	8,680	247	1,689	12,060	11,973	87	-	-	-	-	-	1,773	344,823	-	1,346
PERIOD	5e - ISFSI Decontamination																				
Period 5e	Direct Decommissioning Activities																				
Period 5e 5e.2.1 5e.2	Additional Costs License Termination ISFSI Subtotal Period 5e Additional Costs	-	0				142 142		339 339	1,696 1,696	1,696 1,696	-	:	- -	424 424		- -	- -	65,754 65,754	5,882 5,882	
Period 5e 5e.4.1 5e.4.2 5e.4.3 5e.4.4 5e.4.5 5e.4.6 5e.4.7 5e.4	Period-Dependent Costs Insurance Property taxes Plant energy budget Fixed Overhead Railroad Track Maintenance Security Staff Cost Utility Staff Cost Subtotal Period 5e Period-Dependent Costs	- - - - - - - -	- - - - - -	- - - - - - -	- - - - - -	- - - - - -	- - - - - -	93 56 11 54 21 174 129 536	23 14 3 14 5 43 32 134	116 69 13 68 26 217 161 670	116 69 13 68 26 217 161 670	- - -			- - - - - -	- - - - - -					2,500 1,896 4,396
5e.0	TOTAL PERIOD 5e COST	-	0	) 2	17	-	142	1,733	473	2,367	2,367	-	-	-	424	-	-	-	65,754	5,882	5,556
PERIOD	5f - ISFSI Site Restoration																				
Period 5f	Direct Decommissioning Activities																				
Period 5f 5f.2.1 5f.2	Additional Costs Demolition and Site Restoration of ISFSI Subtotal Period 5f Additional Costs		1,121 1,121		-	-	-	161 161	192 192	1,474 1,474	-	-	1,474 1,474	-	-	-	-	-	-	4,846 4,846	

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

Table J-1 Prairie Island SAFSTOR Unit 1 SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage (Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial '	Volumes		Burial /		Utility and
Activity		Decon	Removal	Packaging	Transport	Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
	ollateral Costs		_						_												
	Small tool allowance	-	7	-	-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	-	-
5f.3 S	Subtotal Period 5f Collateral Costs	-	7	-	-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	-	-
Period 5f Per	eriod-Dependent Costs																				
	Property taxes	-	_	_	-	_	-	28	3	31	-	-	31	_	_	_	-	_	-	-	_
	Heavy equipment rental	-	59	_	-	_	-		9	68	-	-	68	_	_	_	-	_	-	-	_
	Plant energy budget	-	-	-	-	-	-	6	1	6	-	-	6	-	-	-	-	-	-	-	-
	Fixed Overhead	-	-	-	-	-	-	28	4	32	-	-	32	-	-	-	-	-	-	-	-
5f.4.6 R	Railroad Track Maintenance	-	-	-	-	-	-	11	2	12	-	-	12	-	-	-	-	-	-	-	-
5f.4.7 S	Security Staff Cost	-	-	-	-	-	-	89	13	102	-	-	102	-	-	-	-	-	-	-	1,281
5f.4.8 U	Jtility Staff Cost	-	-	-	-	-	-	55	8	63	-	-	63	-	-	-	-	-	-	-	795
5f.4 S	Subtotal Period 5f Period-Dependent Costs	-	59	-	-	-	-	216	40	315	-	-	315	-	-	-	-	-	-	-	2,076
5f.0 T	TOTAL PERIOD 5f COST	-	1,187	-	-	-	-	377	233	1,798	-	-	1,798	-	-	-	-	-	-	4,846	2,156
PERIOD 5	TOTALS	-	23,736	1,525	435	-	11,212	1,264,263	161,025	1,462,196	18,210	1,394,345	49,641	-	9,353	-	-	1,773	1,470,189	106,017	5,526,005
TOTAL COS	ST TO DECOMMISSION	6,192	94,084	20,994	6,793	23,152	45,944	2,416,286	354,811	2,968,256	963,420	1,947,995	56,842	147,716	151,089	125	742	1,773	14,528,860	652,634	11,679,960

TOTAL COST TO DECOMMISSION WITH 13.58% CONTINGENCY:	\$2,968,256	thousands of 2020 dollars
TOTAL NRC LICENSE TERMINATION COST IS 32.46% OR:	\$963,420	thousands of 2020 dollars
SPENT FUEL MANAGEMENT COST IS 65.63% OR:	\$1,947,995	thousands of 2020 dollars
NON-NUCLEAR DEMOLITION COST IS 1.91% OR:	\$56,842	thousands of 2020 dollars
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	151,957	Cubic Feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	1,773	Cubic Feet
TOTAL SCRAP METAL REMOVED:	33,003	Tons
TOTAL CRAFT LABOR REQUIREMENTS:	652,634	Man-hours

End Notes: n/a - indicates that this activity not charged as decommissioning expense a - indicates that this activity performed by decommissioning staff 0 - indicates that this value is less than 0.5 but is non-zero A cell containing " - " indicates a zero value

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Table J-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(111	ousanus (	oi 2020 Dollars	<b>-</b> )											
						Off-Site	LLRW	0.1			NRC	Spent Fuel	Site	Processed			Volumes	amaa	Burial /	<i>a</i> •	Utility and
Activity Index		Decon Cost	Kemoval Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
PERIOI	) 1a - Shutdown through Transition																				
Period 1	a Direct Decommissioning Activities																				
1a.1.1	SAFSTOR site characterization survey	-	-	-	-	-	-	415	124	539	539	-	-	-	-	-	-	-	-	-	-
1a.1.2	Prepare preliminary decommissioning cost	-	-	-	-	-	-	71	11	82	82	-	-	-	-	-	-	-	-	-	556
1a.1.3 1a.1.4	Notification of Cessation of Operations Remove fuel & source material									a n/a											
1a.1.5	Notification of Permanent Defueling									a											
1a.1.6 1a.1.7	Deactivate plant systems & process waste Prepare and submit PSDAR	_	_		_		_	110	16	a 126	126	_	_	_	_	_	_	_	_	_	855
1a.1.8	Review plant dwgs & specs.	-	-	-	-	-	-	71	11	82	82	-	-	-	-	-	-	-	-	-	556
1a.1.9	Perform detailed rad survey Estimate by-product inventory							55	0	a 63	63										428
1a.1.10 1a.1.11	End product description	-		-	-	-		55 55	8	63	63	-	-	-	-	-	-	-	-		428
1a.1.12	Detailed by-product inventory	-	-	-	-	-	-	82	12	95	95	-	-	-	-	-	-	-	-	-	641
1a.1.13 1a.1.14	Define major work sequence Perform SER and EA	-	-	-	-	-	-	55 170	8 26	63 196	63 196	-	-	-	-	-	-	-	-	-	428 1,326
1a.1.15	Prepare/submit Defueled Technical Specifications	-	-	-	-	-	-	412	62	474	474	-	-	-	-	-	-	-	-	-	3,207
1a.1.16	Perform Site-Specific Cost Study	=	-	=	-	-	-	275 55	41	316 63	316 63	-	-	-	-	-	-	-	-	-	2,138
1a.1.17	Prepare/submit Irradiated Fuel Management Plan	-	-	-	-	-	-	99	8	63	63	-	-	-	-	-	-	-	-	-	428
	Specifications																				
	Prepare plant and facilities for SAFSTOR Plant systems	-	-	-	-	-	-	270 229	41 34	311 263	311 263	-	-	-	-	-	-	-	-	-	2,104 1,782
1a.1.18.3	Plant structures and buildings	-	-	-	-	-	-	171	26	197	197	-	-	-	-	-	-	-	-	-	1,334
	Waste management	-	-	-	-	-	-	110 110		126 126	126 126	-	-	-	-	-	-	-	-	-	855 855
1a.1.18.0 1a.1.18	Facility and site dormancy Total	-	-	-	-	-	-	891	134	1,024	1,024	-	-	-	-	-	-	-	-		6,930
										,-	,-										-,
	Work Procedures Plant systems							65	10	75	75										506
	Facility closeout & dormancy	-	-	-	-	-	-	66		76	76	-	-	-	-	-	-	-	-	-	513
1a.1.19	Total	=	-	=	-	-	-	131	20	151	151	-	-	-	-	-	-	-	-	-	1,019
1a.1.20	Procure vacuum drying system	-	_	_	-	-	-	5	1	6	6	-	-	-	_	-	-	-	-	-	43
1a.1.21	Drain/de-energize non-cont. systems									a											
1a.1.22 1a.1.23	Drain & dry NSSS Drain/de-energize contaminated systems									a											
1a.1.24	Decon/secure contaminated systems									a											
1a.1	Subtotal Period 1a Activity Costs	-	-	-	-	-	-	2,854	490	3,345	3,345	-	-	-	-	-	-	-	-	-	18,981
Period 1a	a Collateral Costs																				
1a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,330	199	1,529	- 0.070	1,529	-	-	-	-	-	-	-	-	-
1a.3.2 1a.3.3	Retention and Severance Prairie Island Indian Community Payments	-	-	-	-	-	-	8,394 1,249	1,259	9,653 1,249	9,653	1,249	-	-	-	-	-	-	-	-	-
1a.3	Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	10,973	1,459	12,432	9,653	2,779		-	-	-	-	-	-	-	-
Period 1:	a Period-Dependent Costs																				
1a.4.1	Insurance	-	-	-	-	-	-	1,660	166	1,826	1,826	-	-		-	-	-	-		-	-
1a.4.2	Property taxes	-	604	-	-	-	-	3,623	362 151	3,985 755	3,985 755	-	-	-	-	-	-	-	-	-	-
1a.4.3 1a.4.4	Health physics supplies Heavy equipment rental	-	753		-	-	-	-	113	755 866	755 866	-	-	-	-	-	-	-	-		-
1a.4.5	Disposal of DAW generated	-	-	12		5 -	49	-	14	80	80	-	-	-	597	-	-	-	11,944	19	-
1a.4.6 1a.4.7	Plant energy budget NRC Fees	-	-	-	-	-	-	1,621 516	243 52	1,864 567	1,864 567	-	-	-	-	-	-	-	-	-	-
1a.4.7 1a.4.8	Emergency Planning Fees	-	-	-	-	-	-	2,174	217	2,392	-	2,392	-	-	-	-	-	-	-	-	-
1a.4.9	Fixed Overhead	-	-	-	-	-	-	1,440	216	1,656	1,656	-	-	-	-	-	-	-	-	-	-
1a.4.10 1a.4.11	Spent Fuel Pool O&M ISFSI Operating Costs	-	-	-	-	-	-	422 56	63 8	486 64	-	486 64	-	-	-	-	-	-	-	-	-
1a.4.12	Railroad Track Maintenance	-	-	-	-	-	-	63	9	72	72	-	-	-	-	-	-	-	-	-	-
1a.4.13 1a.4.14	Security Staff Cost Utility Staff Cost	-	-	-	-	-	-	8,328 25,478	1,249 3,822	9,577 29,300	9,577 29,300	-	-	-	-	-	-	-	-	-	122,720 400,944
1a.4.14 1a.4	Subtotal Period 1a Period-Dependent Costs	-	1,357	12	. 5	- 5 -	49		6,687	53,491	50,549	2,942	-	-	597	-	-	-	11,944	19	
1a.0	TOTAL PERIOD 1a COST	-	1,357			5 -	49	59,209	8,636	69,267	63,547	5,720	-	-	597	-	-	-	11,944	19	542,645

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Table J-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(Th	ousanas c	of 2020 Dollar	s)											
Activit Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIO	D 1b - SAFSTOR Limited DECON Activities																				
	b Direct Decommissioning Activities																				
	_																				
	mination of Site Buildings Reactor	1,199	_	_	-	_	-	-	599	1,798	1,798	-	-	_	-	_	-	-	-	17,003	-
1b.1.1.2	Auxiliary	1,244		-	-	-	-	-	622	1,866	1,866	-	-	-	-	-	-	-	-	17,950	-
1b.1.1.3 1b.1.1.4		17 105		-	-	-	-	-	8 52	25 157	25 157	-	-	-	-	-	-	-	-	244 1,487	
1b.1.1.5	Radwaste	47	-	-	-	-	-	-	23	70	70	-	-	-	-	-	-	-	-	669	-
1b.1.1.6 1b.1.1.7		14 911		-	-	-	-	-	7 455	21 1,366	21 1,366	-	-	-	-	-	-	-	-	198 12,414	
1b.1.1	Totals	3,536		-	-	-	-	-	1,768		5,304	-	-	-	-	-	-	-	-	49,966	
1b.1	Subtotal Period 1b Activity Costs	3,536	-	-	-	-	-	-	1,768	5,304	5,304	-	-	-	-	-	-	-	-	49,966	-
Period 1	b Additional Costs																				
1b.2.1 1b.2	Spent Fuel Pool Isolation Subtotal Period 1b Additional Costs	-	-	-	-	-	-	8,450 8,450	1,268 1,268		9,718 9,718	-	- -	-	-	-	-	-	-	-	-
	b Collateral Costs	1,000								1.010	1.010										
1b.3.1 1b.3.2	Decon equipment Process decommissioning water waste	1,055 107		71	128	-	288	-	158 152		1,213 746	-	-	-	661	-	-	-	39,639	129	-
1b.3.4	Small tool allowance	-	59		-	-	-	-	9	68	68	-	-	-	-	-	-	-	-	-	-
1b.3.5 1b.3.6	Spent Fuel Capital and Transfer Retention and Severance	-	-	-	-	-	-	309 2,296	46 344		2,640	356	-	-	-	-	-	-	-	-	-
1b.3.7 1b.3	Prairie Island Indian Community Payments Subtotal Period 1b Collateral Costs	1,162	-	-	128	-	288	311	710	311	4,667	311 667		-	661	-		-	39,639	129	-
Dowland 1	b Period-Dependent Costs	•						,			,										
1b.4.1	Decon supplies	1,334	-	-	-	-	-	-	333	1,667	1,667	-	-	-	-	-	-	-	-	-	-
1b.4.2	Insurance	-	-	-	-	-	-	414 902	41 90		455 993	-	=	-	-	-	-	-	-	-	-
1b.4.3 1b.4.4	Property taxes Health physics supplies	-	438	-	-	-	-	902	109		547	-	-	-	-	-	-	-	-	-	-
1b.4.5	Heavy equipment rental	-	188			-	-	-	28	216	216	-	-	-	-	-	-	-	-	-	-
1b.4.6 1b.4.7	Disposal of DAW generated Plant energy budget	-	-	13	5	-	52	404	15 61	85 465	85 465	- -	-	-	634	-	-	-	12,677	21	-
1b.4.8	NRC Fees	-	-	-	-	-	-	98	10	108	108	-	-	-	-	-	-	-	-	-	-
1b.4.9 1b.4.10	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	542 359	54 54		413	596	-	-	-	-	-	-	-	-	-
1b.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	105	16	121	-	121	-	-	-	-	-	-	-	-	-
1b.4.12 1b.4.13	ISFSI Operating Costs Railroad Track Maintenance	-	-	-	-	-	-	14 16	2 2	16 18		16	-	-	-	-	-	-	-	-	-
1b.4.14	Security Staff Cost	-	-	-		-		2,076	311		2,388	-	-	-	-	-	-	-	-	-	30,596
1b.4.15	Utility Staff Cost Subtotal Period 1b Period-Dependent Costs	1,334	626	13		-	- 52	6,714 11,645	1,007 2,135		7,722 15,076	- 733	-	-	634	-	-	-	12,677	21	105,271 135,867
1b.4					5									-		-	-	-			
1b.0	TOTAL PERIOD 16 COST	6,032	684	84	133	-	340	23,012	5,880	36,165	34,764	1,401	-	-	1,295	-	-	-	52,317	50,115	135,867
	D 1c - Preparations for SAFSTOR Dormancy c Direct Decommissioning Activities																				
1c.1.1	Prepare support equipment for storage	-	527	-	_	_	_	-	79	606	606	-	-	_	-	-	_	-	_	3,000	_
1c.1.2	Install containment pressure equal. lines	-	54	-	-	-	-	-	8	62	62	-	-	-	-	-	-	-	-	700	-
1c.1.3 1c.1.4	Interim survey prior to dormancy Secure building accesses	-	-	-	-	-	-	733	220	953	953	-	-	-	-	-	-	-	-	12,801	-
1c.1.5	Prepare & submit interim report	-	-	-	-	-	-	32	5	37	37	-	-	-	-	-	-	-	-	-	249
1c.1	Subtotal Period 1c Activity Costs	-	581	-	-	-	-	765	312	1,658	1,658	-	-	-	-	-	-	-	-	16,501	249
	c Collateral Costs				100		0.5		***	20:					<b>₽</b> .0-				00.00=	***	
1c.3.1 1c.3.3	Process decommissioning water waste Small tool allowance	91	- 5	60	109	-	245	-	129 1	634 6	634 6	<del>-</del>	-	-	561	-	-	-	33,685	109	-
1c.3.4	Spent Fuel Capital and Transfer	-	-	-	-	-	-	90	13	103	-	103	-	-	-	-	-	-	-	-	-
1c.3.5 1c.3.6	Retention and Severance Prairie Island Indian Community Payments	-	-	-	-	-	-	1,722 311	258	1,980 311	1,980	311	-	-	-	-	-	-		-	-
1c.3	Subtotal Period 1c Collateral Costs	91			109	-	245		401	3,034	2,619	415		-	561	-	-	-	33,685	109	-

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Table J-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							`		1 2020 Donar.	,											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activit		Decon	Removal	Packaging		Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B	Class C		Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. reet	Cu. Feet	Cu. reet	Wt., Lbs.	Manhours	Manhours
	c Period-Dependent Costs																				
1c.4.1 1c.4.2	Insurance Property taxes	-	-	-	-	-	-	414 901	41 90	455 991	455 991	-	-	-	-	-	-	-	-	-	-
1c.4.2 1c.4.3	Health physics supplies	-	248	-	-	-	-	901	62	309	309	-	-	-		-	-	-	-	-	-
1c.4.4	Heavy equipment rental	-	188	-	-	-	-	-	28	216	216	-	-	-	-	-	-	-	-	-	-
1c.4.5	Disposal of DAW generated	-	-	3	1	-	13	-	4	20	20	-	-	-	152	-	-	-	3,039	5	-
1c.4.6 1c.4.7	Plant energy budget NRC Fees	-	-	-	-	-	-	404 98	61 10	465 108	465 108	-	-	-	-	-	-	-	-	-	-
1c.4.7 1c.4.8	Emergency Planning Fees	-	-	-	-	-	-	542	54	596	108	596	-	-	-	-	-	-	-	-	-
1c.4.9	Fixed Overhead	-	-	-	-	-	-	359	54	413	413	-	-	-	-	-	-	-	-	-	-
1c.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	105	16	121	-	121	-	-	-	-	-	-	-	-	-
1c.4.11	ISFSI Operating Costs	-	-	-	-	-	-	14 16	$\frac{2}{2}$	16 18	18	16	-	-	-	-	-	-	-	-	-
1c.4.12 1c.4.13	Railroad Track Maintenance Security Staff Cost	-	-	-	-	-	-	2,076	311	2,388	2,388	-	-	-	-		-	-	-	-	30,596
1c.4.14	Utility Staff Cost	_	_	_	-	_	-	6,714	1,007	7,722	7,722	-	-	-	-	-	-	-	-	-	105,271
1c.4	Subtotal Period 1c Period-Dependent Costs	-	435	3	1	-	13	11,643	1,742	13,838	13,104	733	-	-	152	-	-	-	3,039	5	135,867
1c.0	TOTAL PERIOD 1c COST	91	1,021	63	110	-	257	14,531	2,456	18,530	17,382	1,148	-	-	713	-	-	-	36,724	16,615	136,116
PERIO	D 1 TOTALS	6,123	3,062	159	248	-	646	96,752	16,972	123,961	115,692	8,269	-	-	2,605	_	-	-	100,985	66,750	814,628
PERIO	D 2a - SAFSTOR Dormancy with Wet Spent Fuel Storage																				
Period 2	a Direct Decommissioning Activities																				
2a.1.1	Quarterly Inspection									a											
2a.1.2	Semi-annual environmental survey									a											
2a.1.3	Prepare reports Bituminous roof replacement							999	33	a 256	256										
2a.1.4 2a.1.5	Maintenance supplies	-	-	-	-	-	-	223 349	55 87	437	437	-	-	-	-	-	-	-	-	-	-
2a.1	Subtotal Period 2a Activity Costs	-	-	-	-	-	-	572	121	693	693	-	-	-	-	-	-	-	-	-	-
	a Additional Costs							4.040	050	F 000	<b>7</b> 000										
2a.2.1 2a.2	Security Modifications Subtotal Period 2a Additional Costs	-	-	-	-	-	-	4,348 4,348	652 652	5,000 5,000	5,000 5,000	-	-	-	-	-	-	-	-	-	-
Period 2	a Collateral Costs																				
2a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	64,672	9,701	74,373	-	74,373	-	-	-	-	-	-	-	-	-
2a.3.2	Retention and Severance	-	-	-	-	-	-	11,054	1,658	12,712	12,712	-	-	-	-	-	-	-	-	-	-
2a.3.3 2a.3	Prairie Island Indian Community Payments Subtotal Period 2a Collateral Costs	-	-	-	-	-	-	3,128 78,854	11,359	3,128 90,213	12,712	3,128 77,501	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	10,004	11,559	90,215	12,112	77,501	-	-	-	-	-	-	-	-	-
Period 2 2a.4.1	a Period-Dependent Costs Insurance							1,213	121	1,334	1,334										
2a.4.1 2a.4.2	Property taxes	-	-	-	-	-	-	9.065	907	9,972	9,972	-	-	-	-	-	-	-	-	-	-
2a.4.3	Health physics supplies	-	617	-	-	-	-	-	154	771	771	-	-	-	-	-	-	-	-	-	-
2a.4.4	Disposal of DAW generated	-	-	11	5	-	47	-	14	77	77	-	-	-	576	-	-	-	11,523	19	-
2a.4.5	Plant energy budget	-	-	-	-	-	-	812 536	122	934 590	934 590	-	-	-	-	-	-	-	-	-	-
2a.4.6 2a.4.7	NRC Fees Emergency Planning Fees	-	-	-	-	-	-	536 4,653	54 465	5,119	590	5,119	-	-	-	-	-	-	-	-	-
2a.4.8	Fixed Overhead	-	=	-	-	-	-	2,979	447	3,426	3,426	-	-	-	-	-	_	-	-	-	-
2a.4.9	Spent Fuel Pool O&M	-	-	-	-	-	-	1,057	159	1,216	-	1,216	-	-	-	-	-	-	-	-	-
2a.4.10	ISFSI Operating Costs	-	-	-	-	-	-	140	21	161	-	161	=	-	-	-	-	-	-	-	=
2a.4.11 2a.4.12	Railroad Track Maintenance Security Staff Cost	-	-	-	-	-	-	385 19,158	58 2,874	443 22,032	443 15,863	6,169	<del>-</del>	-	-	-	-	-	-	-	281,262
2a.4.12 2a.4.13		-	-	-	-	-	-	13,370	2,006	15,376	12,900	2,476	-	-	-	-	-	-	-	-	205,738
2a.4	Subtotal Period 2a Period-Dependent Costs	-	617	11	5	-	47	53,370	7,400	61,450	46,309	15,140	-	-	576	-	-	-	11,523	19	
2a.0	TOTAL PERIOD 2a COST	-	617	11	5	-	47	137,143	19,532	157,355	64,714	92,641	-	-	576	-	-	-	11,523	19	486,999
PERIO	D 2b - SAFSTOR Dormancy with Dry Spent Fuel Storage																				
	b Direct Decommissioning Activities																				
2b.1.1	Quarterly Inspection									a											
2b.1.2	Semi-annual environmental survey									a											
2b.1.3 2b.1.4	Prepare reports Bituminous roof replacement	_	_	_	_	_	_	4,402	660	a 5,063	5,063	_	_	_	_	_	_	_	_	_	_
2b.1.4 2b.1.5	Maintenance supplies		-	-	-	-	-	6,902	1,726	8,628	8,628	-	-		-	-	-	-	-		-
2b.1	Subtotal Period 2b Activity Costs	-	-	_	_	-	-	11,305	2,386	13,691	13,691	-	-	-	-	-	-	-	_	-	-

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Table J-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							,														
Activity	,	Decon	Removal	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Total	Total	NRC Lic. Term.	Spent Fuel Management	Site Restoration	Processed Volume	Class A	Burial Class B	Volumes Class C	GTCC	Burial / Processed	Craft	Utility and Contractor
Index		Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet			Cu. Feet			Manhours	Manhours
	Collateral Costs																				
2b.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	136,259	20,439	156,698	-	156,698	-	-	-	-	-	-	-	-	-
2b.3.2 2b.3	Prairie Island Indian Community Payments Subtotal Period 2b Collateral Costs	-	-	-	-	-	-	61,783 198,042	20,439	61,783 218,481	-	61,783 218,481	-	-	-	-	-	-	-	-	-
Period 9k	Period-Dependent Costs																				
2b.4.1	Insurance	-	-	-	-	-	-	23,951	2,395	26,346	26,346	-	-	-	-	-	-	-	-	-	-
2b.4.2	Property taxes	-	-	-	-	-	-	179,063	17,906	196,969	196,969	-	-	-	-	-	-	-	-	-	-
2b.4.3 2b.4.4	Health physics supplies Disposal of DAW generated	-	5,618	101	41	-	421	-	1,404 122	7,022 685	7,022 685	-	-	-	5,109	-	-	-	102,180	167	-
2b.4.5	Plant energy budget	-	-	-	-	-	-	8,019	1,203	9,222	9,222	-	-	-	-	-	-	-	-	-	-
2b.4.6	NRC Fees	-	-	-	-	-	-	10,191	1,019	11,211	11,211	-	-	-	-	-	-	-	-	-	-
2b.4.7 2b.4.8	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	3,667 8,059	367 1,209	4,033 9,268	9,268	4,033	-	-	-	-	-	-	-	-	-
2b.4.8 2b.4.9	ISFSI Operating Costs	-	-	-	-	-	-	2,768	415	3,183	9,266	3,183	-	-	-	-	-	-	-	-	-
2b.4.10	Railroad Track Maintenance	-	-	-	-	-	-	3,092	464	3,556	3,556	-	-	-	-	-	-		-	-	-
2b.4.11	Security Staff Cost	-	-	-	-	-	-	138,043	20,706	158,749	34,925	123,825	-	-	-	-	-	-	-	-	1,851,79
2b.4.12 2b.4	Utility Staff Cost Subtotal Period 2b Period-Dependent Costs	-	5,618	101	41	-	421	67,547 444,401	10,132 57,343	77,680 507,924	48,783 347,987	28,897 159,938	-	-	5,109	-	-	-	102,180	167	1,028,77 2,880,56
2b.0	TOTAL PERIOD 2b COST	-	5,618	101	41	-	421	653,748	80,167	740,096	361,678	378,419	-	-	5,109	_	-	-	102,180	167	2,880,56
PERIOD	2 TOTALS	-	6,235	113	46	-	468	790,891	99,699	897,452	426,392	471,060	-	-	5,685	-	-	-	113,703	185	3,367,566
PERIOD	0 3a - Reactivate Site Following SAFSTOR Dormancy																				
	a Direct Decommissioning Activities																				
3a.1.1	Prepare preliminary decommissioning cost	-	-	-	-	-	-	71	11	82	82	-	-	-	-	-	-	-	-	-	55
3a.1.2 3a.1.3	Review plant dwgs & specs. Perform detailed rad survey	-	-	-	-	-	-	253	38	291 a	291	-	-	-	-	-	-	-	-	-	1,96
3a.1.4	End product description	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	42
3a.1.5	Detailed by-product inventory	-	-	-	-	-	-	71	11	82		-	-	-	-	-	-	-	-	-	55
3a.1.6 3a.1.7	Define major work sequence Perform SER and EA	-	-	-	-	-	-	412 170	62 26	474 196	474 196	-	-	-	-	-	-	-	-	-	3,20 1,32
3a.1.8	Perform Site-Specific Cost Study	-	-	-	-	-	-	275	41	316		-	-	-	-	-	-	-	-	-	2,13
Activity S	Specifications																				
3a.1.9.1	Re-activate plant & temporary facilities	-	-	-	-	-	-	405	61	466	419	-	47	-	-	-	-	-	-	-	3,15
3a.1.9.2 3a.1.9.3	Plant systems Reactor internals	-	-	-	-	-	-	229 390	34 59	263 449	237 449	-	26	-	-	-	-	-	-	-	1,78 3,03
3a.1.9.4	Reactor vessel	-	-	-	-	-	-	357	54	411	411	-	-	-	-	-	-	-	-	-	2,77
3a.1.9.5	Biological shield	-	-	-	-	-	-	27	4	32	32	-	-	-	-	-	-	-	-	-	21
3a.1.9.6	Steam generators	-	-	-	-	-	-	171	26	197	197	-		-	-	-	-	-	-	-	1,33
3a.1.9.7 3a.1.9.8	Reinforced concrete Main Turbine	-	-	-	-	-	-	88 22	13	101 25	51	-	51 25	-	-	-	-	-	-	-	68 17
3a.1.9.9	Main Condensers	-	-	-	-	_	-	22	3	25	-	-	25	-	-		_		-	-	17
	Plant structures & buildings	-	-	-	-	-	-	171	26	197	99	-	99	-	-	-	-	-	-	-	1,33
	Waste management	-	-	-	-	-	-	253 49	38 7	291	291	-	-	-	-	-	-	-	-	-	1,96 38
3a.1.9.12 3a.1.9	Facility & site closeout Total		-	-	-	-	-	2,186	328	57 $2,514$	28 2,213	-	28 301	-	-	-	-	-	-	-	17,00
Planning	& Site Preparations																				
3a.1.10	Prepare dismantling sequence	-	-	-	-	-	-	132	20	152	152	-	-	-	-	-	-	-	-	-	1,02
3a.1.11	Plant prep. & temp. svces	-	-	-	-	-	-	3,500 77	525	4,025		-	=	-	-	-	-	-	-	-	59
3a.1.12 3a.1.13	Design water clean-up system Rigging/Cont. Cntrl Envlps/tooling/etc.	-	-	-		-	-	2,400	12 360	88 2,760	88 2,760	-	-	-	-	-	-	-	-	-	55
3a.1.14	Procure casks/liners & containers	-	-	-	-	-	-	68	10	78	78	-	- -	-	-	-	-	-	-	-	52
3a.1	Subtotal Period 3a Activity Costs	-	-	-	-	-	-	9,670	1,451	11,121	10,820	-	301	-	-	-	-	-	-	-	29,33
Period 3a 3a.2.1	a Additional Costs Site Characterization	_	_	_	_	_	_	1,505	451	1,956	1,956	_	_	_	_	_	_	_	_	8,988	3,56
3a.2.2	Mixed/Hazardous Waste	-	-	353	94	178		-	76	702		-	-	6,132	-	-	-	-	351,977	2,348	-
3a.2.3	Asbestos Abatement	-	2,526	3	150	-	1,369	-	996	5,044	5,044	-	-	-	12,843	-	-	-	166,959	20,907	-
3a.2	Subtotal Period 3a Additional Costs	-	2,526	356	244	178	1,369	1,505	1,524	7,702	7,702	-	-	6,132	12,843	-	-	-	518,936	32,243	3,563

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Table J-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(111	ousunus (	oi 2020 Dollars	3)											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet		Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
	a Collateral Costs																				
3a.3.1 3a.3.2	Small tool allowance Spent Fuel Capital and Transfer	-	34	-	-	-	-	39,506	5 5,926	39 45,431	39	45,431	-	-	-	-	-	-	-	-	-
3a.3.3	Prairie Island Indian Community Payments	-	-	-	-	-	-	1,249	5,926	1,249		1,249	-	-	-	-	-	-	-	-	-
3a.3	Subtotal Period 3a Collateral Costs	-	34	-	-	-	-	40,755	5,931	46,720		46,680	-	-	-	-	-	-	-	-	-
	a Period-Dependent Costs							404	10	*00	205	20*									
3a.4.1 3a.4.2	Insurance Property taxes	-		-	-	-	-	484 3,546	48 355	533 3,900		225 1,400	-	-					-	-	-
3a.4.3	Health physics supplies	-	641	-	-	-	-		160	802	802	-,	-	-	-	-	-	-	-	-	-
3a.4.4	Heavy equipment rental	-	753		- 4	-	-	-	113	866		-	-	-	401	-	-	-	- 0.010	- 10	-
3a.4.5 3a.4.6	Disposal of DAW generated Plant energy budget	-	-	10	4	-	40	1,621	11 243	64 1,864		-	-	-	481	-	-	-	9,613	16	-
3a.4.7	NRC ISFSI Fees	-	-	-	-	-	-	42	4	46	´-	46	-	-	-	-	-	-	-	-	-
3a.4.8	NRC Fees	=	-	-	-	-	-	260	26	286		-	-	-	-	-	-	-	-	-	-
3a.4.9 3a.4.10	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	74 1,440	7 216	82 1,656		82	-	-	-	-	-	-	-	-	-
3a.4.11	ISFSI Operating Costs	-	-	-	-	-	-	56	8	64	· -	64	-	-	-	-	-	-	-	-	-
3a.4.12	Railroad Track Maintenance	-	-	-	-	-	-	63	9	72		-	-	-	-	-	-	-	-	-	-
3a.4.13 3a.4.14	Security Staff Cost Utility Staff Cost	-	-	-	-	-	-	368 12.056	55 1,808	424 13.864		485	-	-	-	-	-	-	-	-	6,240 199,680
3a.4	Subtotal Period 3a Period-Dependent Costs	-	1,394	10	4	-	40		3,066	24,523	22,220	2,302	-	-	481	-	-	-	9,613	16	205,920
3a.0	TOTAL PERIOD 3a COST	-	3,954	366	248	178	1,409	71,939	11,971	90,065	40,781	48,983	301	6,132	13,324	-	-	-	528,549	32,259	238,819
PERIOR	3b - Decommissioning Preparations																				
Period 3b	Direct Decommissioning Activities																				
	Work Procedures																				
3b.1.1.1		-	-	-	-	-	-	260	39	299	269	-	30	-	-	-	-	-	-	-	2,024
3b.1.1.2 3b.1.1.3	Reactor internals Remaining buildings	-	-	-	-	-	-	137 74	21 11	158 85		-	64	-	-	-	-	-	-	-	1,069 577
3b.1.1.4	CRD cooling assembly	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	428
3b.1.1.5	CRD housings & ICI tubes	-	-	-	-	-	-	55	8	63		-	-	-	-	-	-	-	-	-	428 428
3b.1.1.6 3b.1.1.7	Incore instrumentation Reactor vessel	-	-	-	-	-	-	55 199	8 30	63 229		-	-	-	-	-	-	-	-	-	428 1,552
3b.1.1.8	Facility closeout	-	-	-	-	-	-	66	10	76	38	-	38	-	-	-	-	-	-	-	513
3b.1.1.9	Missile shields	=	-	-	-	-	-	25 66	4	28		-	-	-	-	-	-	-	-	-	192
3b.1.1.10 3b.1.1.11		-	-	-	-	-	-	253	10 38	76 291	76 291	-	-	-	-	-	-	-	-	-	513 1,967
3b.1.1.12	Reinforced concrete	-	-	-	-	-	-	55	8	63	32	-	32	-	-	-	-	-	-	-	428
	Main Turbine	=	-	-	-	-	-	86	13	99		-	99	-	-	-	-	-	-	-	667
	Main Condensers Auxiliary building	-		-	-	-	-	86 150	13 23	99 173		-	99 17	-					-	-	667 1,167
3b.1.1.16	Reactor building	-	-	-	-	-	-	150	23	173	155	-	17	-	-	-	-	-	-	-	1,167
3b.1.1	Total	=	-	-	-	-	-	1,772	266	2,038		-	395	-	-	-	-	-	-	-	13,787
3b.1	Subtotal Period 3b Activity Costs	-	-	-	-	-	-	1,772	266	2,038	1,643	-	395	-	-	-	-	-	-	-	13,787
3b.3.1	o Collateral Costs Decon equipment	1,055	-	-	-	-	-	-	158	1,213		-	-	-	-	-	-	-	-	-	-
3b.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,264		1,454		-	-	-	-	-	-	-	-	-	-
3b.3.3 3b.3.4	Pipe cutting equipment Prairie Island Indian Community Payments	-	1,200	-	-	-	-	623	180	1,380 623		623	-	-	-	-	-	-	-	-	-
3b.3	Subtotal Period 3b Collateral Costs	1,055	1,200		-	-	-	1,887	528	4,669		623	-	-	-	-	-	-	-	-	-
	Period-Dependent Costs																				
3b.4.1 3b.4.2	Decon supplies Insurance	38	-	-	-	-	-	241	9 24	47 266		-	-	-	-	-	-	-	-	-	-
3b.4.3	Property taxes	-	-	-	-	-	-	1,667	167	1,834	1,175	658	-	-	-	-	-	-	-	-	- -
3b.4.4	Health physics supplies	-	274	-	-	-	-	-	68	342		-	-	-	-	-	-	-	-	-	-
3b.4.5 3b.4.6	Heavy equipment rental Disposal of DAW generated	-	375	- 5	- 2	-	- 22	-	56 6	432 35		-	-	-	264	-	-	-	5,286	- 9	-
3b.4.7	Plant energy budget	-	-	-		-	-	808	121	930		-	-	-	-	-	-	-	5,200	-	-
3b.4.8	NRC ISFSI Fees	-	-	-	-	-	-	21	2	23		23	-	-	-	-	-	-	-	-	-
3b.4.9 3b.4.10	NRC Fees Emergency Planning Fees	<del>-</del>	-	-	-	-	-	129 37	13 4	142 41	142	41	-	-	-	-	-	-	-	-	-
3b.4.11	Fixed Overhead	-	-	-	-	-	-	718	108	826	826	- 41	-	-	-	-	-	-	-	-	- -

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Table J-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							`		1 2020 Donar.	- /											
Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 3b F	Period-Dependent Costs (continued)																				
3b.4.12	ISFSI Operating Costs	-	-	-	-	-	-	28	4	32	-	32	-	-	-	-	-	-	-	-	-
	Railroad Track Maintenance	-	-	-	-	-	-	31	5	36	36		-	-	-	-	-	-	-	-	-
	Security Staff Cost DOC Staff Cost	-	-	-	-	-	-	184 3,727	28 559	211 4,287	211 4,287	-	-	-	-	-	-	-	-	-	3,111 42,523
	Utility Staff Cost	-	-	-	-	-	-	6,011	902	6,913	6,671	242	-	-	-		-	-	-	-	99,566
	Subtotal Period 3b Period-Dependent Costs	38		5	2	-	22	13,604	2,076	16,396	15,400	996		-	264	-	-	-	5,286	9	145,201
3b.0	TOTAL PERIOD 3b COST	1,092	1,849	5	2	-	22	17,262	2,870	23,103	21,089	1,619	395	-	264	-	-	-	5,286	9	158,988
PERIOD 3	TOTALS	1,092	5,803	371	250	178	1,430	89,202	14,841	113,168	61,871	50,601	696	6,132	13,588	-	-	-	533,835	32,267	397,807
PERIOD 4	a - Large Component Removal																				
Period 4a I	Direct Decommissioning Activities																				
Nuclear Sta	eam Supply System Removal																				
	Reactor Coolant Piping	11	42	10	11	66	94	-	52	285	285	-	-	240	254	-	-	-	33,680	778	_
4a.1.1.2	Pressurizer Relief Tank	5	19	6	7	44	62	-	31	174	174		-	160	169	-	-	-	22,441	352	-
	Reactor Coolant Pumps & Motors	13			85	-	463	-	155	822	822		-	-	2,332		-	-	295,800	1,226	
4a.1.1.4 4a.1.1.5		-	77 3,307		91	2,409	776	-	265	1,591 15,625	1,591	-	-	19.679	2,196		-	-	158,199	1,346	
	Steam Generators CRDMs/ICIs/Service Structure Removal	63			1,743 44	326	3,885 454	-	2,590 283	1,623	15,625 1,623	-	-	18,672 2,138				-	1,581,180 165,025	10,253 4,449	
	Reactor Vessel Internals	51			862	-	7,848	278	11,032	38,074	38,074		-	2,100	1,174		673	-	167,337	22,373	
	Reactor Vessel	-	5,835		442	-	3,268	278	6,576	18,053	18,053		-	-	9,245		-	-	579,324	22,373	1,053
4a.1.1	Totals	144	14,237	17,346	3,284	2,845	16,851	556	20,984	76,247	76,247	-	-	21,210	28,505	-	673	-	3,002,986	63,151	5,187
	Major Equipment																				
	Main Turbine/Generator	-	292		35	555	-	-	173	1,170	1,170		-	2,243		-	-	-	134,601	4,116	
4a.1.3	Main Condensers	-	2,510	79	33	742	-	-	752	4,115	4,115	-	-	4,000	-	-	-	-	180,000	34,978	-
	Costs from Clean Building Demolition																				
	Reactor	-	794		-	-	-	-	119	913	913		-	-	-	-	-	-	-	7,589	
	Auxiliary Radwaste	<u>=</u>	221	-	-	-	-	-	33 1	254 10	254 10		-	-	-	-	-	-	-	1,309 65	
	Totals	-	1,023		-	-	-	-	154	1,177	1,177		-	-	-	-	-	-	-	8,963	
Disposal of	Plant Systems																				
	Admin Bldg Ventilation	=	6		-	-	-	-	1	7	-	-	7	-	-	-	-	-	-	90	-
	Air Removal	=	29		-	-	-	-	4	33	-	-	33		-	-	-	-	-	422	
	Auxiliary Feedwater Auxiliary Feedwater - RCA	-	46 38		- 1	30	-	-	7 14	53 84	84	-	53	178	-	-	-	-	7,214	676 486	-
	Bleed Steam	-	90			- 30	-	-	13	103	- 04	-	103		-	-	-	-	1,214	1,331	-
	Caustic Addition - RCA	-	40		2	40	-	-	16	99	99	-	-	240	-	-	-	-	9,761	468	-
	Chemical Feed	=	17		-	-	-	-	3	20	-	-	20		-	-	-	-	-	261	-
	Chemical Feed - RCA	-	3	0	0	3	-	-	1	7	7	-	-	16	-	-	-	-	634	31	-
4a.1.5.9 4a.1.5.10	Circulating Water	-	27 525		-	-	-	-	4 79	32 603	-	-	32 603		-	-	-	-	-	401 7,537	-
	Condensate Condensate Polishing	-	208		-	-	-	-	79 31	239	-	-	239		-	-	-	-	-	2,987	-
	Condensate Polishing - RCA	-	38	1	4	81	-	-	22	145	145	-	-	483	-	-	-	-	19,616	493	-
4a.1.5.13	Electro-Hydraulic	-	10		-	-	-	-	1	11	-	-	11		-	-	-	-	-	143	-
	External Circulating Water	-	26			-	-	-	4	30	-	-	30		-	-	-	-		385	-
4a.1.5.15 4a.1.5.16	External Circulating Water - RCA	-	72 127		5	121	-	-	37 19	237 146	237	-	146	721	-	-	-	-	29,284	938 1,840	-
	Feedwater Feedwater - RCA	-	248		31	694	-	-	171	1,152	1,152	-	146	4,147	-	-	-	-	168,414	1,840 3,377	-
4a.1.5.18		- -	34		-	-	-	-	5	39	- 1,102	-	39		-	-	-	-	-	504	-
4a.1.5.19	Heater Drain	-	384		-	-	-	-	58	441	-	-	441		-	-	-	-	-	5,638	-
	Hypobromous Acid Feed	-	6	-	-	-	-	-	1	7	-	-	7	-	-	-	-	-	-	86	-
	Hypobromous Acid Feed - RCA	-	1	0	0	0	-	-	0	2	2	-	-	2	-	-	-	-	100	12	
	Internal Circ Water & CDSR Main Gen/Exciter/Transformer	-	25 0	-	-	-	-	-	4	29	-	-	29		-	-	-	-	-	366 5	-
	Main Steam	-	101	-	-	-		-	15	116	-	-	116				-	-	-	1,482	-
	Main Steam - RCA	-	380		38	864	-	-	231	1,525	1,525	-	-	5,166	-	-	-	-	209,799	5,146	-
4a.1.5.26	Repairable Spare Snubbers	-	6	0	0	2	-	-	2	10	10	-	-	12		-	-	-	490	82	
	Steam Exclusion	-	2				-	-	0	2		-	2		-	-	-	-	-	32	
	Steam Exclusion - RCA	-	4 378	$0 \\ 21$	0 27	4 319	015	-	2	10	110		-	1 000		-	-	-	966	47 5 170	
	Steam Generator Blowdown Steam Generators	-	378 5	21	27	319	215	-	202 1	1,162 6	1,162	-	- 6	1,906	631	-	-	-	118,130	5,179 75	
48.1.0.00	ocam delicrators	-	Э	-	-	-	-	-	1	ь	-	-	6	-	-	-	-	-	-	19	-

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Table J-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							,														
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A	Class B	Volumes Class C Cu. Feet	GTCC	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. reet	Cu. reet	Cu. Feet	Cu. reet	Cu. reet	Wt., Lbs.	Mannours	Mannours
	of Plant Systems (continued)																				
	Turbine & Moisture Separators Turbine Oil Purification	-	377 53	-	-	-	-	-	57 8	434 61	-	-	434 61	-	-	-	-	-	-	5,472 757	-
	Water Treatment	-	453	-	-	-	-	-	68	521	-	-	521	-	-	-	-	-	-	6,677	<del>-</del> -
4a.1.5.34	Water Treatment - RCA	-	20	0	1	19	-	-	8	49	49	-	-	115		-	-	-	4,652	252	-
4a.1.5	Totals	-	3,779	43	108	2,177	215	-	1,091	7,413	4,480	-	2,933	13,010	631	-	-	-	569,060	53,681	-
4a.1.6	Scaffolding in support of decommissioning	_	2,865	22	10	188	30	_	755	3,870	3,870	_	_	1,012	89	-	_	_	51,216	23,719	_
4a.1	Subtotal Period 4a Activity Costs	144	24,706	17,607	3,470	6,506	17,096	556	23,908	93,993	91,059	-	2,933	41,476		-	673	-	3,937,863	188,606	5,187
	Additional Costs																				
4a.2.1 4a.2	Retired RPV Upper Internals Package Subtotal Period 4a Additional Costs	-	128 128	166 166	58 58	-	1,583 1,583	-	944 944	2,879 2,879	2,879 2,879	-	-	-	572 572	125 125	-	-	49,800 49,800	1,667 1,667	67 67
44.2	Subtotal Leriou 4a Additional Costs	-	120	100	96	-	1,505	-	544	2,019	2,019	-	-	-	512	120	-	-	45,800	1,007	07
	Collateral Costs	0			0		15		-	00	20				40				2 100	0	
4a.3.1 4a.3.3	Process decommissioning water waste Small tool allowance	3	241	4	8	-	17	-	7 36	39 277	39 249	-	28	-	40	-	-	-	2,408	8	-
4a.3.4	Prairie Island Indian Community Payments	-	-	_	-	-	_	1,660	-	1,660	-	1,660	-	-	-	-	_	-	-	_	-
4a.3	Subtotal Period 4a Collateral Costs	3	241	4	8	-	17	1,660	43	1,976	288	1,660	28	-	40	-	-	-	2,408	8	-
Period 4a	Period-Dependent Costs																				
4a.4.1	Decon supplies	100	-	-	-	-	-	-	25	125	125	-	-	-	-	-	-	-	-	-	-
4a.4.2	Insurance	-	-	-	-	-	-	643 4,395	64 439	708 4,834	708 2,954	1,881	-	-	-	-	-	-	-	-	-
4a.4.3 4a.4.4	Property taxes Health physics supplies	-	1,882	-	-	-	-	4,395	439 470	2,352	2,954 2,352	1,881	-	-	-	-	-	-	-	-	-
4a.4.5	Heavy equipment rental	-	3,325	_	-	-	-	-	499	3,824	3,824	-	-	-	-	-	-	-	-	-	-
4a.4.6	Disposal of DAW generated	-	-	70	29	-	293		85	477	477	-	-	-	3,556	-	-	-	71,113	116	-
4a.4.7 4a.4.8	Plant energy budget NRC ISFSI Fees	-	-	-	-	-	-	2,047 55	307 6	2,354 61	2,354	61	-	-	-	-	-	-	-	-	-
4a.4.8 4a.4.9	NRC ISFSI Fees NRC Fees	-	-	-	-	-	-	420	42	461	461	- 61	-	-	-	-	-	-	-	-	-
4a.4.10	Emergency Planning Fees	-	-	-	-	-	-	99	10	108	-	108	-	-	-	-	-	-	-	-	-
4a.4.11	Fixed Overhead	-	-	-	-	-	-	1,581	237	1,818	1,818	-	-	-	-	-	-	-	-	-	-
4a.4.12 4a.4.13	Liquid Radwaste Processing Equipment/Services ISFSI Operating Costs	-	-	-	-	-	-	565 74	85 11	649 86	649	86	-	-	-	-	-	-	-	-	-
4a.4.13 4a.4.14	Railroad Track Maintenance	-	-	-	-	-	-	83	12	96	96	-	-	-			-		-	-	-
4a.4.15	Remedial Actions Surveys	-	-	-	-	-	-	1,489	223	1,712	1,712	-	-	-	-	-	-	-	-	-	-
4a.4.16	Security Staff Cost	-	-	-	-	-	-	5,911	887	6,798	5,159	1,638	-	-	-	-	-	-	-	-	91,140
4a.4.17 4a.4.18	DOC Staff Cost Utility Staff Cost	-	-	-	-	-	-	17,103 21,408	2,565 3,211	19,668 24,619	19,668 23,856	763	-	-	-	-	-	-	-		189,200 337,712
4a.4.16 4a.4	Subtotal Period 4a Period-Dependent Costs	100	5,207	70	29	-	293	55,871	9,179	70,749	66,212	4,537	-	-	3,556	-	-	-	71,113	116	
4a.0	TOTAL PERIOD 4a COST	246	30,282	17,847	3,564	6,506	18,989	58,087	34,074	169,596	160,439	6,196	2,961	41,476	33,394	125	673	-	4,061,184	190,397	623,305
PERIOD	4b - Site Decontamination																				
Period 4b	Direct Decommissioning Activities																				
4b.1.1	Remove spent fuel racks	314	35	86	41	-	703	-	356	1,535	1,535	-	-	-	2,092	-	-	-	132,919	576	-
	of Plant Systems																				
	ADT & Misc Ventilation	=	22 62	1 2	1 6	26	3	-	10	63 237	63 237	-	-	153		-	-	-	6,803	325 906	-
4b.1.2.2 4b.1.2.3	Aux Bldg Normal Ventilation Aux Bldg Special Ventilation	-	62 12	2	6	116 12	13 2	-	37 5	237 32	237 32	-	-	692 70		-	-	-	30,595 3,234	906 176	-
4b.1.2.4	Battery Rm Special Ventilation	-	2	-	-	- 12	. "	-	0	2	- 52	-	2	-	-	-	-	-		24	-
4b.1.2.5	Boron Recycle	-	3	0	0	0	3	-	2	9	9	-	-	3	9	-	-	-	700	45	-
4b.1.2.6	Chemical & Volume Control	-	858	62	57	394	677	-	458 0	2,507	2,507	-		2,356	1,977	-	-	-	223,753	11,575	-
4b.1.2.7 4b.1.2.8	Cold Chemical Lab Ventilation Component Cooling - RCA	-	647	25	88	2,007	-	-	479	3,246	3,246	-	1	11,996	-	-	-	-	487,169	9 8,583	-
4b.1.2.9	Containment Cooling	-	35	-	-	2,007	-	-	5	40	5,240	-	40	-	-	-	-	-	407,103	502	-
4b.1.2.10	Containment Cooling - RCA	-	302	6	20	459	-	-	148	934	934	-	-	2,743		-	-	-	111,390	3,949	-
	Containment Hydrogen Control - RCA	-	36 194	0 3	1	24 243	-	-	13 87	74 529	74	-	-	141		-	-	-	5,742	494	-
	Containment Spray - RCA Containment Ventilation	-	194 211	3 23	11 49	243 790	243	-	87 242	538 1,558	538 1,558	-	-	1,453 4,721	722	-	-	-	59,019 237,643	2,617 3,016	-
	Control/Relay/Cmptr Rm Vent	-	28	1	2	44	7	-	16	98	98	-	-	260		-	-	-	11,878	406	-
4b.1.2.15	Cooling Water	-	159	-	-	-	-	-	24	183	-	-	183	-	-	-	-	-	-	2,344	-
	Cooling Water - RCA	=	476	17	62	1,412	-	-	342	2,310	2,310	-	-	8,442		-	-	-	342,822	6,311	=
	Cranes/Hoists/Elevators - RCA D3 Emergency Diesel	-	3 10	0	1	17	-	-	4 2	25 12	25	-	12	103	-	-	-	-	4,184	48 141	-
	D4 Emergency Diesel	-	10	-	-	-	-		2	12	-	-	12		-	-	-	-	-	141	-

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Table J-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(111)	, asamas c	or 2020 Donars	,											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Burial	Volumes		Burial /		Utility and
Activity		Decon				Processing	Disposal	Other	Total	Total	Lic. Term.	Management	Restoration	Volume	Class A	Class B		GTCC	Processed	Craft	Contractor
Index	Activity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
Dienocal	of Plant Systems (continued)																				
	D5 Emergency Diesel	_	0	_	_	-	_	-	0	0	-	_	0	_	_	_	-	-	_	5	-
	Electrical - Clean	-	1,714	-	-	-	-	-	257	1,972	-	-	1,972	-	-	_	-	-	_	24,276	-
	Electrical - Contaminated	-	430	5	16	334	25	-	167	978	978	-	-	1,997	75	-	-	-	85,887	5,813	-
	Electrical - Contaminated - Fuel Pool	-	184	2	7	145	11	-	72	421	421	-	-	864	33	-	-	-	37,167	2,488	-
	Electrical - Decontaminated Electrical - Decontaminated - Fuel Pool	÷	2,955 1,269	38 17	138 59	3,138 1,350	-	-	1,234 530	7,503 3,225	7,503 3,225	-	-	18,753 8,069	-	-	-	-	761,569 327,668	38,423 16,495	-
	Filter Rm Ventilation		1,203	0	0	1,550	0	-	2	10	10	-	-	24	1	-	-	-	1,017	61	-
	Fire Protection & Detection	=	204	-	-		-	-	31	235	-	-	235	-		-	-	-	-,	3,009	-
	Fire Protection & Detection - RCA	=	246	4	13	306	-	-	110	679	679	-	-	1,828	-	-	-	-	74,245	3,134	-
	Fire Protection & Detection - RCA Fuel P	-	37	1	2	48	-	-	17	105	105	-	-	286	-	-	-	-	11,622	476	-
	Fuel Handling Fuel Oil	÷	66	1	2	34	17	-	26 0	146	146	-	- 1	200	49	-	-	-	11,273	983	-
	HVAC - Clean		151	-	-	-	-	-	23	174	-	-	174	-	-	-	-	-	-	2,373	-
	HVAC - Contaminated	=	1,112	29	87	1,798	136	-	598	3,759	3,759	-		10,745	405	-	-	-	462,103	14,282	-
	HVAC - Contaminated - Fuel Pool	-	499	13	39	808	61	-	268	1,689	1,689	-	-	4,828	182	-	-	-	207,612	6,417	-
	Heating	-	322	- ,	-	-	-	-	48	370	-	-	370		-	-	-	-	-	4,804	-
	Heating - RCA Hot Lab & Sample Rm Ventilation	-	337 17	4 0	14 1	319 18	1	-	135	809 46	809 46	-	-	1,907 107	- 4	-	-	-	77,458 4,622	4,086 255	-
	Incore Instrumentation	-	27	1	2	10	20	-	13	73	46 73	-	-	60	58	_	-	-	6,143	412	-
	Misc Drains & Vents	-	213	12	12	77	145	-	104	563	563	-	-	458	426	-	-	-	46,079	2,841	-
	Misc Lab & Service Areas Vent	-	118	8	8	62	84	-	62	342	342	-	-	370	244	-	-	-	30,899	1,537	-
	Miscellaneous Gas	-	72	-		-	-	-	11	83	-	-	83	-	-	-	-	-	-	1,073	-
	Miscellaneous Gas - RCA Radiation Monitoring	-	134 7	1	4	100	-	-	49	289	289	-	- 0	600	-	-	-	-	24,378	1,636 111	-
	Radiation Monitoring - RCA	-	65	1	2	53		-	25	145	145	-	-	316		-	-	-	12,826	782	-
	Reactor Coolant	=	216	20	16	38	249	-	126	666	666	-	=	229	730	-	-	-	56,440	2,891	-
	Reactor Hot Sampling	-	116	11	7	9	108	-	60	311	311	-	-	54	312	-	-	-	22,678	1,499	-
	Reactor Makeup	-	41	-	-		-	-	6	47	-	-	47	-	-	-	-	-	-	583	-
	Reactor Makeup - RCA Reactor Vessel	<u> </u>	4 16	0	0	5 4	- 5	-	2	11 32	11 32	-	=	28 22	14	-	-	-	1,148 1,816	47 225	-
	Residual Heat Removal		354	84	86	477	1,102	-	457	2,562	2,562		-	2,853	3,244	-	-	-	324,232	5,039	-
	Safeguards Chilled Water	=	5	-	-	-		-	1	6	-,502	-	6	2,000		-	-	-	-	75	-
	Safeguards Chilled Water - RCA	-	5	0	0	4	-	-	2	11	11	-	-	26	-	-	-	-	1,045	51	-
	Safety Injection	÷	793	42	72	1,117	395	-	479	2,898	2,898	-	-	6,676	1,161	-	-	-	345,708	11,029	-
	Sampling Shield Bldg Ventilation	<u> </u>	48 108	3 13	2 25	6 339	32 163	-	22 124	113 771	113 771	-	=	37 2,028	93 484	-	-	-	7,628 113,139	645 1,555	-
	Spent Fuel Pool Cooling	-	33	3	2	6	37	-	19	101	101	-	-	39	107	-	-	-	8.481	427	- -
	Spent Fuel Pool Normal Ventilation	-	24	1	2	44	4	-	14	90	90	-	-	265	12	-	-	-	11,505	352	-
	Station & Instrument Air	-	161	-	-	-	-	-	24	185	-	-	185	-	-	-	-	-	-	2,424	-
	Station & Instrument Air - RCA	-	299	3	12	272	-	-	118	704	704	-	-	1,625	-	-	-	-	65,986	3,638	-
	Turbine Bldg Traps & Drains Turbine Bldg Traps & Drains - RCA	-	30 30	- 0	- 1	30	-	-	5 12	35 73	73	-	35	180	-	-	-	-	7,321	462 344	-
	Turbine Bldg Ventilation	-	46	-	-	-	-	-	7	53	-	_	53	-	-	-	-		7,021	655	-
4b.1.2.64	Unit Coolers	-	23	-	-	-	-	-	3	26	-	-	26	-	-	-	-	-	-	332	-
	Unit Coolers - RCA	-	56	0	2	39	-	-	20	117	117	-	-	232	-	-	-	-	9,413	690	-
	Waste Gas Disposal	-	438 1,642	43 116	45 100	410 612	464 1,234	-	298 837	1,699 4,541	1,699 4,541	-	-	2,453 3,655	1,358 3,594	-	-	-	187,339 381,754	5,879 22,011	-
	Waste Liquid Disposal Waste Solid Disposal	-	1,642	116	100	65	1,234	-	837 79	4,541	4,541	-	-	3,655 389	3,594	-	-	-	381,754 41,177	1,781	-
4b.1.2	Totals	-	17,877	633	1,092	17,625	5,377	-	8,385	50,989	47,545	-	3,444	105,339	15,761	-	_	-	5,294,310	240,033	-
													,								
4b.1.3	Scaffolding in support of decommissioning	-	4,297	33	15	281	45	-	1,133	5,804	5,804	-	-	1,518	134	-	-	-	76,824	35,578	-
	nination of Site Buildings																				
4b.1.4.1		1,096	2,528	240	1,236	373	7,080	-	3,215	15,768	15,768	-	-	2,230	67,331	-	-	-	3,286,725	45,740	-
	Auxiliary Packwash Wasta Passiving Tank	1,168	375	23	117	177	648	-	886	3,395	3,395	-	-	1,060	6,118	-	-	-	332,495	21,235	-
4b.1.4.3 4b.1.4.4	Backwash Waste Receiving Tank Drum Transfer & Truck Loading Enclosure	16	25 8	3 1	17 3	- 3	97 14	-	33 15	175 59	175 59	-	-	19	929 135	-	-	-	43,896 7,118	266 328	-
4b.1.4.5	LLRW Storage Enclosure	111	48	3	17	6	96	-	95	377	377	-	-	38	920	-	-	-	44,971	2,151	-
4b.1.4.6	Radwaste	50	21	1	8	7	43	-	43	174	174	-	-	42	412	-	-	-	21,136	964	-
4b.1.4.7	Resin Disposal	15	11	1	3	14	14	-	16	72	72	-	-	83	124	-	-	-	9,271	340	-
4b.1.4.8	Fuel Handling of Aux Building	924	1,015	13	45	404	195	-	833 5 197	3,430	3,430	-	-	2,417	1,652	-	-	-	177,755	27,145	-
4b.1.4	Totals	3,380	4,031	285	1,445	985	8,187	-	5,137	23,450	23,450	-	-	5,889	77,619	-	-	-	3,923,368	98,170	-
4b.1.5	Prepare/submit License Termination Plan	-	-	-	-	-	-	225	34	259	259	-	-	-	-	-	-	-	-	-	1,751
4b.1.6	Receive NRC approval of termination plan									a											
4b.1	Subtotal Period 4b Activity Costs	3,693	26,240	1,036	2,594	18,892	14,312	225	15,045	82,037	78,593	-	3,444	112,746	95,607	_	_	_	9,427,420	374,358	1,751
10.1		0,000	20,240	1,000	2,004	10,002	11,012	220	10,040	02,007	10,000		0,111	112,140	55,001				0, 221, 420	314,000	1,101

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Table J-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(1110	ousumus o	1 2020 Donars	-,											
						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed	-		Volumes		Burial /		Utility and
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet		Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
																			,		
Period 4b 4b.2.1	Additional Costs License Termination Survey Planning	_	_	_	_	_	_	1,037	311	1,348	1,348	-	-	_	_	_	-	_	_	_	6,240
4b.2.2	Excavation of Underground Services	-	1,175	-	-	-	-	225	328	1,728	1,728	-	-	-	-	-	-	-	-	7,411	-,
4b.2.3	Operational Equipment	-		11	36	606	-	-	97	751	751	-	-	5,880		-	-	-	147,000	16	
4b.2	Subtotal Period 4b Additional Costs	-	1,175	11	36	606	-	1,262	736	3,827	3,827	-	-	5,880	-	-	-	-	147,000	7,427	6,240
	Collateral Costs	_																			
4b.3.1 4b.3.3	Process decommissioning water waste Small tool allowance	7	443	12	21	-	48	-	20 66	107 509	107 509	-	-	-	109	-	-	-	6,547	21	-
4b.3.4	Decommissioning Equipment Disposition	-	- 440	130	67	1,112	178	-	234	1,722	1,722	-	-	6,000		-	-	-	303,608	147	-
4b.3.5	Prairie Island Indian Community Payments		-	-	-	-	-	2,225	-	2,225	-	2,225	-	-	-	-	-	-	-	-	-
4b.3	Subtotal Period 4b Collateral Costs	7	443	142	88	1,112	225	2,225	320	4,563	2,338	2,225	-	6,000	638	-	-	-	310,155	168	-
	Period-Dependent Costs																				
4b.4.1 4b.4.2	Decon supplies Insurance	1,449	-	-	-	-	-	862	362 86	1,811 949	1,811 949	-	-	-	-	-	-	-	-	-	-
4b.4.3	Property taxes	-	-	-	-		-	5,715	572	6,287	3,785	2,502	-	-	-				-	-	-
4b.4.4	Health physics supplies	-	3,213	-	-	-	-	-	803	4,016	4,016	-	-	-	-	-	-	-	-	-	-
4b.4.5 4b.4.6	Heavy equipment rental Disposal of DAW generated	-	4,577	116	47	-	482	-	687 139	5,263 784	5,263 784	-	-	-	5,851	-	-	-	117,027	191	-
4b.4.6 4b.4.7	Plant energy budget	-	-	-	- 47	-	402	2,165	325	2,490	2,490	-	-	-	5,651	-	-	-	111,021	- 191	-
4b.4.8	NRC ISFSI Fees	-	-	-	-	-	-	74	7	81	-	81	-	-	-	-	-	-	-	-	-
4b.4.9	NRC Fees	-	-	-	-	-	-	562	56	618	618	-	-	-	-	-	-	-	-	-	-
4b.4.10 4b.4.11	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	132 2,118	13 318	$\frac{145}{2,436}$	2,436	145	-	-	-	-	-	-	-	-	-
4b.4.12	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	757	113	870	870	-	-	-	-	-	-	-	-	-	-
4b.4.13 4b.4.14	ISFSI Operating Costs Railroad Track Maintenance	-	-	-	-	-	-	100 111	15 17	115 128	128	115	-	-	-	-	-	-	-	-	-
4b.4.14 4b.4.15	Remedial Actions Surveys	-	-	-	-	-	-	1.995	299	2,294	2,294	-	-	-	-	-	-	-	-	-	-
4b.4.16	Security Staff Cost	-	-	-	-	-	-	10,435	1,565	12,000	8,988	3,012	-	-	-	-	-	-	-	-	160,203
4b.4.17	DOC Staff Cost	-	-	-	-	-	-	22,641 28,347	3,396	26,038 32,600	26,038	1 000	-	-	-	-	-	-	-	-	248,175
4b.4.18 4b.4	Utility Staff Cost Subtotal Period 4b Period-Dependent Costs	1,449	7,790	116	47	-	482	76,016	4,252 13,026	98,926	31,361 91,832	1,239 7,094	-		5,851	-	-	-	117,027	191	440,789 849,167
4b.0	TOTAL PERIOD 4b COST	5,149	35,647	1,305	2,766	20,610	15,020	79,729	29,128	189,353	176,590	9,319	3,444	124,626	102,096		_	_	10,001,600	382,144	857,159
		0,143	35,047	1,505	2,700	20,010	10,020	10,120	23,120	105,555	170,000	5,515	0,444	124,020	102,030	-	-		10,001,000	302,144	001,100
PERIOD	4f - License Termination																				
	Direct Decommissioning Activities							400													
4f.1.1 4f.1.2	ORISE confirmatory survey Terminate license	=	-	-	-	-	-	166	50	216	216	-	-	-	-	-	-	-	-	-	-
4f.1.2	Subtotal Period 4f Activity Costs	-	-	-	-	-	-	166	50	216	216	-	-	-		-	-	-	-	-	-
Davied 4f	Additional Costs																				
4f.2.1	License Termination Survey	-	-	-	-	_	_	7,041	2,112	9,154	9,154	-	-	-	-	_	-	-	-	100,895	3,120
4f.2	Subtotal Period 4f Additional Costs	-	-	-	-	-	-	7,041	2,112	9,154	9,154	-	-	-	-	-	-	-	-	100,895	3,120
Period 4f	Collateral Costs																				
4f.3.1	DOC staff relocation expenses	-	-	-	-	-	-	1,264	190	1,454	1,454	-	-	-	-	-	-	-	-	-	-
4f.3.2 4f.3	Prairie Island Indian Community Payments Subtotal Period 4f Collateral Costs	-	-	-	-	-	-	934 2,198	190	934 2,388	1,454	934 934	-	-	-	-	-	-	-	-	-
								2,100	150	2,000	1,101	004									
	Period-Dependent Costs							0.00	0.0	000		000									
4f.4.1 4f.4.2	Insurance Property taxes	-	-	-	-	-	-	362 2,306	36 231	398 2,537	1,469	398 1,068	-	-	-	-	-	-	-	-	-
4f.4.3	Health physics supplies	-	710	-	-	-	-	-	178	888	888	-	-	-	-	-	-	-	-	-	-
4f.4.4	Disposal of DAW generated	=	-	7	3	-	28	- 0.40	8	45 279	45	-	-	-	334	-	-	-	6,685	11	-
4f.4.5 4f.4.6	Plant energy budget NRC ISFSI Fees	-	-	-	-	-	-	243 31	36 3	279 34	279	34	-	-	-	-	-	-	-	-	-
4f.4.7	NRC Fees	-	-	-	-	-	-	263	26	290	290	-	-	-	-	-	-	-	-	-	-
4f.4.8 4f.4.9	Emergency Planning Fees Fixed Overhead	-	-	-	-	-	-	55 890	6 133	61	1.000	61	-	-	-	-	-	-	-	-	-
4f.4.9 4f.4.10	ISFSI Operating Costs	-	-	-	-	-	-	890 42	133	1,023 48	1,023	48	-	-	-		-	-	-	-	-
4f.4.11	Railroad Track Maintenance	-	-	-	-	-	-	47	7	54	54	-	-	-	-	-	-	-	-	-	-
4f.4.12 4f.4.13	Security Staff Cost DOC Staff Cost	-	-	-	-	-	-	1,835 4,238	275 636	2,111 4,874	927 4,874	1,184	-	-	-	-	-	-	-	-	27,614 46,283
4f.4.13 4f.4.14	Utility Staff Cost	-	-	-	-		-	4,238 4,011	636	4,874 4,613	4,874 4,175	438	-	-	-	-	-	-	-	-	46,283 59,507
4f.4	Subtotal Period 4f Period-Dependent Costs	=	710	7	3	-	28	14,324	2,183	17,254	14,022	3,232	-	-	334	-	_	_	6,685	11	133,404

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Table J-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

							(		1 2020 Donars	-,											
Activity Index		Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Class A Cu. Feet	Class B	Volumes Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
4f.0	TOTAL PERIOD 4f COST	-	710	7	3	-	28	23,730	4,535	29,012	24,846	4,166	-	-	334	-	-	-	6,685	100,906	136,524
PERIOD	0 4 TOTALS	5,395	66,639	19,159	6,333	27,115	34,036	161,545	67,737	387,961	361,874	19,681	6,405	166,102	135,824	125	673	-	14,069,470	673,447	1,616,988
PERIOD	5b - Site Restoration																				
Period 5b	Direct Decommissioning Activities																				
	on of Remaining Site Buildings								205	¥ 0.40			<b>7</b> 040							44.050	
	Reactor Auxiliary	-	4,645 1,993	-	-	-	-	-	697 299	5,342 2,291	-	-	5,342 2,291	-	-	-	-	-	-	44,679 11,902	-
5b.1.1.2 5b.1.1.3			1,555	-	-	-	-	-	299 1	2,231	-	-	2,231	-	-		-	-	-	11,502	-
5b.1.1.4		-	130	_	_	_	-	-	19	149	-	_	149	_	_	_	-	-	-	1,405	-
5b.1.1.5	D3/D4 Emergency Generator	-	14	_	_	_	-	-	2	16	-	-	16	-	-	-	-	-	-	84	-
5b.1.1.6	Drum Transfer & Truck Loading Enclosure	-	20	-	-	-	-	-	3	24	-	-	24	-	-	-	-	-	-	221	-
5b.1.1.7	Hydrogen House	-	6	-	-	-	-	-	1	7	-	-	7	-	-	-	-	-	-	47	-
5b.1.1.8	LLRW Storage Enclosure	-	128	-	-	-	-	-	19	147	-	-	147	-	-	-	-	-	-	853	-
5b.1.1.9		-	2,617	-	-	-	-	-	393	3,009	-	-	3,009	-	-	-	-	-	-	22,582	-
	Radwaste	-	176	-	-	-	-	-	26	202	-	-	202	-	-	-	-	-	-	1,400	-
	Resin Disposal	-	14	-	-	-	-	-	2	16	-	-	16	-	-	-	-	-	-	120	-
	Structures below 3' below grade Sulfuric Acid Tank Enclosure	-	1,785	-	-	-	-	-	268	2,052	-	-	2,052	-	-	-	-	-	-	9,238 35	-
	Turbine	-	2,140	-	-	-	-	-	321	2,461	-	-	2.461	-	-	-	-	-	-	21,997	-
	Turbine Pedestal	_	365				_		55	420			420							1,857	-
	Warehouse #2	-	24	-	-	-	-	-	4	27	-	-	27	-	-	-	-	-	-	213	_
	Waste Neutralizing Tank House	-	7	_	-	-	-	-	1	8	-	-	8	-	-	_	-	-	-	56	_
	Waste Oil Storage	-	9	-	-	-	-	-	1	10	-	-	10	-	-	-	-	-	-	70	-
	Water Treatment	-	324	-	-	-	-	-	49	373	-	-	373	-	-	-	-	-	-	2,690	-
5b.1.1.20	Fuel Handling of Aux Building	-	1,095	-	-	-	-	-	164	1,259	-	-	1,259	-	-	-	-	-	-	8,240	-
5b.1.1	Totals	-	15,501	-	-	-	-	-	2,325	17,826	-	-	17,826	-	-	-	-	-	-	127,723	-
Site Close	eout Activities																				
5b.1.2	Remove Rubble	-	1,517	-	-	-	-	-	228	1,745	-	-	1,745	-	-	-	-	-	-	7,408	-
5b.1.3	Grade & landscape site	-	448	-	-	-	-	-	67	515	-	-	515	-	-	-	-	-	-	921	-
5b.1.4	Final report to NRC	-	-	-	-	-	-	86	13	99	99	-	-	-	-	-	-	-	-	-	667
5b.1	Subtotal Period 5b Activity Costs	-	17,466	-	-	-	-	86	2,633	20,185	99	-	20,086	-	-	-	-	-	-	136,051	667
	Additional Costs																				
5b.2.1	Clean Concrete Disposal	-	4,912	-	-	-	-	10	738	5,660	-	-	5,660	-	-	-	-	-	-	18,372	-
5b.2.2	Intake Structure Cofferdam	-	442	-	-	-	-	-	66	508	-	-	508	-	-	-	-	-	-	3,552	-
5b.2.3	Construction Debris	-		-	-	-	-	2,150	323	2,473	-	-	2,473	-	-	-	-	-	-		-
5b.2.4	Backfill	-	9,257	-	-	-	-	-	1,388	10,645	-	-	10,645	-	- 0.000	-	-	-		9,327	-
5b.2.5 5b.2	Disposition of Original Casks Subtotal Period 5b Additional Costs	-	24 14,634	80 80		-	2,390 2,390	2,160	728 3,244	3,640 22,926	3,640 3,640	-	19,286	-	8,929 8,929	-	-	-	1,059,612 1,059,612	146 31,397	-
		-	14,054	80	416	-	2,330	2,100	3,244	22,320	3,040	-	15,260	-	0,323	-	-	-	1,055,012	31,331	-
Period 5b 5b.3.1	o Collateral Costs Small tool allowance		213						32	245	_		245								
5b.3.1	Spent Fuel Capital and Transfer	-	213	-	-	-	-	3,821	573	4,394	-	4,394	240	-	-	-	-	-	-	-	-
5b.3.3	Prairie Island Indian Community Payments	-	-	_	-	-	-	2,649	-	2,649	-	2,649	-	-	-	-	-	-	-	-	-
5b.3	Subtotal Period 5b Collateral Costs	-	213	-	-	-	-	6,470	605	7,288	-	7,043	245	-	-	-	-	-	-	-	-
Dowland 5h	Period-Dependent Costs																				
5b.4.1	Period-Dependent Costs Insurance	-	_	-	-	-	-	513	51	565	-	565	-	-	_	-	_	_	-	_	-
5b.4.2	Property taxes	-	-	-	-	-	-	5,904	590	6,494	-	2,663	3,831	-	_	-	_		-	-	-
5b.4.3	Heavy equipment rental	-	7,144	-	-	-	-		1,072	8,215	-	-,556	8,215	-	-	-	-	-	-	-	-
5b.4.4	Plant energy budget	-		_	-	-	-	344	52	395	-	395	-,	-	-	-	-	-	-	-	-
5b.4.5	NRC ISFSI Fees	-	-	-	-	-	-	243	24	268	-	268	-	-	-	-	-	-	-	-	-
5b.4.6	Emergency Planning Fees	-	-	-	-	-	-	157	16	173	-	173	-	-	-	-	-	-	-	-	-
5b.4.7	Fixed Overhead	-	-	-	-	-	-	1,024	154	1,178	-	781	397	-	-	-	-	-	-	-	-
5b.4.8	ISFSI Operating Costs	-	-	-	-	-	-	119	18	136	-	136	-	-	-	-	-	-	-	-	-
5b.4.9	Railroad Track Maintenance	-	-	-	-	-	-	133	20	152	(0)	97	56	-	-	-	-	-	-	-	-
5b.4.10	Security Staff Cost	-	-	-	-	-	-	4,976 10,921	746 1,638	5,722 $12,559$	0	5,310	412 12,559	-	-	-	-	-	-	-	74,431
5b.4.11 5b.4.12	DOC Staff Cost Utility Staff Cost	-	-	-	-	-	-	5,170	1,638 776	5,946	-	1,278	12,559 4,668	-	-	-	-	-	-	-	116,885 76,637
5b.4.12 5b.4	Subtotal Period 5b Period-Dependent Costs	-	7,144	-	-	-	-	29,504	5,156	41,804	0	11,666	30,139	-	-	-	-	-	-	-	267,952
	-												ŕ								
5b.0	TOTAL PERIOD 5b COST	-	39,457	80	418	-	2,390	38,220	11,638	92,203	3,739	18,708	69,756	-	8,929	-	-	-	1,059,612	167,448	268,620

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Table J-2
Prairie Island SAFSTOR Unit 2
SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage
(Thousands of 2020 Dollars)

								(Th	ousands o	of 2020 Dollars	s)											
							Off-Site	LLRW				NRC	Spent Fuel	Site	Processed		Rurial '	Volumes		Burial /		Utility and
Activity			Decon	Removal	Packaging	Transport	Processing		Other	Total	Total	Lic. Term.	Management		Volume	Class A	Class B	Class C	GTCC	Processed	Craft	Contractor
Index	Ac	ctivity Description	Cost	Cost	Costs	Costs	Costs	Costs	Costs	Contingency	Costs	Costs	Costs	Costs	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Cu. Feet	Wt., Lbs.	Manhours	Manhours
PERIOD	5c - Fuel Storage Ope	erations/Shipping																				
Period 5c l	Direct Decommissioning	Activities																				
Period 5c	Collateral Costs																					
	Spent Fuel Capital and		-	-	-	-	-	-	445,840	66,876	512,716	-	512,716	-	-	-	-	-	-	-	-	-
	Prairie Island Indian C Subtotal Period 5c Coll		-	-	-	-	-	-	152,793 598,632	66,876	152,793 665,508	-	152,793 665,508	-	-	-	-	-	-	-	-	-
									000,002	00,010	000,000		000,000									
	Period-Dependent Costs Insurance								29,616	2,962	32,578	_	32,578									
	Property taxes		- -	-	-	-	-	-	169,412	16,941	186,354	-	186,354	-	-		-	-		-	-	-
5c.4.4	NRC ISFSI Fees		-	-	-	-	-	-	14,030	1,403	15,432	-	15,432	-	-	-	-	-	-	-	-	-
	Emergency Planning F	ees	-	-	-	-	-	-	9,068 19,930	907 2,990	9,974 22,920	-	9,974 22,920	-	-	-	-	-	-	-	-	-
	Fixed Overhead ISFSI Operating Costs		-		-	-	-		6,845	1,027	7,872	-	7,872	-	-	-	-			-	-	-
5c.4.8	Railroad Track Mainte		-	-	-	-	-	-	7,647	1,147	8,795	-	8,795	-	-	-	-	-	-	-	-	=
	Security Staff Cost		-	-	-	-	-	-	236,347	35,452	271,799	-	271,799	-	-	-	-	-	-	-	-	3,434,684 127,211
	DOC Staff Cost Utility Staff Cost		-	-	-	-	-	-	18,749 115,440	2,812 17,316	21,561 132,756	-	21,561 132,756	-	-	-	-	-	-	-	-	1,685,540
	Subtotal Period 5c Peri	od-Dependent Costs	-	-	-	-	-	-	627,085	82,956	710,041	-	710,041	-	-	-	-	-	-	-	-	5,247,434
5c.0	TOTAL PERIOD 5c CC	OST	-	-	-	-	-	-	1,225,717	149,832	1,375,549	-	1,375,549	-	-	-	-	-	-	-	-	5,247,434
PERIOD	5d - GTCC shipping																					
Period 5d	Direct Decommissioning	g Activities																				
Nuclear St	team Supply System Re	moval																				
	Vessel & Internals GT0		_	-	1,444	-	-	8,680	-	1,663	11,787	11,787	-	-	-	-	-	-	1,773	344,823	_	-
	Totals		-	-	1,444	-	-	8,680		1,663	11,787	11,787	-	-	-	-	-	-	1,773	344,823	-	-
5d.1	Subtotal Period 5d Acti	ivity Costs	-	-	1,444	-	-	8,680	-	1,663	11,787	11,787	-	-	-	-	-	-	1,773	344,823	-	-
	Collateral Costs																					
	Spent Fuel Capital and		-	-	-	-	-	-	28 48	4	32	-	32 48		-	-	-	-	-	-	-	-
	Prairie Island Indian C Subtotal Period 5d Coll		-	-		-	-	-	76	4	48 80	-	80 80		-	-	-	-	-	-	-	-
Period 5d	Period-Dependent Costs																					
	Insurance		-	-	-	-	-	-	9	1	10	10	-	-	-	-	-	-	-	-	-	-
	Property taxes		-	-	-	-	-	-	53	5	58	58	- 4	-	-	-	-	-	-	-	-	-
	NRC ISFSI Fees Emergency Planning F	ees	-	-	-	-	-	-	3	0	4 3	-	4 3	-	-	-	-	-	-	-	-	-
5d.4.6	Fixed Overhead		-	-	-	-	-	-	6	1	7	7	-	-	-	-	-	-	-	-	-	-
	Railroad Track Mainter Security Staff Cost	nance	-	-	-	-	-	-	$\frac{2}{74}$	0 11	3 85	3 85	-	-	-	-	-	-	-	-	-	1,077
	Utility Staff Cost		-		-		-		19	3	22	22	-	-	-					-	-	269
	Subtotal Period 5d Peri	iod-Dependent Costs	-	-	-	-	-	-	171	22	194	186	7	-	-	-	-	-	-	-	-	1,346
5d.0	TOTAL PERIOD 5d CO	OST	-	-	1,444	-	-	8,680	247	1,689	12,060	11,973	87	-	-	-	-	-	1,773	344,823	-	1,346
PERIOD	5e - ISFSI Decontami	nation																				
Period 5e	Direct Decommissioning	g Activities																				
	Additional Costs						_															
	License Termination IS Subtotal Period 5e Add		-	0		17 17		142 142		339 339	1,696 1,696	1,696 1,696	-	-	-	424 424		-	-	65,754 $65,754$	5,882 5,882	1,161 1,161
	Period-Dependent Costs																					
	Insurance Property taxes		-	-	-	-	-	-	93 56	23 14	116 69	116 69	-	-	-	-	•	•	-	-	-	-
	Plant energy budget			-		-	-	-	11	3	13		-	-	-	-	-	-	-	-	-	-
5e.4.4	Fixed Overhead		-	-	-	-	-	-	54	14	68	68	-	-	-	-	-	-	-	-	-	-
	Railroad Track Mainter Security Staff Cost	nance	-	-	-	-	-	-	21 174	5 43	26 217	26 217	-	-	-	-	-	-	-	-	-	2,500
5e.4.7	Utility Staff Cost		-	-	-	-	-	-	129	32	161	161	-	-	-	-	-	-	-	-	-	1,896
5e.4	Subtotal Period 5e Peri	iod-Dependent Costs	-	-	-	-	-	-	536	134	670	670	-	-	-	-	-	-	-	-	-	4,396

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Prairie Island Nuclear Generating Plant Decommissioning Cost Analysis

Table J-2 Prairie Island SAFSTOR Unit 2 SAFSTOR Decommissioning Cost Estimate with 200 Years of Spent Fuel Storage (Thousands of 2020 Dollars)

						Off-Site	LLRW				NRC	Spent Fuel	Site	Processed			Volumes		Burial /		Utility and
Activity Index	y Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Processing Costs	Disposal Costs	Other Costs	Total Contingency	Total Costs	Lic. Term. Costs	Management Costs	Restoration Costs	Volume Cu. Feet	Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Processed Wt., Lbs.	Craft Manhours	Contractor Manhours
5e.0	TOTAL PERIOD 5e COST	-	0	2	17	-	142	1,733	473	2,367	2,367	-	-	-	424	-	-	-	65,754	5,882	5,556
PERIOI	) 5f - ISFSI Site Restoration																				
Period 5f	Direct Decommissioning Activities																				
Period 5f 5f.2.1	Additional Costs  Demolition and Site Restoration of ISFSI	_	1,121	_	_		_	161	192	1,474			1.474	_	_			_		4,846	80
5f.2	Subtotal Period 5f Additional Costs	-	1,121	-	-	-	-	161	192	1,474	-	-	1,474	-	-	-	-	-	-	4,846	80
	Collateral Costs		_																		
5f.3.1 5f.3	Small tool allowance Subtotal Period 5f Collateral Costs	-	7	-	-	-	-	-	1	8 8	-	-	8	-	-	-	-	-	-	-	-
	Period-Dependent Costs																				
5f.4.2	Property taxes	-	-	-	-	-	-	28	3	31	-	-	31	-	-	-	-	-	-	-	-
5f.4.3 5f.4.4	Heavy equipment rental Plant energy budget	-	59	-	-	-	-	- c	9	68	-	-	68	-	-	-	-	-	-	-	-
5f.4.5	Fixed Overhead		-	-	-	-	-	28	4	32	-	-	32	-	-	-	-	-	-	-	-
5f.4.6	Railroad Track Maintenance	-	-	-	-	_	-	11	2	12	-	_	12	_	-	-	_	-	-	-	-
5f.4.7	Security Staff Cost	-	-	-	-	-	-	89	13	102	-	-	102	-	-	-	-	-	-	-	1,281
5f.4.8	Utility Staff Cost	-	-	-	-	-	-	55	8	63	-	-	63	-	-	-	-	-	-	-	795
5f.4	Subtotal Period 5f Period-Dependent Costs	-	59	-	-	-	-	216	40	315	-	-	315	-	-	-	-	-	-	-	2,076
5f.0	TOTAL PERIOD $5f$ COST	-	1,187	-	-	-	-	377	233	1,798	-	-	1,798	-	-	-	-	-	-	4,846	2,156
PERIOI	5 TOTALS	-	40,644	1,525	435	-	11,212	1,266,294	163,866	1,483,976	18,078	1,394,345	71,553	-	9,353	-	-	1,773	1,470,189	178,175	5,525,112
TOTAL (	COST TO DECOMMISSION	12.610	122,384	21,327	7,312	27,293	47.794	2,404,684	363.115	3.006.518	983,908	1.943.956	78,655	172,234	167.056	125	673	1.773	16.288.180	950.825	11,722,100

TOTAL COST TO DECOMMISSION WITH 13.74% CONTINGENCY:	\$3,006,518	thousands of 2020 dollars
TOTAL NRC LICENSE TERMINATION COST IS 32.73% OR:	\$983,908	thousands of 2020 dollars
SPENT FUEL MANAGEMENT COST IS 64.66% OR:	\$1,943,956	thousands of 2020 dollars
NON-NUCLEAR DEMOLITION COST IS 2.62% OR:	\$78,655	thousands of 2020 dollars
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	167,854	Cubic Feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	1,773	Cubic Feet
TOTAL SCRAP METAL REMOVED:	42,406	Tons
TOTAL CRAFT LABOR REQUIREMENTS:	950,825	Man-hours

End Notes: n/a - indicates that this activity not charged as decommissioning expense a - indicates that this activity performed by decommissioning staff 0 - indicates that this value is less than 0.5 but is non-zero A cell containing " - " indicates a zero value  $\frac{1}{2} \frac{1}{2} \frac{1}{$ 

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### APPENDIX K

### ISFSI DECOMMISSIONING

					<u>Page</u>
Prairie Isla	nd Nuclear Genera	ting Plant – Sc	enarios 1, 2,	5, and 6	K-2
Prairie Isla	nd Nuclear Genera	ting Plant – Sc	enarios 3, 4,	7, and 8	K-3

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# Table K-1 Prarie Island Nuclear Generating Plant Scenarios 1, 2, 5, & 6 ISFSI Decommissioning Cost Estimate

(thousands of 2020 dollars)

Activity Description	Removal Costs	Packaging Costs	Transport Costs	LLRW Disposal Costs	Other Costs	Total Costs	Burial Volume Class A (cubic feet)	Craft Manhours	Oversight and Contractor Manhours
Decommissioning Contractor									
Planning (characterization, specs and procedures)	-	-	-	-	189	189	-	-	976
Decontamination (activated disposition)	49	163	870	5,065	-	6,146	18,710	321	-
License Termination (radiological surveys)	-	-	-	-	1,020	1,020	-	7,203	-
Subtotal	49	163	870	5,065	1,209	7,355	18,710	7,524	976
Supporting Costs									
NRC and NRC Contractor Fees and Costs	-	-	-	-	469	469	-	-	1,153
Insurance	-	-	-	-	185	185	-	-	-
Property taxes	_	-	-	-	111	111	-	-	-
Plant energy budget	-	-	-	-	21	21	-	-	-
Fixed Overhead	-	-	-	-	108	108	-	-	-
Railroad Track Maintenance	-	-	-	-	41	41	-	-	-
Security Staff Cost	-	-	-	-	348	348	-	-	4,999
Utility Staff Cost	-	-	-	-	258	258	-	-	3,792
Subtotal	-	-	-	-	1,541	1,541	-	-	9,945
Total (w/o contingency)	49	163	870	5,065	2,751	8,896	18,710	7,524	10,921
Total (w/25% contingency)	61	204	1,087	6,331	3,438	11,121			

The application of contingency (25%) is consistent with the evaluation criteria referenced by the NRC in NUREG-1757 ("Consolidated Decommissioning Guidance, Financial Assurance, Recordkeeping, and Timeliness," U.S. NRC's Office of Nuclear Material Safety and Safeguards, NUREG-1757, Vol. 3, Rev. 1, February 2012)

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## Table K-2 Prarie Island Nuclear Generating Plant Scenarios 3, 4, 7, & 8 ISFSI Decommissioning Cost Estimate

(thousands of 2020 dollars)

Activity Description	Removal Costs	Packaging Costs	Transport Costs	LLRW Disposal Costs	Other Costs	Total Costs	Burial Volume Class A (cubic feet)	Craft Manhours	Oversight and Contractor Manhours
Decommissioning Contractor									
Planning (characterization, specs and procedures)	-	-	-	-	299	299	-	-	1,168
Decontamination (activated disposition)	0	3	33	283	-	320	848	29	-
License Termination (radiological surveys)	-	-	-	-	1,619	1,619	-	11,734	-
Subtotal	0	3	33	283	1,918	2,238	848	11,763	1,168
Supporting Costs									
NRC and NRC Contractor Fees and Costs	-	-	-	-	476	476	-	-	1,153
Insurance	-	-	-	-	185	185	_	-	-
Property taxes	-	-	-	-	111	111	-	-	-
Plant energy budget	-	-	-	-	21	21	-	-	-
Fixed Overhead	-	-	-	-	108	108	-	-	-
Railroad Track Maintenance	-	-	-	-	41	41	_	-	-
Security Staff Cost	-	-	-	-	348	348	-	-	4,999
Utility Staff Cost	-	-	-	-	258	258	-	-	3,792
Subtotal	-	-	-	-	1,549	1,549	-	-	9,945
Total (w/o contingency)	0	3	33	283	3,467	3,787	848	11,763	11,113
Total (w/25% contingency)	0	4	41	354	4,333	4,733			

The application of contingency (25%) is consistent with the evaluation criteria referenced by the NRC in NUREG-1757 ("Consolidated Decommissioning Guidance, Financial Assurance, Recordkeeping, and Timeliness," U.S. NRC's Office of Nuclear Material Safety and Safeguards, NUREG-1757, Vol. 3, Rev. 1, February 2012)