DOCKET NO. _____

APPLICATION OF SOUTHWESTERN PUBLIC SERVICE COMPANY FOR AUTHORITY TO CHANGE RATES	**§ § §**	**PUBLIC UTILITY COMMISSION OF TEXAS**

DIRECT TESTIMONY
of
DAVID A. LOW

on behalf of

SOUTHWESTERN PUBLIC SERVICE COMPANY

(Filename: LowRRDirect.doc)

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GLOSSARY OF ACRONYMS AND DEFINED TERMS

Acronym/Defined Term	Meaning
Btu	British thermal unit
EAF	Equivalent Availability Factor
ES	Energy Supply business area including both native and affiliate activities
FERC	Federal Energy Regulatory Commission
FOR	Forced Outage Rates
IM	Integrated Marketplace
kWh	kilowatt hour
LP	Low Pressure
M&D	Monitoring and Diagnostic
MW	megawatt
MWh	megawatt hour
NERC	North American Electric Reliability Corporation
NERC/GADS	North American Electric Reliability Corporation/Generating Availability Data System
NMPRC	New Mexico Public Regulation Commission
O&M	Operation and maintenance
OEM	Original Equipment Manufacturer

Acronym/Defined Term	Meaning
Operating Companies	Northern States Power Company, a Minnesota corporation; Northern States Power Company, a Wisconsin corporation; Public Service Company of Colorado, a Colorado corporation; and SPS.
Operating Company	One of the Operating Companies
PTT	Productivity through Technology
RFP	Rate Filing Package
SMWA	Service Maintenance and Warranty Agreement
SPP	Southwest Power Pool, Inc.
SPS	Southwestern Public Service Company, a New Mexico corporation
Test Year	April 1, 2018 through March 31, 2019
Total Company or total company	Total SPS (before any jurisdictional allocation)
Update Period	April 1, 2019 through June 30, 2019
Updated Test Year	July 1, 2018 through June 30, 2019
Vestas	Vestas-American Wind Technology, Inc.
VP	Vice President
Wind Lease Agreement	Lease and easement agreement between SPS and a landowner related to the Hale Wind Project
Xcel Energy	Xcel Energy Inc.
XES	Xcel Energy Services Inc.

LIST OF ATTACHMENTS

Attachment	**Description**
DAL-RR-1	Energy Supply Organization Chart (*Non-native format*)
DAL-RR-2(V)(HS)	Service, Maintenance, and Warranty Agreement between Southwestern Public Service Company and Vestas-American Wind Technology, Inc. dated as of June 15, 2018 (*Non-native format*)
DAL-RR-3(HS)	Wind and Easement Lease Agreement (*Non-native format*)
DAL-RR-4	Tolk Station Annual Equivalent Availability Factors (*Filename*: DAL-RR-4.xls)
DAL-RR-5	Harrington Station Annual Equivalent Availability Factors (*Filename*: DAL-RR-5.xls)
DAL-RR-6	Gas Units (200-299 MW) Annual Equivalent Availability Factors (*Filename*: DAL-RR-6.xls)
DAL-RR-7	Tolk Station Annual Forced Outage Rates (*Filename*: DAL-RR-7.xls)
DAL-RR-8	Harrington Station Annual Forced Outage Rates (*Filename*: DAL-RR-8.xls)
DAL-RR-9	Gas Units (200-299 MW) Forced Outage Rates (*Filename*: DAL-RR-9.xls)
DAL-RR-10	SPS Native Operation and Maintenance Expenses (Filename: DAL-RR-10.xlsx)

Attachment	**Description**
DAL-RR-A (Updated Test Year)	Summary of XES Expenses to SPS by Affiliate Class and Billing Method (*Filename:* DAL-RR-ABCD.xlsx)
DAL-RR-B(CD) (Updated Test Year)	XES Expenses by Affiliate Class, Activity, Billing Method and FERC Account (*Filename:* DAL-RR-ABCD.xlsx)
DAL-RR-C (Updated Test Year)	Exclusions from XES Expenses to SPS by Affiliate Class and FERC Account (*Filename:* DAL-RR-ABCD.xlsx)
DAL-RR-D (Updated Test Year)	Pro Forma Adjustments to XES Expenses by Affiliate Class and FERC Account (*Filename:* DAL-RR-ABCD.xlsx)

DIRECT TESTIMONY
OF
DAVID A. LOW

I. WITNESS IDENTIFICATION AND QUALIFICATIONS

Q. Please state your name and business address.

A. My name is David A. Low. My business address is 790 S. Buchanan Street, Amarillo, Texas, 79101.

Q. On whose behalf are you testifying in this proceeding?

A. I am filing testimony on behalf of Southwestern Public Service Company, a New Mexico corporation ("SPS") and wholly-owned electric utility subsidiary of Xcel Energy Inc. ("Xcel Energy").

Q. By whom are you employed and in what position?

A. I am employed by SPS as General Manager, SPS Generation.

Q. Please briefly outline your responsibilities as General Manager, SPS Generation.

A. I am responsible for providing management for the SPS Generation business area within the Energy Supply organization, which provides leadership, strategic direction, and management of the power generation group within the SPS area of Xcel Energy.

Q. Please describe your educational background.

A. I received a Bachelor of Science in Mechanical Engineering Technology from Texas Tech University in 1983. I also completed course work toward an MBA at West Texas A&M University from 1998 to 2001.

Q. Please describe your professional experience.

A. I began my career with SPS in 1983 as a Plant Engineer at Tolk Station. I was promoted to Supervisory Plant/Project Engineer at Tolk Station in 1987. In 1992, I was promoted to Senior Project Engineer at Tolk Station. Then, in 1995, I became the Maintenance Manager for SPS's Harrington Station. In 2003, I was promoted to Plant Director for Public Service Company of Colorado's Pawnee Station. In 2007, I was promoted to Plant Director of SPS's Tolk and Plant X Complex. Finally, in 2011, I was promoted to my current position as General Manager, SPS Generation.

Q. Have you attended or taken any special courses or seminars relating to public utilities?

A. Yes. Over my career, I have taken various courses and seminars related specifically to the public utility industry.

Q. Have you testified before any regulatory authorities?

A. Yes. I filed testimony at the Public Utility Commission of Texas in Docket Nos. 40824, 42004, 43695, 45524 and 47527, SPS's last five base rate cases, on Energy Supply affiliate expenses, SPS's generation by operating plant and unit, and its power plant operation, maintenance, and cost control practices. I also testified at the New Mexico Public Regulation Commission ("NMPRC") in Case No. 12-00350-UT, on SPS's known and anticipated operation and maintenance ("O&M") expenditures related to chemical and water usage for power plants. In addition, I have filed testimony on SPS's behalf before the NMPRC in Case Nos.

14-00348-UT, 15-00296-UT, 16-00269-UT, and 17-00255-UT addressing SPS's generation and its power plant operation, maintenance, and cost control practices.

II. ASSIGNMENT AND SUMMARY OF TESTIMONY AND RECOMMENDATIONS

Q. What is your assignment in this proceeding?

A. I support the Updated Test Year (July 1, 2018 through June 30, 2019)[1] O&M expenses and the administrative and general expenses in the Energy Supply ("ES") business area overall, which includes native costs and the following five classes of affiliate services:

1. ES Projects;
2. ES Environmental;
3. ES Performance Optimization;
4. ES Vice President ("VP") Energy Supply; and
5. ES VP Operations.

I will also discuss SPS's generation by operating plant and unit, and its power plant operation, maintenance, and cost control practices during the Updated Test Year. In addition, I explain SPS's approach to supporting the O&M needs of the Hale Wind Project, which began commercial operations in June 2019, and support SPS's request for the known and measurable O&M expenses for that facility. Finally, I sponsor or co-sponsor schedules in SPS's Rate Filing Package ("RFP") and the portions of the Executive Summary that contain information from these schedules.

[1] The Test Year in this case is April 1, 2018 through March 31, 2019, and the Update Period is April 1, 2019 through June 30, 2019. The Updated Test Year consists of the last nine months of the Test Year and the three months in the Update Period (i.e., July 1, 2018 – June 30, 2019). In addition to supporting the Updated Test Year costs, I have also reviewed the costs for the first three months of the Test Year for the native costs and affiliate classes I support and find those costs to be reasonable.

Q. Please summarize your testimony and recommendations.

A. SPS operates and maintains its generating facilities in an efficient and reliable manner:

- SPS uses tools such as PLEXOS software to schedule maintenance or overhauls on a component basis (instead of complete or major unit overhauls) which helps stabilize maintenance costs from year to year and ensures the efficient and reliable operation of SPS's units;
- SPS uses a proactive predictive maintenance program that helps minimize costs, while maintaining unit reliability;
- SPS maintains a robust performance assurance program, which includes ongoing monitoring of power plant performance, to improve unit efficiency and find cost-effective ways to reduce fuel costs;
    - SPS's coal units performed well during the Test Year, most operating within 3% of their Adjusted Design Net Heat Rate; and
    - During the Test Year, SPS conducted a Steam Path Analysis on Tolk Unit 1, Jones Unit 2, and Harrington Unit 1 turbines, which resulted in greater fuel savings and improvements in heat rates for those units;
- SPS requires and provides training of plant operators and maintenance personnel to ensure the safe and reliable operation of its units;
- Although SPS continues operating in an efficient manner, the changes to the Southwest Power Pool Inc.'s ("SPP") market has increased unit starts and shortened unit service hours, which has increased O&M expense and will likely do so in the future;

In comparison to other utilities, SPS's O&M programs for generation facilities are highly effective:

- The overall Equivalent Availability Factor ("EAF") for SPS's coal and gas units compare favorably with the national average for 2017, the most recent North American Electric Reliability Corporation ("NERC") publication of these metrics;
- The overall Forced Outage Rates ("FOR") of SPS's coal and gas units also compare favorably to the national average in 2017; and

- Although SPS had several unplanned outages during the Test Year, SPS took all reasonable steps to avoid unplanned outages and to quickly make repairs and bring plants back on-line when needed.

Native O&M Expenses – The amounts included in Attachment DAL-RR-10 represent, at a total company level, reasonable and necessary Energy Supply O&M costs incurred by SPS to provide safe and reliable electric service to its Texas retail customers.

Hale Wind Project O&M Expenses - SPS's approach to O&M for the Hale Wind Project leverages Xcel Energy's experience with other wind projects and efficiently uses experienced contractors and internal personnel. In this case, SPS is requesting a known and measurable adjustment to reflect its O&M expenses for its Service, Maintenance, and Warranty Agreement ("SMWA") with Vestas-American Wind Technology, Inc. ("Vestas"), and for the land lease expenses that SPS will incur during the period rates are in effect. Those costs are reasonable and known and measurable.

Affiliate O&M Expenses - The Updated Test Year costs that SPS seeks to recover for the services of each of the five affiliate classes that I support are reasonable and necessary because they support SPS's ability to provide electric service to its Texas retail customers.

ES Projects

- The estimated Updated Test Year (July 1, 2018 through June 30, 2019) costs for the services of the ES Projects affiliate class that SPS seeks to recover are $690,333 (total company).[2]

[2] "Total company" means the total amount for SPS, before any jurisdictional allocation.

- The costs are for services provided to SPS that include Texas and New Mexico regional capital engineering, design and document services, and construction and project services. These services are necessary to provide the generation plant and systems that enable the provision of safe and reliable electric service to SPS's customers.

- The costs are reasonable because they are shared with other affiliates, include reasonable personnel costs, and are subjected to rigorous budgeting and cost control processes.

- SPS does not provide these services for itself, and the services do not duplicate services provided by others.

- Each charge from SPS's affiliates for these services is no higher than the charge by those affiliates to any other entity for the same or similar service.

ES Environmental

- The estimated Updated Test Year costs for the services of the ES Environmental affiliate class that SPS seeks to recover are $1,678,242 (total company).

- The costs are related to services to help ensure plant facilities remain in environmental compliance, including obtaining permits for new and existing facilities and chemistry water resources . These services are necessary to ensured continued, regulatory-compliant, operation of SPS's generation plant facilities.

- The costs are reasonable because they are shared with other affiliates, include reasonable personnel costs, and are subjected to rigorous budgeting and cost control processes.

- SPS does not provide these services for itself, and the services do not duplicate services provided by others.

- Each charge from SPS's affiliates for these services is no higher than the charge by those affiliates to any other entity for the same or similar service.

ES Performance Optimization

- The estimated Updated Test Year costs for the services of the ES Performance Optimization affiliate class that SPS seeks to recover are $8,044,339 (total company).

- The costs are for plant engineering and technical support, asset management, overhaul management and maintenance support, performance testing and analysis, and reliability maintenance services. These services are necessary to ensure the safe and reliable operation of SPS's generation fleet.

- The costs are reasonable because they are shared with other affiliates, include reasonable personnel costs, and are subjected to rigorous budgeting and cost control processes.

- SPS does not provide these services for itself, and the services do not duplicate services provided by others.

- Each charge from SPS's affiliates for these services is no higher than the charge by those affiliates to any other entity for the same or similar service.

ES VP Energy Supply

- The estimated Updated Test Year costs for the services of the ES VP Energy Supply affiliate class that SPS seeks to recover are $143,089 (total company).

- The costs are for the oversight of VP Performance Optimization, VP Projects, and VP Operations. The services provided by this oversight function are necessary to ensure cost control, engineering and construction execution, technical support, and operational excellence of SPS's generation fleet.

- The costs are reasonable because they are shared with other affiliates, include reasonable personnel costs, and are subjected to rigorous budgeting and cost control processes.

- SPS does not provide these services for itself, and the services do not duplicate services provided by others.

- Each charge from SPS's affiliates for these services is no higher than the charge by those affiliates to any other entity for the same or similar service.

ES VP Operations

- The estimated Updated Test Year costs for the services of the ES VP Operations affiliate class that SPS seeks to recover are $462,122 (total company).

- The costs are for oversight and management of the Operating Model[3] across the Xcel Energy fleet and regional generation organizations, and to provide performance indicators and lead the Energy Supply safety program. These services are necessary to provide leadership in ensuring the safe and reliable operation of SPS's generation facilities.

- The costs are reasonable because they are shared with other affiliates, include reasonable personnel costs, and are subjected to rigorous budgeting and cost control processes.

- SPS does not provide these services for itself, and the services do not duplicate services provided by others.

- Each charge from SPS's affiliates for these services is no higher than the charge by those affiliates to any other entity for the same or similar service.

Q. You mention that certain costs that you present in your testimony are estimates. Please explain why this is the case and what items are estimates.

A. As explained by SPS witness William A. Grant, SPS will be using an Updated Test Year in this case. SPS's initial filing presents actual expenses for the Test Year (April 1, 2018 through March 31, 2019) and estimated information for the Update Period (April 1, 2019 through June 30, 2019). Accordingly, the first nine months of SPS's Updated Test Year (i.e., July 2018 through March 2019) consist of actual cost information and the last three months (i.e., April through June 2019) contain estimated cost information. For this reason, certain SPS witnesses refer to the Updated Test Year in direct testimony as the "estimated Updated Test Year."

Regarding the ES Projects, ES Environmental, ES Performance Optimization, ES VP Energy Supply, and ES VP Operations affiliate costs I support, as explained by SPS witness Melissa L. Schmidt, actual figures for April

[3] The "Operating Model" or "Generation Operating Model" provides for the alignment of resources and standardization of the key elements of organizational operation to identify best practices, reduce operating and maintenance cost, and promote excellence.

and May 2019 have been provided and June 2019 figures have been estimated based on the forecasted budget. However, these expenses have not gone through the full pro forma adjustment review process.

Regarding the native SPS costs for Energy Supply O&M that I support, which are provided in my Attachment DAL-RR-10, as explained by SPS witness Arthur P. Freitas, actual figures for April and May 2019 have been provided, and June 2019 figures have been estimated based on the forecasted budget.

Q. Will your testimony be updated to replace the estimated costs that you present and support with actual costs?

A. Yes. SPS will file an update 45 days after the application has been filed. The update will provide actual costs to replace the estimates provided in the application for the Update Period. As part of that process, my Attachments DAL-RR-A through D will be updated to remove estimates of ES Projects, ES Environmental, ES Performance Optimization, ES VP Energy Supply, and ES VP Operations affiliate O&M expenses incurred by SPS during the Updated Test Year and then replace those estimates with actual expenses, which will be used to establish SPS's base rates in this case. Additionally, my Attachment DAL-RR-10 will be updated in SPS's 45-day update filing to replace estimates of SPS's native costs relating to Energy Supply O&M with actuals.

Q. Were Attachments DAL-RR-1, DAL-RR-4 through DAL-RR-11, and DAL-RR-A through DAL-RR-D prepared by you or under your direct supervision and control?

A. Yes, as to Attachments DAL-RR-1, DAL-RR-4 through DAL-RR-9 and DAL-RR-11. Attachment DAL-RR-10 was prepared by SPS witness Arthur P. Freitas and his staff and is based on the cost of service study. Attachments DAL-RR-A through DAL-RR-D were prepared by Ms. Schmidt and her staff. My staff and I have reviewed these attachments, and I believe them to be accurate. Although the information I have described also is present in Ms. Schmidt's attachments, I have presented this information in the attachments to my testimony for the convenience of those reviewing my testimony.

Q. Are Attachments DAL-RR-2 and DAL-RR-3 true and correct copies of the documents you describe?

A. Yes.

Q. Were the portions of the RFP schedules you sponsor or co-sponsor prepared by you or under your supervision and control?

A. Yes.

Q. Do you incorporate the portions of the RFP schedules and the Executive Summary sponsored or co-sponsored by you into this testimony?

A. Yes.

III. DESCRIPTION OF RATE FILING PACKAGE SCHEDULES

Q. What RFP schedules do you sponsor?

A. I sponsor or co-sponsor the following RFP schedules:

Table DAL-RR-1

H Schedules	1, 1.2, 1.2a, 1.2a1, 1.2a2, 1.2b, 1.2c, 1.2d, 2, 3, 4, 6.2a, 6.2b, 6.2c, 6.3b, 7.1, 7.2, 7.3, 7.4, 7.5, 8, 9, 11.1, 11.2, 11.3, 12.2a, 12.2a1, 12.2b, 12.2b1, 12.2c, 12.2c1, 12.3a, 12.3b, and 12.3c
I Schedules	5.1, 5.2, and 5.3

Q. What information is contained in the H schedules?

A. The H schedules I sponsor or co-sponsor contain the following information:

- Schedule H-1 provides in summary form, the production plant operations and maintenance expenses (excluding fuel) by month for the Test Year and Updated Test Year, by the Federal Energy Regulatory Commission ("FERC") account, by primary fuel type, for all generating plants or units. Schedule H-1.2 provides total company O&M expenses for fossil plants. I co-sponsor this schedule with Mr. Freitas.

- Schedule H-1.2a provides a summary of O&M expenses for natural gas plants. I co-sponsor this schedule with Mr. Freitas.

- Schedule H-1.2a1 provides O&M expense for natural gas plants (steam generation). I co-sponsor this schedule with Mr. Freitas.

- Schedule H-1.2a2 provides O&M expense for natural gas plants (combustion turbine). I co-sponsor this schedule with Mr. Freitas.

- Schedule H-1.2b provides a summary of O&M expense for coal plants. I co-sponsor this schedule with Mr. Freitas.

- Schedule H-1.2c provides a summary of O&M expense for lignite plants.

- Schedule H-1.2d provides a summary of O&M expense for other plants. I co-sponsor this schedule with Mr. Freitas.

- Schedule H-2 provides production adjusted O&M expense for the Test Year and Updated Test Year. I co-sponsor this schedule with Mr. Freitas.

- Schedule H-3 provides the summary of actual production O&M expenses incurred.

- Schedule H-4 provides a list of all projects, in excess of $100,000, to be charged to production O&M expense in the most current budget or projection.

- Schedule H-6.2a provides a list of fossil unit forced outages that occurred during the Test Year.

- Schedule H-6.2b provides a list of scheduled outages of fossil units that occurred during the Test Year.

- Schedule H-6.2c provides a list of each outage for fossil units scheduled for the next five calendar years.

- Schedule H-6.3b provides the incremental cost information for the Test Year for each fossil unit outage, excluding outage costs under $500,000.

- Schedule H-7.1 provides a copy of the most recent total company production staffing plan.

- Schedule H-7.2 provides a copy of the most recent plan used for personnel staffing.

- Schedule H-7.3 provides a summary schedule of the number of personnel assigned to each plant on a calendar year basis during the preceding five calendar years.

- Schedule H-7.4 provides a listing of the average number of personnel assigned to each unit for the Test Year, and projected for the rate year.

- Schedule H-7.5 provides the production O&M organization charts for plants, systems operations, and corporate personnel with the associated number of personnel.

- Schedule H-8 provides a summary of the system-wide production operations programs.

- Schedule H-9 provides a summary of the system-wide production maintenance programs.

- Schedule H-11.1 provides the percentage of O&M expenses (excluding fuel) per total production plant expenses (excluding fuel) annually for the Test Year and the previous five years by plant.

- Schedule H-11.2 provides the percentage of preventative (including predictive) maintenance man-hours and corrective maintenance man-hours versus the total maintenance man-hours.

- Schedule H-11.3 provides the O&M costs (excluding fuel) per megawatt hour ("MWh") generated by each plant grouped by primary fuel type on a monthly and annual basis for the Test Year, and the previous five years.

- Schedules H-12.2a and H-12.2a1 provide MWh production by lignite and coal units for the Test Year and the previous five years.

- Schedules H-12.2b and H-12.2b1 provide MWh production by unit for natural gas and oil units for the Test Year and the previous five years.

- Schedules H-12.2c and H-12.2c1 provide MWh production for other units during the Test Year and previous five years.

- Schedules H-12.3a, H-12.3b, and H-12.3c provide generating unit data, unit characteristics, and efficiency and control systems.

Q. What information is contained in the I schedules that you sponsor?

A. Schedules I-5.1, I-5.2, and I-5.3 provide information regarding combustion residual production, disposal, and disposal costs.

Q. Will any of the schedules that you sponsor be updated?

A. Yes. Schedules H-1, H-1.2, H-1.2a, H-1.2a1, H-1.2a2, H-1.2b, H-1.2d, and H-2 will be updated in the case update filing 45 days after the application is filed.

IV. GENERATING FACILITIES

Q. Please describe SPS's generating facilities.

A. SPS had the following generating facilities in service during the Test Year:

Steam Production – Gas/Oil

- Jones Unit 1
- Jones Unit 2
- Plant X Unit 1
- Plant X Unit 2
- Plant X Unit 3
- Plant X Unit 4

Steam Production – Gas

- Cunningham Unit 1
- Cunningham Unit 2
- Maddox Unit 1
- Nichols Unit 1
- Nichols Unit 2
- Nichols Unit 3

Steam Production – Coal

- Harrington Unit 1
- Harrington Unit 2
- Harrington Unit 3
- Tolk Unit 1
- Tolk Unit 2

Other Production – Combustion Turbine

- Cunningham Unit 3
- Cunningham Unit 4
- Jones Unit 3
- Jones Unit 4
- Maddox Unit 2
- Maddox Unit 3
- Quay County Unit 1

SPS's natural gas-fueled plants consist of 12 steam turbine units and 7 combustion turbines. SPS's coal-fueled power plants consist of 5 steam units.

SPS's Carlsbad Generating Station was retired on December 31, 2017 and it has been dismantled. A major addition to the SPS generation fleet is the Hale Wind Project. The Hale Wind Project began commercial operation in June 2019. In addition to these SPS-owned facilities, SPS also makes use of four solar generation facilities located in New Mexico.

Q. Are any units dedicated for peaking service?

A. Yes. The combustion turbines at Jones Units 3 and 4, Cunningham Units 3 and 4, and Maddox Unit 2 are considered peaking units.

Q. Are any units used primarily for emergency situations?

A. Yes. Quay County and Maddox Unit 3 are designated primarily for emergency use.

V. ENERGY SUPPLY O&M EXPENDITURES

Q. What are the types of O&M services and costs specifically associated with SPS's Energy Supply business area?

A. SPS's Energy Supply business area provides a wide range of O&M services necessary to support SPS's ability to provide electric service to its Texas and New Mexico retail customers. Those services are provided to SPS directly through SPS and through SPS's affiliate, Xcel Energy Services Inc. ("XES"). Within this business area, SPS and XES employees have separate roles and responsibilities, but work in coordination with each other and under the direction of the XES Energy Supply business area management to provide various services, including:

Native and Affiliate Services:

- developing and executing projects for new generation and establishing uniform technology, design and equipment standards for capital projects;
- implementation and maintenance of an Energy Supply Quality Assurance and Quality Control Program and safety programs;
- plant engineering supporting the daily outage planning and execution, reliability maintenance services, and plant equipment and performance testing;
- maintaining technical resources on plant equipment to facilitate effective maintenance;
- implementing compliance with NERC reliability standards;
- storm restoration activities; and
- ensuring SPS's continued compliance with environmental rules and regulations including: air quality, water quality, hazardous and solid waste, remediation, storage tanks, and emergency spill response.

Exclusively Affiliate Services:

- developing and maintaining Energy Supply project management processes for capital projects and complex O&M projects;

- overseeing Energy Supply capital construction projects;
- maintaining a working relationship with key suppliers of materials, equipment, and engineering and construction services;
- providing environmental permitting and compliance support, training and compliance assistance, auditing of compliance, and managing coal ash contracts;
- developing, implementing, and supporting SPS's environmental leadership strategy and associated policy initiatives;
- providing strategic asset management that delivers analysis and training expertise in multiple areas, such as plant process chemistry and water resources;
- managing the overhaul process to optimize outage planning and execution;
- overseeing and managing all testing activities and NERC standards compliance through use of the Operating Model across the generating fleet;
- developing and managing the capital budget, project management, Quality Assurance/Quality Control programs, design control, and drawing control processes; and
- providing management oversight and direction to the regional generation organization, including the establishment of regional performance indicators, fleet-wide improvement initiatives, and leadership of the Energy Supply safety program.

Q. Are the services related to the Energy Supply business area reasonable and necessary for SPS's operations?

A. Yes. The services are reasonable and necessary to ensure that SPS's generation fleet, which is essential to providing electric service to SPS's customers, is safely and reliably operated and maintained. For example, these services are necessary to ensure that SPS's generation facilities remain in compliance with environmental regulations and receive sufficient technical support. The Energy

Supply business area provides services that are required by all utilities, and without which SPS would not be able to provide electric service to its customers.

Q. What amount is SPS requesting for native Energy Supply O&M?

A. The amounts included in Attachment DAL-RR-10 represent, at a total company level, reasonable and necessary Energy Supply O&M costs incurred by SPS to provide safe and reliable electric service to its Texas retail customers.

Q. What are the types of charges included in SPS's requested level of O&M expenses related to Energy Supply?

A. Energy Supply-related O&M expenses include both native SPS costs and affiliate charges. Native costs are those costs incurred directly by SPS associated with the provision of electric service to customers. These costs include labor, materials, and other non-fuel O&M costs. For example, the salaries of SPS employees are native costs. Affiliate costs are those associated with services provided by XES and the other Operating Companies[4] to SPS. It is important to note that within the Energy Supply business area, XES and SPS employees have separate roles and responsibilities, but work in coordination with each other and under the direction of the XES Energy Supply business area management to provide various services. In other words, the services provided by SPS's affiliates are in addition to, and not duplicative of, the services that SPS employees provide.

In addition, charges from SPS's affiliates must be provided "at cost," or without profit, and the charges to SPS must be no higher than the charges to other

[4] The Operating Companies are Northern States Power Company, a Minnesota corporation; Northern States Power Company, a Wisconsin corporation; Public Service Company of Colorado, a Colorado corporation; and SPS. Charges from the other Xcel Energy Operating Companies are generally related to emergency services, such as storm restoration activities.

Operating Companies for similar services. Ms. Schmidt provides additional details regarding the methodology of charging affiliate costs to SPS from XES and other affiliated entities. My testimony provides additional detail supporting the costs of the Energy Supply affiliate classes.

Q. Are the O&M costs related to the Energy Supply business area necessary and reasonable for SPS's operations?

A. Yes. As explained in more detail below, the Energy Supply business area monitors its actual expenditures versus its budget. In addition, the costs for these services include labor, materials, and other non-fuel O&M costs. SPS witness Michael T. Knoll provides testimony explaining that SPS's labor costs are reasonable. SPS witness Richard R. Schrubbe provides testimony regarding explaining that SPS's pension and related benefits costs are reasonable. SPS witness Gary J. O'Hara provides testimony explaining that the costs related to sourcing and procurement of goods and services is reasonable, and Ms. Schmidt provides testimony demonstrating that the methodology of billings for affiliated labor and labor related overheads is reasonable.

Q During the fiscal year, does the Energy Supply business area monitor its actual expenditures versus its budget?

A. Yes. Actual versus expected expenditures are monitored on a monthly basis by management within each department of the Energy Supply business area. Deviations are evaluated each month to ensure that costs are appropriate. In addition, action plans are developed to mitigate variations in actual to budgeted

expenditures. These mitigation plans may either reduce or delay other expenditures so that overall spending complies with the authorized budget.

Q. Are employees within the Energy Supply business area held accountable for deviations from the budget?

A. Yes. All management employees in the Energy Supply business area have specific budgetary targets that are measured on a monthly basis to ensure adherence to the targets and provide for action plan development to address variances.

VI. HALE WIND PROJECT O&M EXPENDITURES

Q. Is SPS proposing any adjustments to the Updated Test Year O&M?

A. Yes. The Updated Test Year O&M does not reflect the O&M expenses for the Hale Wind Project, which began commercial operation in June 2019. The adjustment requested for O&M expenditures for the Hale Wind Project is $9,598,240 (total company). That amount is reflected in Attachment APF-RR-2 presented by Mr. Freitas as well as my Attachment DAL-RR-10, and it is reasonable, necessary, and known and measurable.

Q. How was the amount included in the cost of service for the Hale Wind Project O&M developed?

A. The Hale O&M costs in the cost of service reflect the cost of the SMWA with Vestas of $7,686,240 (total company), as shown in Attachment APF-RR-6(CD) for the year during the period that rates will be in effect. A copy of the SMWA is provided as Attachment DAL-RR-2(V)(HS) to my testimony. The cost of service also reflects the amount associated with SPS's land lease payments for the facility under its Wind and Easement Lease Agreements ("Wind Lease Agreement") for the year during the period that proposed rates will be in effect in the amount of $1,912,000 (total company). A form of the Wind Lease Agreement is provided as Attachment DAL-RR-3(HS) to my testimony. Because those amounts are based in contract, they are known and measurable. In addition to these costs, there will likely be O&M expenses in addition to these two categories that SPS intends to request in future cases.

Q. Please provide a description of the Hale Wind Project.

A. The Hale Wind Project is a 478 megawatt ("MW") facility located in Hale County, Texas. To develop the Hale Wind Project, SPS has installed 239 turbines through a combination of Vestas model 2.0 MW V110 and 2.0 MW V116 wind turbines. Site infrastructure includes access roads, foundations, electrical cable collection systems, and a collection system substation. The generation output ties into the SPP transmission system through a generation tie line from the Hale Wind Project collector station to the interconnection tie breaker at the TUCO substation (i.e., the SPP transmission grid point). The Commission granted SPS a generation certificate of convenience and necessity in Docket 46936 that included approval of the Hale Wind Project.[5]

Q. What is involved in the O&M of a wind project?

A. O&M activities associated with a wind project generally involve two categories of maintenance: (1) scheduled; and (2) unscheduled. Scheduled maintenance includes general preventative maintenance. Unscheduled maintenance stems from the identification of operational issues from monitoring the wind turbines and the subsequent repair of identified issues.

[5] *Application of Southwestern Public Service Company for Approval of Transactions with ESI Energy, LLC and Invenergy Wind Development North America LLC, to Amend a Certificate of Convenience and Necessity for Wind Generation Projects and Associated Facilities in Hale County, Texas and Roosevelt County, New Mexico, and for Related Approvals,* Docket No. 46936, Final Order (May 25, 2018).

Q. Please provide an overview of SPS's plan for operating and maintaining the Hale Wind Project.

A. SPS is using a combination of services provided by the Original Equipment Manufacturer ("OEM") and internal personnel assigned to the Hale Wind Project site. SPS has executed a SMWA with Vestas, the OEM.

Q. Why did SPS enter into an SMWA with Vestas?

A. Vestas is the OEM of the turbines used in building the Hale Wind Project. Xcel Energy has found that using the OEM to perform O&M services offers several benefits, including: (i) lowering the risk of claims of inadequate maintenance during the warranty period; (ii) allowing Xcel Energy to readily obtain controls and software updates that help maintain reliability; and (iii) allowing Xcel Energy's teams to gain greater knowledge of technological advances by working closely with the OEM, which leads to improved O&M on the turbines over their useful lives. Vestas often provides O&M services to other wind projects, providing SPS additional assurance that Vestas is highly qualified to do the O&M work.

Q. What types of services will Vestas provide under the SMWA?

A. The SMWA obligates Vestas to perform warranty work as well as scheduled and unscheduled maintenance. The SMWA covers warranty work for equipment, including turbines, towers, and climb assists. Examples of warranty work include replacement of failed parts such as bearings, electronic components, and the labor associated with the replacement.

Vestas will also perform all maintenance, diagnostics, repair and replacement services on the serviced equipment, including among other things, performing gearbox borescopes, inspecting wind turbine blades, sampling gearbox and hydraulic unit oil, checking tensioning of tower base section anchor bolts and performing re-tensioning, monitoring and reporting any FAA lighting outages, and repairing and maintaining climb assists at scheduled intervals. Vestas is also required to maintain a suitable inventory of replacement and spare parts for the wind turbines.

Q. Could SPS have provided internally the same services as Vestas is providing through the SMWA?

A. No. SPS does not have employees trained in wind generation O&M, and SPS does not currently have training programs to support such activities.

Q. How many internal staff will be assigned to work on Hale O&M?

A. There will be four internal staff that will provide plant management, engineering, and administrative services to the Hale Wind Project, in addition to overseeing the SMWA contractors. In addition, XES personnel will provide various support services including providing technical service groups for assistance with engineering issues, material and chemical analysis, grid reliability, equipment analysis, environmental services, safety services, and site security.

Q. How does SPS and Xcel Energy work with the OEM to provide O&M activities for a wind generation project?

A. Xcel Energy works with the OEM during all phases of the project construction process and thereafter in the operation of the project. Xcel Energy staff monitors

and coordinates with those contractors to perform the O&M needed for the facility. SPS staff coordinates on scheduled maintenance as well as on responding to issues at the site. The contractor bears the responsibility for reporting conditions at the site and any issues, and contractor will inform the internal employees when an operations issue is identified.

In an instance where monitoring of SCADA data or other O&M-related monitoring has revealed a potential operations issue, internal staff will direct the external contractors to schedule a technician to go out to the turbine in question. Depending upon the nature of the potential problem, the team that goes out to the turbine may include both internal and external personnel. SPS works hand in hand with the contractor to address the cause of the issue and fix it as timely as possible.

Q. Is the SMWA and its terms reasonable and necessary for SPS's operations?

A. Yes, the SMWA is an essential part of the Hale Wind Project allowing for the efficient operation of the facility. The SMWA was negotiated in an arm's length transaction with Vestas.

Q. What type of plant management technology will the Hale Wind Project use?

A. The Hale Wind Project will use Energy Supply's Monitoring and Diagnostic ("M&D") Center as described in Section XIII of my testimony.

Q. How will the Hale Wind Project be monitored?

A. Xcel Energy has staff on site Monday through Friday during normal business hours, so if an issue arises during this time the staff can respond quickly. After normal business hours, the SCADA system continues to be monitored remotely

by Vestas and personnel can be dispatched if an issue arises that requires an immediate response. Turbines can also be turned off and restarted remotely if a problem is observed and the turbine needs to be taken offline. Under both emergency and non-emergency situations, however, the O&M response is just like any other power plant: when you get an alarm, you go to the site and address it as soon as practicable given the issue.

Q. In addition to the SMWA and internal staffing you have presented, are there other O&M costs that SPS is requesting to recover regarding the Hale Wind Project?

A. Yes. SPS is seeking recovery for payments to landowners pursuant to Wind Lease Agreements.

Q. Please describe the Wind Lease Agreements associated with the Hale Wind Project.

A. The transactions approved by the Commission in Docket 46936 included the acquisition of Wind Lease Agreements in Hale County that enabled the construction of the Hale Wind Project. The Wind Lease Agreements secure all land rights necessary for all development activities including wind turbines, overhead and underground electrical distribution, collection, transmission and communication lines, electric transformers, electric substations, roads, wind measurement equipment, and other ancillary facilities, as well as construction activities and uses. Lease payments are made in accordance with formulas set forth in the Wind Lease Agreements as among landowners located in defined project areas.

Q. Are the Wind Lease Agreements and their terms reasonable and necessary for SPS's operations?

A. Yes, the Wind Lease Agreements are an essential element allowing for the construction and operation of the Hale Wind Project. Each was negotiated in an arm's length transaction with landowners.

Q. Does Xcel Energy have experience with other wind project O&M?

A. Yes. Xcel Energy has wind farm O&M experience through multiple, successful company-owned wind projects at its other Operating Companies.[6] In total, by the end of 2019 Xcel Energy expects to be operating 1,127 turbines with a nameplate capacity of 2,200 MW, not including the Hale Wind Project.

Q. Has SPS applied the knowledge and experience that Xcel Energy has gained from wind projects in other jurisdictions to its plan for operating and maintaining the Hale Wind Project?

A. Yes. Xcel Energy and SPS applied the best practices learned from Xcel Energy's experience at those wind farms to SPS's O&M plan for the Hale Wind Project. Based on this experience, SPS believes that its O&M activities and requested amount for the Hale Wind Project are reasonable, necessary, and known and measurable.

[6] Xcel Energy's electric operating companies are: Northern States Power Company - Minnesota, Northern States Power Company – Wisconsin, Public Service Company, Public Service Company Colorado and SPS.

VII. AFFILIATE CLASSES SPONSORED

Q. Earlier in your testimony, you referred to "affiliate classes." What do you mean by the terms "affiliate classes" or "affiliate classes of services"?

A. A portion of SPS's costs reflects charges for services provided by a supplying affiliate, specifically XES or one of the Operating Companies. These charges have been grouped into various affiliate classes, or aggregations of charges, based upon the business area, organization, or department that provided the service or, in a few instances, the accounts that captured certain costs. In her direct testimony, Ms. Schmidt provides a detailed explanation of how the affiliate classes were developed and are organized for this case.

Q. Which affiliate classes do you sponsor?

A. I sponsor the ES Projects, ES Environmental, ES Performance Optimization, ES VP Energy Supply, and ES VP Operations classes of affiliate services.

VIII. AFFILIATE EXPENSES FOR THE ES PROJECTS CLASS OF SERVICES

A. Summary of Affiliate Expenses for the ES Projects Class of Services

Q. Where does the ES Projects affiliate class fit into the overall affiliate structure?

A. Attachment MLS-RR-6 to Ms. Schmidt's direct testimony provides a list and a pictorial display of all affiliate classes, dollar amounts for those classes, and sponsoring witness for each class. As seen on that attachment, the ES Projects affiliate class was part of the Energy Supply business area during the Updated Test Year. Attachment DAL-RR-1 to my testimony is an organization chart showing the Energy Supply organization.

Q. What services are grouped into the ES Projects affiliate class?

A. The services that are grouped into the ES Projects affiliate class are:

- Texas and New Mexico regional capital engineering;
- design and document services; and
- construction and project services.

Q. What is the dollar amount of the Updated Test Year XES charges that SPS requests, on a total company basis, for the ES Projects affiliate class?

A. The following table summarizes the dollar amount of the estimated Updated Test Year XES charges for the ES Projects affiliate class. I will update the table below as part of SPS's 45-day case update filing to reflect the actual Updated Test Year costs for the ES Projects affiliate class.

Table DAL-RR-2

Class of Services	Total XES Class Expenses	Requested Amount of XES Class Expenses Billed to SPS (Total Company)		
		Requested Amount	% Direct Billed	% Allocated
ES Projects	$3,251,362	$690,333	87.57%	12.43%

Total XES Class Expenses	Dollar amount of total Updated Test Year expenses that XES charged to all Xcel Energy companies for the services provided by this affiliate class. This is the amount from Column E in Attachment DAL-RR-A.
Requested Amount of XES Class Expenses Billed to SPS (Total Company)	Requested dollar amount of XES expenses to SPS (total company) for this affiliate class after exclusions and pro forma adjustments. This is the amount from Column K in Attachment DAL-RR-A.
% Direct Billed	The percentage of SPS's requested XES expenses (total company) for this class that were billed 100% to SPS.
% Allocated	The percentage of SPS's requested XES expenses (total company) for this class that were allocated to SPS.

Q. Please describe the attachments that support the information provided on Table DAL-RR-2.

A. There are four attachments to my testimony that present information about the requested SPS affiliate expenses for the ES Projects affiliate class.

Attachment DAL-RR-A: Provides a summary of the affiliate expenses for this class during the Updated Test Year. The summary starts with the total of the XES expenses to SPS for the services provided by this affiliate class and ends with the requested dollar amount of XES expenses to SPS (total company) for this affiliate class after exclusions and pro forma adjustments. The columns on this attachment provide the following information.

Column A —	Line No.	Lists the Attachment line numbers.
Column B —	Affiliate Class	Lists the affiliate class.
Column C —	Billing Method (Cost Center)	Shows the billing method that XES uses to charge the expenses to the affiliates, and the billing method short title. In her direct testimony, Ms. Schmidt explains the billing methods and defines the codes.
Column D —	Allocation Method	Shows the allocation method applicable to the billing method (cost center).
Column E —	Total XES Billings for Class to all Legal Entities (FERC Acct. 400-935)	Shows XES billings to all legal entities for the affiliate class.
Column F —	XES Billings for Class to all Legal Entities Except for SPS (FERC Acct. 400-935)	Shows XES billings to all legal entities other than SPS for the affiliate class.

Column G —	XES Billings for Class to SPS (Total Company) (FERC Acct. 400-935)	Shows XES billings to SPS (total company) for the affiliate class.
Column H —	Exclusions	Shows the total dollars to be excluded from Column G. Exclusions reflect expenses not requested, such as expenses not allowed or other below-the-line items.
Column I —	Per Book	Shows XES billings to SPS (total company), for the affiliate class, after the exclusions shown in Column H. The dollar amount in Column I is Column G plus Column H.
Column J —	Pro Formas	Shows the total dollar amount of pro forma adjustments to the dollar amount in Column I. Pro forma adjustments reflect revisions for known and measurable changes to the Updated Test Year expenses.
Column K —	Requested Amount (Total Company)	Shows the requested amount (total company) for the affiliate class. The dollar amount in Column K is Column I plus Column J.
Column L —	Percentage of class charges	Shows the percentage of affiliate class charges billed using the cost center.

In her direct testimony, Ms. Schmidt provides a consolidated summary of affiliate expenses billed to SPS for all classes during the Test Year and Updated Test Year.

Attachment DAL-RR-B(CD): Provides the detail of the XES expenses for the ES Projects affiliate class that are summarized on Attachment DAL-RR-A. The detail shows the XES expenses billed to SPS for the ES Projects affiliate class, itemized by the amount with each expense listed by individual activity and

billing method (cost center). When summed, these amounts tie to the amounts shown on Attachment DAL-RR-A and the detail regarding the expenses is organized to support that attachment. Specifically, the columns on this attachment provide the following information.

Column A —	Line No.	Lists the Attachment line numbers.
Column B —	Legal Entity Receiving XES Expenses	Shows the legal entity (Xcel Energy or one of its subsidiaries) that received the XES expense.
Column C —	Affiliate Class	Lists the affiliate class.
Column D —	Cost Element	Provides the cost element number
Column E —	Activity	Provides a short title for the activity.
Column F —	Billing Method (Cost Center)	Identifies the billing method and short title. In her direct testimony, Ms. Schmidt explains the billing methods and defines the codes.
Column G —	FERC Account	Shows the FERC Account in which the expense was recorded.
Column H —	XES Billings for Class to All Legal Entities (FERC Acct. 400-935)	Shows the itemized amount of the listed XES expense that was billed to all legal entities.
Column I —	XES Billings for Class to All Legal Entities Except SPS (FERC Acct. 400-935)	Shows the itemized amount of the listed XES expense that was billed to all legal entities other than SPS.
Column J —	XES Billings for Class to SPS (Total Company) (FERC Acct. 400-935)	Shows the itemized amount of the listed XES expense that was billed to SPS. Therefore the sum of this column provides total billings to SPS and ties to the total dollar amount for the affiliate class in Column G of Attachment DAL-RR-A.

Column K —	Exclusions	Shows the total dollars excluded from Column J. The total dollar amount for the affiliate class in Column K ties to the total dollar amount for the affiliate class in Column H of Attachment DAL-RR-A.
Column L —	Per Book	Shows XES billings to SPS (total company), for the affiliate class after the exclusions shown in Column K. The dollar amount in Column L is Column J plus Column K. The total dollar amount for the affiliate class in Column L ties to the total dollar amount for the affiliate class in Column I of Attachment DAL-RR-A.
Column M —	Pro Formas	Shows the dollar amount of pro forma adjustments to the dollar amount in Column L. The total dollar amount for the affiliate class in Column M ties to the total dollar amount for the affiliate class in Column J of Attachment DAL-RR-A.
Column N —	Requested Amount (Total Company)	Shows the requested amount (total company) for the affiliate class. The dollar amount in Column N is Column L plus Column M. The total dollar amount for the affiliate class in Column N ties to the total dollar amount for the affiliate class in Column K of Attachment DAL-RR-A.

Ms. Schmidt also provides a consolidated summary of this information for all affiliate classes during the Test Year and the Updated Test Year.

Attachment DAL-RR-C: Both Attachments DAL-RR-A and DAL-RR-B(CD) show exclusions to the XES expenses billed to SPS for the ES Projects affiliate class (Attachment DAL-RR-A, Column H; Attachment DAL-RR-B(CD), Column K). Attachment DAL-RR-C provides detail about those

exclusions listed on Attachments DAL-RR-A and DAL-RR-B(CD). The columns on Attachment DAL-RR-C provide the following information.

Column A —	Line No.	Lists the Attachment line numbers.
Column B —	Affiliate Class	Lists the affiliate class.
Column C —	FERC Account	Identifies the FERC Account for the expense that has been excluded.
Column D —	Explanations for Exclusions	Provides a brief rationale for the exclusion.
Column E —	Exclusions (Total Company)	Shows the dollar amount of the exclusion.

In her direct testimony, Ms. Schmidt describes the calculations underlying the exclusions.

Attachment DAL-RR-D: Both Attachments DAL-RR-A and DAL-RR-B(CD) show pro forma adjustments to SPS's per book expenses for the ES Projects affiliate class (Attachment DAL-RR-A, Column J; Attachment DAL-RR-B(CD), Column M). Attachment DAL-RR-D provides information about those pro forma adjustments shown on Attachments DAL-RR-A and DAL-RR-B(CD). The columns on Attachment DAL-RR-D provide the following information.

Column A —	Line No.	Lists the Attachment line numbers.
Column B —	Affiliate Class	Lists the affiliate class.
Column C —	FERC Account	Identifies the FERC Account affected by the pro forma adjustment.

Column D —	Explanations for Pro Formas	Provides a brief rationale for the pro forma adjustment.
Column E —	Sponsor	Identifies the witness or witnesses who sponsor the pro forma adjustment.
Column F —	Pro Formas (Total Company)	Shows the dollar amount of the pro forma adjustment.

Q. Does XES bill its expenses for the ES Projects affiliate class to SPS in the same manner as it bills other affiliates for those expenses?

A. Yes. As discussed by Ms. Schmidt, XES uses the same method for billing and allocating costs to affiliates other than SPS that it uses to bill and allocate those costs to SPS.

Q. Are there any exclusions to the XES billings to SPS for the ES Projects affiliate class?

A. No. As I mentioned earlier, exclusions reflect expenses not requested, such as expenses not allowed or other below-the-line items. Exclusions are shown on Attachment DAL-RR-A, Column H, and on Attachment DAL-RR-B(CD), Column K. The details for the exclusions are provided in Attachment DAL-RR-C. Ms. Schmidt describes how the exclusions were calculated. In SPS's 45-day case update, I will present an updated Attachment DAL-RR-C that will provide actual exclusions to replace any estimated exclusions included my original attachment.

Q. Are there any pro forma adjustments to SPS's per book expenses for the ES Projects affiliate class?

A. Yes. As I mentioned earlier, pro forma adjustments are revisions to Updated Test Year expenses for known and measurable changes. Pro forma adjustments are shown on Attachment DAL-RR-A, Column J, and on Attachment DAL-RR-B(CD), Column M. The details for the pro forma adjustments, including the witness or witnesses who sponsor each pro forma adjustment, are provided in Attachment DAL-RR-D. Given the time of SPS's initial filing, only the first nine months of the Updated Test Year have completed the full pro forma adjustment review process. In SPS's 45-day case update, I will present an updated Attachment DAL-RR-D that will complete the full pro forma adjustment review process for the last three months of the Updated Test Year.

Q. Attachment DAL-RR-D shows that you sponsor pro forma adjustments for expenses for the ES Projects affiliate class during the first nine months of the Updated Test Year that result in a net decrease for the ES Projects affiliate class of $803.19 Please explain the adjustments.

A. The adjustments that I sponsor remove payroll costs that have been adjusted to remove amounts for life events (a decrease of $713.89) and costs not benefitting SPS (a decrease of $89.30).

B. The ES Projects Class of Services are Necessary Services

Q. Are the services that are grouped in the ES Projects affiliate class necessary for SPS's operations?

A. Yes. The services grouped in the ES Projects affiliate class are necessary to ensure that SPS's capital projects are managed efficiently and safely and on schedule. They are functions required by all utilities and without which SPS would not be able to provide electric service to its customers.

Q. What are the specific services that are provided to SPS by the ES Projects affiliate class?

A. The specific services that are provided to SPS by the ES Projects affiliate class are:

- developing and maintaining a uniform Energy Supply project management process, including supporting tools, and the design and engineering process;
- managing capital projects, and executing larger, more complex O&M projects;
- developing and executing projects for new generation (including renewable and innovative technologies), establishing uniform technology, design, and equipment standards for capital projects, developing and managing an Energy Supply process for custody, care, and control of drawing and engineering records;
- coordinating development, implementation and maintenance of an Energy Supply Quality Assurance and Quality Control Program; and
- maintaining a working relationship with key suppliers of materials, equipment, and engineering and construction services.

Q. Are any of the ES Projects class of services that are provided to SPS duplicated elsewhere in XES or in any other Xcel Energy subsidiary such as SPS itself?

A. No. Within XES, none of the services grouped in the ES Projects affiliate class are duplicated elsewhere. No other Xcel Energy subsidiary performs these services for the Operating Companies. In some cases the plant engineers on small capital projects will conduct some of the services that ES Projects typically perform. This is not a duplication of service; rather it utilizes the appropriate resource for the project. It is more efficient for plant engineers to manage commodity projects due to their physical location. Although there are both XES and SPS employees in the ES Projects organization, the SPS employees do not perform the same activities as the XES employees and they have separate responsibilities and roles. The services provided by the SPS employees are not duplicative of the services provided by XES, although they work in coordination with and under the direction of the XES Energy Supply management. In addition, SPS does not perform these services for itself.

Q. Do SPS's Texas retail customers benefit from the services that are part of the ES Projects class of services?

A. Yes. The services of the ES Projects affiliate class benefit SPS's customers in many ways. For example, the ES Projects class develops and deploys capital budget and project management processes that guide funding decisions, minimize project risks, and ensure delivery of targeted value. Working with the plants and other support organizations within Energy Supply allows capital spending to be

optimized to achieve the best overall plant performance. From July 1, 2017 through March 31, 2019 (i.e., the first day after the end of the period for which capital additions were approved in Docket No. 47527[7] through the end of the Test Year), Energy Supply has completed capital projects totaling $62,344,848[8] (total company) for SPS, which have had the rigor of the above noted budget and project management processes applied to them. Overall capital project cash flow variance (i.e., actual to budget and forecast) was within the acceptable target range, which results in improved cash management and ensures that capital project schedules are maintained, thus minimizing the potential of cost overruns. This group also performs engineering designs for small to mid-sized capital projects and is the primary interface with third-party contractors and vendors used on plant capital projects. Some O&M support is also provided for the plants with the most significant work being drafting, maintaining, and updating plant drawings.

C. The ES Projects Class of Services are Provided at a Reasonable Cost

Q. Are the costs of the ES Projects class of services reasonable?

A. Yes. The costs of the ES Projects class of services are reasonable. XES provides the services and functions in the ES Projects class of services on a consolidated basis for multiple Xcel Energy legal entities. As a result, SPS benefits from

[7] *Application of Southwestern Public Service Company for Authority to Change Rates*, Docket No. 47527, Order (Dec. 10, 2018).

[8] Please refer to the Direct Testimony of SPS witness Mark Lytal, Attachment ML-RR-1. Mr. Lytal's Attachment ML-RR-2 provides the Energy Supply capital projects placed in service during the Update Period, which have also had the rigor of the above noted budget and project management processes applied to them.

sophisticated services provided by a pool of talented professionals, the consolidated costs of which are shared. The economies of scale inherent in this system result in reasonable costs for SPS for these services.

1. Additional Evidence

Q. Is there any additional evidence that supports your opinion that the costs of the ES Projects affiliate class are reasonable?

A. Yes. Of the estimated Updated Test Year costs for the ES Projects class, approximately 89.73% are compensation and benefits costs for XES personnel. Mr. Knoll and Mr. Schrubbe establish that the level of Xcel Energy's compensation and benefits is reasonable and necessary.

2. Budget Planning

Q. Is a budget planning process applicable to the ES Projects class of affiliate costs?

A. Yes. Annual O&M budgets are created for the ES Projects organization, which includes the ES Projects class of affiliate costs, using guidelines developed at the corporate level. Each manager within the ES Projects organization carefully reviews historical spend information, identifies changes that will be coming in the future, and analyzes the costs associated with those changes prior to submitting a proposed budget. The budgeting process is discussed in more detail by SPS witness Adam R. Dietenberger.

Q. During the fiscal year, does the ES Projects organization monitor its actual expenditures versus its budget?

A. Yes. Actual versus expected expenditures are monitored on a monthly basis by management within each department. Deviations are evaluated each month to ensure that costs are appropriate. In addition, action plans are developed to mitigate variations in actual to budgeted expenditures. These mitigation plans may either reduce or delay other expenditures so that the revised budget supports the authorized budget. If authorized budget adjustments are required, they are identified and approved at an appropriate level of management.

Q. Are employees within the ES Projects organization held accountable for deviations from the budget?

A. Yes. All management employees in the ES Projects organization have specific budgetary goals that are incorporated into their performance evaluations. Performance is measured on a monthly basis to ensure adherence to the goals and provide for action plan development to address variances. All ES Projects employees are required to manage their expenses to support the budgetary goals established by their manager. Failure to meet these performance targets will affect their performance evaluation and overall compensation.

3. Cost Trends

Q. Please state the dollar amounts of the actual per book charges from XES to SPS for the ES Projects class of services for the three fiscal years preceding the end of the Updated Test Year and the estimated per book charges for the estimated Updated Test Year.

A. The following table shows, for the fiscal years 2016, 2017, and 2018 (calendar years), the actual per book and, for the Updated Test Year, the estimated per book affiliate charges (Column I on Attachment DAL-RR-A) from XES to SPS for the services grouped in the ES Projects affiliate class:

Table DAL-RR-3

	ES Projects (Per Book) Charges Over Time			
Class of Services	2016	2017	2018	Updated Test Year (Estimated)
ES Projects	$1,757,130	$1,346,933	$611,453	$698,517

Q. What are the reasons for this trend?

A. The decrease in costs from 2016 to 2018 reflects a reduction in headcount. The increase from 2018 to the Updated Test Year reflects additional labor charges.

4. Staffing Trends

Q. Please provide the staffing levels for the ES Projects class of services for the three fiscal years preceding the end of the Updated Test Year and the Updated Test Year.

A. The following table shows, for the fiscal years 2016, 2017, and 2018 (calendar years) and for the Updated Test Year, the average of the end of month staffing levels for the ES Projects class of services.

Table DAL-RR-4

	Average End of Month # of Staff			
Class of Services	2016	2017	2018	Updated Test Year (Estimated)
ES Projects	122	121	111	108

Q. What are the reasons for this trend?

A. The average staffing levels from 2016 through the Updated Test Year have dropped due to attrition. Some of these roles were filled with staff augmentation (contractors), and several positions are open and seeking qualified candidates. Some reductions were made as jobs were consolidated based on workloads.

5. Cost Control and Process Improvement Initiatives

Q. Separate from the budget planning process, does the ES Projects affiliate class take any steps to control its costs or to improve its services?

A. Yes. ES Projects leverages requests for proposal for multiple projects together to negotiate better prices on materials and construction costs. ES Projects also contracts with the same engineers across the production fleet to perform similar projects, which lowers costs and improves the quality due to familiarization and

repetition of tasks. Additionally, the Energy Supply affiliate classes have a foundation of Xcel Energy's policies and procedures, which stress the importance of cost control and continuous improvement.

D. The Costs for the ES Projects Class of Services are Priced in a Fair Manner

Q. For those costs that XES charges (either directly or through use of an allocation) to SPS for the ES Projects class of services, does SPS pay any more for the same or similar service than does any other Xcel Energy affiliate?

A. No. The XES charges to SPS for any particular service are no higher than the XES charges to any other Xcel Energy affiliate. The costs charged for particular services are the actual costs that XES incurred in providing those services to SPS. A single, specific allocation method, rationally related to the cost drivers associated with the service being provided, is used with each cost center (billing method). In her direct testimony, Ms. Schmidt discusses the selection of billing methods and XES's method of charging for services in more detail.

Q. How are the costs of the ES Projects affiliate class billed to SPS?

A. My Attachment DAL-RR-B(CD) shows all of the costs in this class broken out by activity and, in conjunction with Column C in my Attachment DAL-RR-A, shows the billing method associated with each activity. My Attachment DAL-RR-A shows the allocation method (Column D) associated with each billing method (Column C) used in the affiliate class.

In SPS's 45-day case update, I will present updated Attachments DAL-RR-A and DAL-RR-B(CD) so that the entries for the last three months of the

Updated Test Year provide actual data and conform to the information provided for the first nine months. In the event the predominant billing methods and associated allocation methods for the ES Projects affiliate O&M expenses on my updated Attachments DAL-RR-A and DAL-RR-B(CD) differ from those discussed below, I will explain those differences in supplemental testimony in SPS's 45-day case update filing.

Q. What are the predominant allocation methods used for billing the costs that SPS seeks to recover for the ES Projects affiliate class of services?

A. All of the requested XES charges to SPS for this class were charged using one of the following billing allocation methods:

- Direct Billing – 87.57% of XES charges to SPS – $604,548.83;
- Electric Production Plant/Electric Transmission Plant/Electric Distribution Plant/Gas Transmission Plant/Gas Distribution Plant – 9.33% of XES charges to SPS - $64,393.65; and
- MWH Generation – 3.10% of XES charges to SPS – $21,390.39.

Q. Why is the "Direct Billing" method appropriate for assigning the costs captured in the cost centers that use that billing method?

A. For the cost centers that are assigned using the "Direct Billing" method, the costs normally reflect work that was performed specifically for SPS only. In some cases, however, the direct billing occurred after the application of an off-line allocator that tracks the relevant cost drivers. In either situation, the cost centers charged using the "Direct Billing" method are appropriate because the assignment of costs is in accordance with the distribution of benefits for the services received. For example, the costs related to labor costs related to specific SPS plants were assigned using the "Direct Billing" method. The cost of these services benefited

SPS, the work was performed specifically for SPS alone, and one of the cost drivers is boiler work. Thus, the "Direct Billing" method is appropriate because it assigns costs in accordance with cost causation and benefits received. For the cost centers that assign costs using Direct Billing, the per unit amounts charged by XES to SPS are no higher than the unit amounts billed by XES to other affiliates for the same or similar services and represent the actual costs of the services.

Q. **Why is it appropriate to allocate costs based upon the "Electric Production Plant/Electric Transmission Plant/Electric Distribution Plant/Gas Transmission Plant/Gas Distribution Plant" method for the costs captured in the cost centers that use that allocation method?**

A. For the cost center charged using the "Electric Production Plant/Electric Transmission Plant/Electric Distribution Plant/Gas Transmission Plant/Gas Distribution Plant" method as the allocator, the costs are driven by environmental services needed. For example, the labor and non-labor costs dedicated to air quality, renewable energy, innovative technology and climate change, developing corporate compliance strategy, regulatory agency interaction (both at the federal and/or state level), permitting and compliance reporting, waste management, combustion byproducts management, environmental compliance auditing, providing support to the Environmental Council, and assisting with environmental communications strategies, which are collected in Cost Center 200181, are assigned using this allocation method. Thus, allocating costs based on the environmental services used is appropriate for the allocation of costs to affiliates because it allocates costs for the services in accordance with cost causation and the distribution of the benefits of the services received. For the cost centers that

assign costs based upon this allocation method, the per unit amounts charged by XES to SPS as a result of the application of this allocation method are no higher than the unit amounts billed by XES to other affiliates for the same or similar services and represent the actual costs of the services.

Q. Why is it appropriate to allocate costs based upon the "MWH Generation" method for the costs captured in the cost centers that use that billing method?

A. The costs in the ES Projects class that are associated with engineering labor at SPS generating facilities are assigned using the "MWH Generation" method because such costs are directly related to the support of power plants. Thus, allocating costs based on the MWH Generation method is appropriate for the allocation of costs to affiliates because it allocates costs for the services in accordance with cost causation and the distribution of the benefits of the services received. For example, Cost Center 200135, which uses the MWH Generation method as the allocator, captures the costs associated with labor and non-labor costs of performance analysis, specialists, and analytical services provided to the Operating Companies' generation facilities. For the cost centers that assign costs based upon this billing method, the per unit amounts charged by XES to SPS as a result of the application of this billing method are no higher than the unit amounts billed by XES to other affiliates for the same or similar services and represent the actual costs of the services.

IX. AFFILIATE EXPENSES FOR THE ES ENVIRONMENTAL CLASS OF SERVICES

A. Summary of Affiliate Expenses for the ES Environmental Class of Services

Q. Where does the ES Environmental affiliate class fit into the overall affiliate structure?

A. Attachment MLS-RR-6 to Ms. Schmidt's direct testimony provides a list and a pictorial display of all affiliate classes, dollar amounts for those classes, and sponsoring witness for each class. As seen on that attachment, the ES Environmental affiliate class was part of the Energy Supply business area during the Updated Test Year. Attachment DAL-RR-1 to my testimony is an organization chart showing the Energy Supply organization.

Q. What services are grouped into the ES Environmental affiliate class?

A. The services that are grouped into the ES Environmental affiliate class include:

- Environmental Services Air and Water;
- Environmental Services Waste Remediation;
- Environmental Policy and Services;
- Chemistry and Water Resources; and
- Environmental Services Audit.

Q. What is the dollar amount of the Updated Test Year XES charges that SPS requests, on a total company basis, for the ES Environmental affiliate class?

A. The following table summarizes the dollar amount of the estimated Updated Test Year XES charges for the ES Environmental affiliate class. I will update the table

below as part of SPS's 45-day case update filing to reflect the actual Updated Test Year costs for the ES Environmental affiliate class.

Table DAL-RR-5

		Requested Amount of XES Class Expenses Billed to SPS (Total Company)		
Class of Services	Total XES Class Expenses	Requested Amount	% Direct Billed	% Allocated
ES Environmental	$8,081,240	$1,678,242	86.75%	13.25%

Total XES Class Expenses	Dollar amount of total Updated Test Year expenses that XES charged to all Xcel Energy companies for the services provided by this affiliate class. This is the amount from Column E in Attachment DAL-RR-A.
Requested Amount of XES Class Expenses Billed to SPS (Total Company)	Requested dollar amount of XES expenses to SPS (total company) for this affiliate class after exclusions and pro forma adjustments. This is the amount from Column K in Attachment DAL-RR-A.
% Direct Billed	The percentage of SPS's requested XES expenses (total company) for this class that were billed 100% to SPS.
% Allocated	The percentage of SPS's requested XES expenses (total company) for this class that were allocated to SPS.

Q. Please describe the attachments that support the information provided on Table DAL-RR-5.

A. There are four attachments to my testimony that present information about the requested SPS affiliate expenses for the ES Environmental affiliate class. I explained these attachments in detail previously in Section VIII.A of my testimony.

Q. Does XES bill its expenses for the ES Environmental affiliate class to SPS in the same manner as it bills other affiliates for those expenses?

A. Yes. As discussed by Ms. Schmidt, XES uses the same method for billing and allocating costs to affiliates other than SPS that it uses to bill and allocate those costs to SPS.

Q. Are there any exclusions to the XES billings to SPS for the ES Environmental affiliate class?

A. No. Exclusions are shown on Attachment DAL-RR-A, Column H, and on Attachment DAL-RR-B(CD), Column K. The details for the exclusions are provided in Attachment DAL-RR-C. Ms. Schmidt describes how the exclusions were calculated. In SPS's 45-day case update, I will present an updated Attachment DAL-RR-C that will provide actual exclusions to replace any estimated exclusions included in my original attachment.

Q. Are there any pro forma adjustments to SPS's per book expenses for the ES Environmental affiliate class?

A. Yes. As I mentioned earlier, pro forma adjustments are revisions to Updated Test Year expenses for known and measurable changes. Pro forma adjustments are

shown on Attachment DAL-RR-A, Column H, and on Attachment DAL-RR-B(CD), Column K. The details for the pro forma adjustments, including the witness or witnesses who sponsor each pro forma adjustment, are provided in Attachment DAL-RR-D. Given the time of SPS's initial filing, only the first nine months of the Updated Test Year have completed the full pro forma adjustment review process. In SPS's 45-day case update, I will present an updated Attachment DAL-RR-D that will complete the full pro forma adjustment review process for the last three months of the Updated Test Year.

Q. Attachment DAL-RR-D shows that you sponsor pro forma adjustments for expenses for the ES Environmental affiliate class during the first nine months of the Updated Test Year that result in a net decrease for the ES Environmental affiliate class of $60.88. Please explain the adjustments.

A. The adjustments that I sponsor remove amounts for life events (a decrease of $60.88).

B. The ES Environmental Class of Services are Necessary Services

Q. Are the services that are grouped in the ES Environmental affiliate class necessary for SPS's operations?

A. Yes. The services grouped in the ES Environmental affiliate class are necessary to ensure that the plant facilities remain in compliance with environmental regulations. The personnel within this class perform tasks such as seeking amendments and obtaining permits required for existing and new facilities. They are functions required by all utilities and without these functions SPS would be unable to provide electric service to its customers.

Q. What are the specific services that are provided to SPS by the ES Environmental affiliate class?

A. The specific services that are provided to SPS by the ES Environmental affiliate class are:

- ensuring SPS's continued compliance with environmental rules and regulations, including: air quality, water quality, hazardous and solid waste, remediation, storage tanks, and emergency spill response;
- managing the coal ash contracts with contractors;
- providing environmental permitting and compliance support, training and compliance assistance services, and auditing of compliance with environmental regulations; and
- developing, implementing, and supporting SPS's environmental leadership strategy and associated policy initiatives.

Q. Are any of the ES Environmental class of services that are provided to SPS duplicated elsewhere in XES or in any other Xcel Energy subsidiary such as SPS itself?

A. No. Within XES, none of the services grouped in the ES Environmental affiliate class are duplicated elsewhere. No other Xcel Energy subsidiary performs these services for the Operating Companies. In addition, SPS does not perform these services for itself. Although there are both XES and SPS employees in the Energy Supply organization, the SPS employees do not perform the same activities as the XES employees and they have separate responsibilities and roles. The services provided by the SPS employees are not duplicative of the services provided by XES, although they work in coordination with and under the direction of the XES management.

Q. Do SPS's Texas retail customers benefit from the services that are part of the ES Environmental class of services?

A. Yes. The services of the ES Environmental affiliate class benefit SPS's customers in many ways. For example, the costs associated with the ES Environmental class are incurred to ensure that SPS complies with all federal, state, and local environmental rules and regulations. SPS benefits from sophisticated environmental services provided to the Energy Supply organization, the consolidated costs of which are shared. The economies of scale inherent in this system result in reasonable costs for SPS for these services.

C. The ES Environmental Class of Services are Provided at a Reasonable Cost

Q. Are the costs of the ES Environmental class of services reasonable?

A. Yes. The costs of the ES Environmental class of services are reasonable. The management of the various air quality, water quality, and solid waste permits requires background, expertise, and training in these areas. By having a central organization managing these environmental areas, duplication of personnel and resources at the various facilities subject to regulations is avoided.

1. Additional Evidence

Q. Is there any additional evidence that supports your opinion that the costs of the ES Environmental affiliate class are reasonable?

A. Yes. Of the estimated Updated Test Year costs for the ES Environmental class, approximately 93.96% are compensation and benefits costs for XES personnel. Mr. Knoll and Mr. Schrubbe establish that the level of Xcel Energy's compensation and benefits is reasonable and necessary.

2. Budget Planning

Q. Is a budget planning process applicable to the ES Environmental class of affiliate costs?

A. Yes. Annual O&M budgets are created for the Environmental Services organization, which includes the ES Environmental class of affiliate costs, using guidelines developed at the corporate level. Each manager within the Environmental Services organization carefully reviews historical spend information, identifies changes that will be coming in the future, and analyzes the costs associated with those changes prior to submitting a proposed budget. The budgeting process is discussed in more detail by Mr. Dietenberger.

Q. During the fiscal year, does the Environmental Services organization monitor its actual expenditures versus its budget?

A. Yes. Actual versus expected expenditures are monitored on a monthly basis by management in the Environmental Services organization within each department. Deviations are evaluated each month to ensure that costs are appropriate. In addition, action plans are developed to mitigate variations in actual to budgeted expenditures. These mitigation plans may either reduce or delay other expenditures so that the revised budget supports the authorized budget. If authorized budget adjustments are required, they are identified and approved at an appropriate level of management.

Q. Are employees within the Environmental Services organization held accountable for deviations from the budget?

A. Yes. All management employees in the Environmental Services organization have specific budgetary goals that are incorporated into their performance evaluations. Performance is measured on a monthly basis to ensure adherence to the goals and provide for action plan development to address variances. All Environmental Services employees are required to manage their expenses to support the budgetary goals established by their manager. Failure to meet these performance targets will affect their performance evaluation and overall compensation.

3. Cost Trends

Q. Please state the dollar amounts of the actual per book charges from XES to SPS for the ES Environmental class of services for the three fiscal years preceding the end of the Updated Test Year and the estimated per book charges for the estimated Updated Test Year.

A. The following table shows, for the fiscal years 2016, 2017, and 2018 (calendar years), the actual per book and, for the Updated Test Year, the estimated per book affiliate charges (Column I on Attachment DAL-RR-A) from XES to SPS for the services grouped in the ES Environmental affiliate class:

Table DAL-RR-6

	ES Environmental (Per Book) Charges Over Time			
Class of Services	2016	2017	2018	Updated Test Year (Estimated)
ES Environmental	$838,839	$961,538	$1,101,032	$1,694,594

Q. What are the reasons for this trend?

A. Some increase in costs from 2016 to Updated Test Year occurred due to reorganizing the chemistry lab and plant chemist into the ES Environmental Services affiliate class. Additionally, during this time, increased outside consulting and legal costs were incurred to challenge the Regional Haze program in Texas, including Federal Implementation Plan requirements for dry scrubbers at Tolk and Harrington.

4. Staffing Trends

Q. Please provide the staffing levels for the ES Environmental class of services for the three fiscal years preceding the end of the Updated Test Year and the Updated Test Year.

A. The following table shows, for the fiscal years 2016, 2017, and 2018 (calendar years), and for the Updated Test Year, the average of the end-of-month staffing levels for the ES Environmental class of services.

Table DAL-RR-7

	Average End of Month # of Staff			
Class of Services	2016	2017	2018	Updated Test Year (Estimated)
ES Environmental	41	45	44	53

Q. What are the reasons for this trend?

A. The increase in average staffing levels from 2016 to 2017 was due to transferring the environmental analyst into Environmental Services. Average staffing levels from 2018 to the Updated Test Year have increased due changes in the organization that moved the plant chemists, system chemists, and system lab personnel to Environmental Services.

5. Cost Control and Process Improvement Initiatives

Q. Separate from the budget planning process, does the ES Environmental affiliate class take any steps to control its costs or to improve its services?

A. Yes. Environmental Services updates its workforce plan and business plan periodically to determine upcoming needs and any change for the department in order to control costs.

D. The Costs for the ES Environmental Class of Services are Priced in a Fair Manner

Q. For those costs that XES charges (either directly or through use of an allocation) to SPS for the ES Environmental class of services, does SPS pay any more for the same or similar service than does any other Xcel Energy affiliate?

A. No. The XES charges to SPS for any particular service are no higher than the XES charges to any other Xcel Energy affiliate. The costs charged for particular services are the actual costs that XES incurred in providing those services to SPS. A single, specific allocation method, rationally related to the costs drivers associated with the service being provided, is used with each cost center (billing method). In her direct testimony, Ms. Schmidt discusses the selection of billing methods and XES's method of charging for services in more detail.

Q. How are the costs of the ES Environmental affiliate class billed to SPS?

A. My Attachment DAL-RR-B(CD) shows all of the costs in this class broken out by activity and, in conjunction with Column C in my Attachment DAL-RR-A, shows the billing method associated with each activity. My Attachment DAL-RR-A shows the allocation method (Column D) associated with each billing method (Column C) used in the affiliate class.

In SPS's 45-day case update, I will present updated Attachments DAL-RR-A and DAL-RR-B(CD) so that the entries for the last three months of the Updated Test Year provide actual data and conform to the information provided for the first nine months. In the event the predominant billing methods and associated allocation methods for the ES Environmental Services affiliate O&M

expenses on my updated Attachments DAL-RR-A and DAL-RR-B(CD) differ from those discussed below, I will explain those differences in supplemental testimony in SPS's 45-day case update filing.

Q. What are the predominant allocation methods used for billing the costs that SPS seeks to recover for the ES Environmental affiliate class of services?

A. All of the XES charges to SPS for this class were charged using one of the following allocation methods:

- Direct Billing – 86.75% of XES charges to SPS – $1,455,827.67;
- Electric Production Plant/Electric Transmission Plant/Electric Distribution Plant/Gas Transmission Plant/Gas Distribution Plant – 13.19% of XES charges to SPS – $221,402.79; and
- MWH Generation – 0.06% of XES charges to SPS - $1,011.98.

Q. Why is the "Direct Billing" method appropriate for assigning the costs captured in the cost centers that use that allocation method?

A. For the cost centers that are assigned using the "Direct Billing" method, the costs normally reflect work that was performed specifically for SPS only. In some cases, however, the direct billing occurred after the application of an off-line allocator that tracks the relevant cost drivers. In either situation, the cost centers charged using the "Direct Billing" method are appropriate because the assignment of costs is in accordance with the distribution of benefits for the services received. For example, the costs related to environmental costs for specific SPS facilities were assigned using the "Direct Billing" method. The cost of these services benefited SPS, the work was performed specifically for SPS alone, and the cost driver is environmental oversight at various SPS generating stations. Thus, the

"Direct Billing" method is appropriate because it assigns costs in accordance with cost causation and benefits received. For the cost centers that assign costs using Direct Billing, the per unit amounts charged by XES to SPS are no higher than the unit amounts billed by XES to other affiliates for the same or similar services and represent the actual costs of the services.

Q. Why is it appropriate to allocate costs based upon the "Electric Production Plant/Electric Transmission Plant/Electric Distribution Plant/Gas Transmission Plant/Gas Distribution Plant" method for the costs captured in the cost centers that use that allocation method?

A. For the cost center charged using the "Electric Production Plant/Electric Transmission Plant/Electric Distribution Plant/Gas Transmission Plant/Gas Distribution Plant" method as the allocator, the costs are driven by environmental services needed. For example, the labor and non-labor costs dedicated to air quality, renewable energy, innovative technology and climate change, developing corporate compliance strategy, regulatory agency interaction (both at the federal and/or state level), permitting and compliance reporting, waste management, combustion byproducts management, environmental compliance auditing, providing support to the Environmental Council, and assisting with environmental communications strategies, which are collected in Cost Center 200181, are assigned using this allocation method. Thus, allocating costs based on the environmental services used is appropriate for the allocation of costs to affiliates because it allocates costs for the services in accordance with cost causation and the distribution of the benefits of the services received. For the cost centers that

assign costs based upon this allocation method, the per unit amounts charged by XES to SPS as a result of the application of this allocation method are no higher than the unit amounts billed by XES to other affiliates for the same or similar services and represent the actual costs of the services.

Q. Why is it appropriate to allocate costs based upon the "MWH Generation" method for the costs captured in the cost centers that use that billing method?

A. The costs in the ES Environmental class that are associated with engineering labor at SPS generating facilities are assigned using the "MWH Generation" method because such costs are directly related to the support of power plants. Thus, allocating costs based on the MWH Generation method is appropriate for the allocation of costs to affiliates because it allocates costs for the services in accordance with cost causation and the distribution of the benefits of the services received. For example, Cost Center 200138, which uses the MWH Generation method as the allocator, captures the costs associated with labor and non-labor costs of performance analysis, specialists, and analytical services provided to the Operating Companies' generation facilities. For the cost centers that assign costs based upon this billing method, the per unit amounts charged by XES to SPS as a result of the application of this billing method are no higher than the unit amounts billed by XES to other affiliates for the same or similar services and represent the actual costs of the services.

X. AFFILIATE EXPENSES FOR THE ES PERFORMANCE OPTIMIZATION CLASS OF SERVICES

A. Summary of Affiliate Expenses for the ES Performance Optimization Class of Services

Q. Where does the ES Performance Optimization affiliate class fit into the overall affiliate structure?

A. Attachment MLS-RR-6 to Ms. Schmidt's direct testimony provides a list and a pictorial display of all affiliate classes, dollar amounts for those classes, and sponsoring witness for each class. As seen on that attachment, the ES Performance Optimization affiliate class was part of the Energy Supply business area during the Updated Test Year. Attachment DAL-RR-1 to my testimony is an organization chart showing the Energy Supply organization.

Q. What services are grouped into the ES Performance Optimization affiliate class?

A. The services that are grouped into the ES Performance Optimization affiliate class are:

- Plant engineering and Technical Support (Plant Engineering costs were directly associated with Operations Services through the end of 2011);
- Technical Resources and Compliance;
- Asset Management;
- Overhaul Management and Maintenance Support;
- Performance Testing and Analysis; and
- Reliability Maintenance Services, including chemical and material analysis to increase reliability.

Q. What is the dollar amount of the Updated Test Year XES charges that SPS requests, on a total company basis, for the ES Performance Optimization affiliate class?

A. The following table summarizes the dollar amount of the estimated Updated Test Year XES charges for the ES Performance Optimization affiliate class. I will update the table below as part of SPS's 45-day case update filing to reflect the actual Updated Test Year costs for the ES Performance Optimization affiliate class.

Table DAL-RR-8

		Requested Amount of XES Class Expenses Billed to SPS (Total Company)		
Class of Services	Total XES Class Expenses	Requested Amount	% Direct Billed	% Allocated
ES Performance Optimization	$28,769,254	$8,044,339	91.24%	8.76%

Total XES Class Expenses	Dollar amount of total Updated Test Year expenses that XES charged to all Xcel Energy companies for the services provided by this affiliate class. This is the amount from Column E in Attachment DAL-RR-A.
Requested Amount of XES Class Expenses Billed to SPS (Total Company)	Requested dollar amount of XES expenses to SPS (total company) for this affiliate class after exclusions and pro forma adjustments. This is the amount from Column K in Attachment DAL-RR-A.

% Direct Billed	The percentage of SPS's requested XES expenses (total company) for this class that were billed 100% to SPS.
% Allocated	The percentage of SPS's requested XES expenses (total company) for this class that were allocated to SPS.

Q. Please describe the attachments that support the information provided on Table DAL-RR-8.

A. There are four attachments to my testimony that present information about the requested SPS affiliate expenses for the ES Performance Optimization affiliate class. I explained these attachments in detail previously in Section VIII.A of my testimony.

Q. Does XES bill its expenses for the ES Performance Optimization affiliate class to SPS in the same manner as it bills other affiliates for those expenses?

A. Yes. As discussed by Ms. Schmidt, XES uses the same method for billing and allocating costs to affiliates other than SPS that it uses to bill and allocate those costs to SPS.

Q. Are there any exclusions to the XES billings to SPS for the ES Performance Optimization affiliate class?

A. Yes. As I mentioned earlier, exclusions reflect expenses not requested, such as expenses not allowed or other below-the-line items. Exclusions are shown on Attachment DAL-RR-A, Column H, and on Attachment DAL-RR-B(CD), Column K. The details for the exclusions are provided in Attachment DAL-RR-C. Ms. Schmidt describes how the exclusions were calculated. In SPS's 45-day case update, I will present an updated Attachment DAL-RR-C that will provide

actual exclusions to replace any estimated exclusions included in my original attachment.

Q. Are there any pro forma adjustments to SPS's per book expenses for the ES Performance Optimization affiliate class?

A. Yes. As I mentioned earlier, pro forma adjustments are revisions to Updated Test Year expenses for known and measurable changes. Pro forma adjustments are shown on Attachment DAL-RR-A, Column J, and on Attachment DAL-RR-B(CD), Column M. The details for the pro forma adjustments, including the witness or witnesses who sponsor each pro forma adjustment, are provided in Attachment DAL-RR-D. Given the time of SPS's initial filing, only the first nine months of the Updated Test Year have completed the full pro forma adjustment review process. In SPS's 45-day case update, I will present an updated Attachment DAL-RR-D that will complete the full pro forma adjustment review process for the last three months of the Updated Test Year.

Q. Attachment DAL-RR-D shows that you sponsor pro forma adjustments for expenses for the ES Performance Optimization affiliate class during the first nine months of the Updated Test Year that result in a decrease for the ES Performance Optimization affiliate class of $1,110.56. Please explain the adjustments.

A. The adjustments that I sponsor remove amounts for life events (a decrease of $868.91) and costs not benefitting SPS (a decrease of $241.65).

B. The ES Performance Optimization Class of Services are Necessary Services

Q. Are the services that are grouped in the ES Performance Optimization affiliate class necessary for SPS's operations?

A. Yes. The services grouped in the ES Performance Optimization affiliate class are necessary to operate SPS's facilities efficiently, reliably, and in compliance with all applicable laws and regulations. They are functions required by all utilities and without which SPS would not be able to provide electric service to its customers.

Q. What are the specific services that are provided to SPS by the ES Performance Optimization affiliate class?

A. The specific services that are provided to SPS by the ES Performance Optimization affiliate class are:

- strategic asset management that provides analysis and training expertise, plant process chemistry, and water resources;
- overhaul management to optimize outage planning and execution;
- plant engineering to support the daily plant O&M activities;
- reliability maintenance services including chemical and material analysis to increase reliability;
- plant and equipment performance testing; and
- maintaining technical resources on plant equipment to facilitate effective maintenance.

Through these activities the ES Performance Optimization organization will work with the plant personnel to implement fleet-wide initiatives and achieve performance goals.

Q. Are any of the ES Performance Optimization class of services that are provided to SPS duplicated elsewhere in XES or in any other Xcel Energy subsidiary such as SPS itself?

A. No. Within XES, none of the services grouped in the ES Performance Optimization affiliate class are duplicated elsewhere. No other Xcel Energy subsidiary performs these services for the Operating Companies. In addition, SPS does not perform these services for itself. Although there are both XES and SPS employees in the ES Performance Optimization organization, the SPS employees do not perform the same activities as the XES employees and they have separate responsibilities and roles. The services provided by the SPS employees are not duplicative of the services provided by XES, although they work in coordination with and under the direction of the XES management.

Q. Do SPS's Texas retail customers benefit from the services that are part of the ES Performance Optimization class of services?

A. Yes. The services of the ES Performance Optimization affiliate class benefit SPS's customers in many ways. For example, the ES Performance Optimization organization provides reliability maintenance services that ensure SPS's generation fleet is run safely and efficiently. This keeps costs to a minimum and provides reliable electric service to SPS customers.

C. The ES Performance Optimization Class of Services are Provided at a Reasonable Cost

Q. Are the costs of the ES Performance Optimization class of services reasonable?

A. Yes. The costs of the ES Performance Optimization class of services are reasonable. XES provides the services and functions in the ES Performance Optimization class of services on a consolidated basis for multiple Operating Companies. As a result, SPS benefits from sophisticated services provided by a pool of talented professionals, the consolidated costs of which are shared. The economies of scale inherent in this system result in reasonable costs for SPS for these services.

1. Additional Evidence

Q. Is there any additional evidence that supports your opinion that the costs of the ES Performance Optimization affiliate class are reasonable?

A. Yes. Of the estimated Updated Test Year costs for the ES Performance Optimization class, approximately 88.76% are compensation and benefits costs for XES personnel. Mr. Knoll and Mr. Schrubbe establish that the level of Xcel Energy's compensation and benefits is reasonable and necessary.

2. Budget Planning

Q. Is a budget planning process applicable to the ES Performance Optimization class of affiliate costs?

A. Yes. Annual O&M budgets are created for the Environmental Services organization, which includes the ES Performance Optimization class of affiliate costs, using guidelines developed at the corporate level. Each manager within the

ES Performance Optimization organization carefully reviews historical spend information, identifies changes that will be coming in the future, and analyzes the costs associated with those changes prior to submitting a proposed budget. The budgeting process is discussed in more detail by Mr. Dietenberger.

Q. During the fiscal year, does the ES Performance Optimization business organization monitor its actual expenditures versus its budget?

A. Yes. Actual versus expected expenditures are monitored on a monthly basis by management in the ES Performance Optimization organization within each department of the ES Performance Optimization organization. Deviations are evaluated each month to ensure that costs are appropriate. In addition, action plans are developed to mitigate variations in actual to budgeted expenditures. These mitigation plans may either reduce or delay other expenditures so that the revised budget supports the authorized budget. If authorized budget adjustments are required, they are identified and approved at an appropriate level of management.

Q. Are employees within the ES Performance Optimization organization held accountable for deviations from the budget?

A. Yes. All management employees in the ES Performance Optimization organization have specific budgetary goals that are incorporated into their performance evaluations. Performance is measured on a monthly basis to ensure adherence to the goals and provide for action plan development to address variances. All ES Performance Optimization employees are required to manage their expenses to support the budgetary goals established by their manager.

Failure to meet these performance targets will affect their performance evaluation and overall compensation.

3. Cost Trends

Q. Please state the dollar amounts of the actual per book charges from XES to SPS for the ES Performance Optimization class of services for the three fiscal years preceding the end of the Updated Test Year and the estimated per book charges for the estimated Updated Test Year.

A. The following table shows, for the fiscal years 2016, 2017, and 2018 (calendar years), the actual per book and, for the Updated Test Year, the estimated per book affiliate charges (Column I on Attachment DAL-RR-A) from XES to SPS for the services grouped in the ES Performance Optimization affiliate class:

Table DAL-RR-9

	ES Performance Optimization (Per Book) Charges Over Time			
Class of Services	2016	2017	2018	Updated Test Year (Estimated)
ES Performance Optimization	$12,211,544	$8,509,601	$8,424,431	$8,136,441

Q. What are the reasons for this trend?

A. The decrease in costs from 2016 to the Updated Test Year was due to an decrease in support personnel and a decrease in labor due from moving chemistry lab and plant chemist to ES Environmental Services class and from moving the Instrument and Controls personnel to the ES Operations class.

4. Staffing Trends

Q. Please provide the staffing levels for the ES Performance Optimization class of services for the three fiscal years preceding the end of the Updated Test Year and the Updated Test Year.

A. The following table shows, for the fiscal years 2016, 2017, and 2018 (calendar years) and for the Updated Test Year, the average of the end of month staffing levels for the ES Performance Optimization class of services.

Table DAL-RR-10

	Average End of Month # of Staff			
Class of Services	2016	2017	2018	Updated Test Year (Estimated)
ES Performance Optimization	214	200	195	194

Q. What are the reasons for this trend?

A. The decrease in average staffing levels from 2016, 2017, and 2018 was due to attrition. Attrition includes promotions to other roles, retirements and employees seeking other opportunities. Some of these roles were filled with contractors and other roles were consolidated.

5. Cost Control and Process Improvement Initiatives

Q. Separate from the budget planning process, does the ES Performance Optimization affiliate class take any steps to control its costs or to improve its services?

A. Yes. Monthly budget-to-actual reports are published and distributed at every level down to the sub-groups within a department. Sufficient detail is available

for management to review major cost categories, identify areas of concern, and develop gap closure actions if necessary. This is a standing monthly business process within ES Performance Optimization.

D. The Costs for the ES Performance Optimization Class are Priced in a Fair Manner

Q. For those costs that XES charges (either directly or through use of an allocation) to SPS for the ES Performance Optimization class of services, does SPS pay any more for the same or similar service than does any other Xcel Energy affiliate?

A. No. The XES charges to SPS for any particular service are no higher than the XES charges to any other Xcel Energy affiliate. The costs charged for particular services are the actual costs that XES incurred in providing those services to SPS. A single, specific allocation method, rationally related to the costs drivers associated with the service being provided, is used with each cost center (billing method). In her direct testimony, Ms. Schmidt discusses the selection of billing methods and XES's method of charging for services in more detail.

Q. How are the costs of the ES Performance Optimization affiliate class billed to SPS?

A. My Attachment DAL-RR-B(CD) shows all of the costs in this class broken out by activity and, in conjunction with Column C in my Attachment DAL-RR-A, shows the billing method associated with each activity. My Attachment DAL-RR-A shows the allocation method (Column D) associated with each billing method (Column C) used in the affiliate class.

In SPS's 45-day case update, I will present updated Attachments DAL-RR-A and DAL-RR-B(CD) so that the entries for the last three months of the Updated Test Year provide actual data and conform to the information provided for the first nine months. In the event the predominant billing methods and associated allocation methods for the ES Performance Optimization affiliate O&M expenses on my updated Attachments DAL-RR-A and DAL-RR-B(CD) differ from those discussed below, I will explain those differences in supplemental testimony in SPS's 45-day case update filing.

Q. What are the predominant allocation methods used for billing the costs that SPS seeks to recover for the ES Performance Optimization affiliate class of services?

A. All of the requested XES charges to SPS for this class were charged using one of the following allocation methods:

- Direct Billing – 91.24% of XES charges to SPS – $7,339,405.54; and
- MWH Generation – 8.76% of XES charges to SPS – $704,614.54.

Q. Why is the "Direct Billing" method appropriate for assigning the costs captured in the cost centers that use that allocation method?

A. For the cost centers that are assigned using the "Direct Billing" method, the costs normally reflect work that was performed specifically for SPS only. In some cases, however, the direct billing occurred after the application of an off-line allocator that tracks the relevant cost drivers. In either situation, the cost centers charged using the "Direct Billing" method are appropriate because the assignment of costs is in accordance with the distribution of benefits for the services received.

For example, the costs related to ES Performance Optimization costs for specific SPS facilities were assigned using the "Direct Billing" method. The cost of these services benefitted SPS, the work was performed specifically for SPS alone, and the cost driver is ES Performance Optimization oversight at Harrington Station. Thus, the "Direct Billing" method is appropriate because it assigns costs in accordance with cost causation and benefits received. For the cost centers that assign costs using Direct Billing, the per unit amounts charged by XES to SPS are no higher than the unit amounts billed by XES to other affiliates for the same or similar services and represent the actual costs of the services.

Q. Why is it appropriate to allocate costs based upon the "MWH Generation" method for the costs captured in the cost centers that use that allocation method?

A. Cost Center 200138 which uses the "MWH Generation" method as the allocator, captures the costs associated with labor and non-labor costs of performance analysis, specialists and analytical services provided to the Operating Companies' generation facilities. The costs in the ES Performance Optimization class that are associated with plant engineering and technical support are assigned using this billing method because its costs are directly related to the support of power plants. Thus, allocating costs based on the "MWH Generation" method is appropriate for the allocation of costs to affiliates because it allocates costs for the services in accordance with cost causation and the distribution of the benefits of the services received. For the cost centers that assign costs based upon this allocation method, the per unit amounts charged by XES to SPS as a result of the application of this

allocation method are no higher than the unit amounts billed by XES to other affiliates for the same or similar services and represent the actual costs of the services.

XI. AFFILIATE EXPENSES FOR THE ES VP ENERGY SUPPLY CLASS OF SERVICES

A. Summary of Affiliate Expenses for the ES VP Energy Supply Class of Services

Q. Where does the ES VP Energy Supply affiliate class fit into the overall affiliate structure?

A. Attachment MLS-RR-6 to Ms. Schmidt's direct testimony provides a list and a pictorial display of all affiliate classes, dollar amounts for those classes, and sponsoring witness for each class. As seen on that attachment, the ES VP Energy Supply affiliate class was part of the Energy Supply business area during the Updated Test Year. Attachment DAL-RR-1 to my testimony is an organization chart showing the Energy Supply organization.

Q. What services are grouped into the ES VP Energy Supply affiliate class?

A. The services that are grouped into the ES VP Energy Supply affiliate class are the VP of Energy Supply which provides oversight for VP Performance Optimization, VP Projects, and VP Operations.

Q. What is the dollar amount of the Updated Test Year XES charges that SPS requests, on a total company basis, for the ES VP Energy Supply affiliate class?

A. The following table summarizes the dollar amount of the estimated Updated Test Year XES charges for the ES VP Energy Supply affiliate class. I will update the table below as part of SPS's 45-day case update filing to reflect the actual Updated Test Year costs for the ES VP Energy Supply affiliate class.

Table DAL-RR-11

		Requested Amount of XES Class Expenses Billed to SPS (Total Company)		
Class of Services	Total XES Class Expenses	Requested Amount	% Direct Billed	% Allocated
ES VP Energy Supply	$1,767,097	$143,089	1.18%	98.82%

Total XES Class Expenses	Dollar amount of total Updated Test Year expenses that XES charged to all Xcel Energy companies for the services provided by this affiliate class. This is the amount from Column E in Attachment DAL-RR-A.
Requested Amount of XES Class Expenses Billed to SPS (Total Company)	Requested dollar amount of XES expenses to SPS (total company) for this affiliate class after exclusions and pro forma adjustments. This is the amount from Column K in Attachment DAL-RR-A.
% Direct Billed	The percentage of SPS's requested XES expenses (total company) for this class that were billed 100% to SPS.
% Allocated	The percentage of SPS's requested XES expenses (total company) for this class that were allocated to SPS.

Q. Please describe the attachments that support the information provided on Table DAL-RR-11.

A. There are four attachments to my testimony that present information about the requested SPS affiliate expenses for the ES VP Energy Supply affiliate class. I explained these attachments in detail previously in Section VIII.A of my testimony.

Q. Does XES bill its expenses for the ES VP Energy Supply affiliate class to SPS in the same manner as it bills other affiliates for those expenses?

A. Yes. As discussed by Ms. Schmidt, XES uses the same method for billing and allocating costs to affiliates other than SPS that it uses to bill and allocate costs to SPS.

Q. Are there any exclusions to the XES billings to SPS for the ES VP Energy Supply affiliate class?

A. Yes. As I mentioned earlier, exclusions reflect expenses not requested, such as expenses not allowed or other below-the-line items. Exclusions are shown on Attachment DAL-RR-A, Column H, and on Attachment DAL-RR-B(CD), Column K. The details for the exclusions are provided in Attachment DAL-RR-C. Ms. Schmidt describes how the exclusions were calculated. In SPS's 45-day case update, I will present an updated Attachment DAL-RR-C that will provide actual exclusions to replace any estimated exclusions included in my original attachment.

Q. Are there any pro forma adjustments to SPS's per book expenses for the ES VP Energy Supply affiliate class?

A. Yes. As I mentioned earlier, pro forma adjustments are revisions to Updated Test Year expenses for known and measurable changes. Pro forma adjustments are shown on Attachment DAL-RR-A, Column J, and on Attachment DAL-RR-B(CD), Column M. The details for the pro forma adjustments, including the witness or witnesses who sponsor each pro forma adjustment, are provided in Attachment DAL-RR-D. Given the time of SPS's initial filing, only the first nine

months of the Updated Test Year have completed the full pro forma adjustment review process. In SPS's 45-day case update, I will present an updated Attachment DAL-RR-D that will complete the full pro forma adjustment review process for the last three months of the Updated Test Year.

Q. Attachment DAL-RR-D shows that you sponsor pro forma adjustments for the expenses for the ES VP Energy Supply affiliate class during the first nine months of the Updated Test Year that result in a net decrease for the ES VP Energy Supply affiliate class of $39.80. Please explain the adjustments.

A. The adjustments that I sponsor remove costs for life events (a decrease of $39.80).

B. The ES VP Energy Supply Class of Services are Necessary Services

Q. Are the services that are grouped in the ES VP Energy Supply affiliate class necessary for SPS's operations?

A. Yes. The services grouped in the ES VP Energy Supply affiliate class are necessary to ensure cost control, engineering and construction execution, technical support, and operational excellence. They are functions required by all utilities and without which SPS would not be able to provide electric service to its customers.

Q. What are the specific services that are provided to SPS by the ES VP Energy Supply affiliate class?

A. The specific services that are provided to SPS by the ES VP Energy Supply affiliate class are:

- The VP of Performance Optimization manages and oversees all technical, overhaul, chemistry, asset analysis, testing activities, and NERC Reliability Standard compliance, through the implementation of the

Operating Model (including continuous improvement) with the support and advocacy of the management team;

- The VP of Projects is responsible for the Capital Budget, Project Management, Quality Assurance/Quality Control, Design Control, and Drawing Control processes; and

- The VP of Operations manages and oversees all generation activities through the implementation of the Operating Model (including continuous improvement) with the support of the management team.

Q. Are any of the ES VP Energy Supply class of services that are provided to SPS duplicated elsewhere in XES or in any other Xcel Energy subsidiary such as SPS itself?

A. No. Within XES, none of the services grouped in the ES VP Energy Supply affiliate class are duplicated elsewhere. No other Xcel Energy subsidiary performs these services for the Operating Companies. In addition, SPS does not perform these services for itself.

Q. Do SPS's Texas retail customers benefit from the services that are part of the ES VP Energy Supply class of services?

A. Yes. The services of the ES VP Energy Supply affiliate class benefit SPS's customers in many ways. For example:

- ES VP Energy Supply sets priorities and goals and holds employees accountable to achieve great results; and

- ES VP Energy Supply standardize practices and continuous process improvements across the generation fleet.

C. The ES VP Energy Supply Class of Services are Provided at a Reasonable Cost

Q. Are the costs of the ES VP Energy Supply class of services reasonable?

A. Yes. The costs of the ES VP Energy Supply class of services are reasonable. The ES VP Energy Supply provides oversight and leadership that is required to ensure that the generation assets and supporting organizations are focusing on proper priorities, effectively managing generation risk, and constantly striving to improve overall performance.

1. Additional Evidence

Q. Is there any additional evidence that supports your opinion that the costs of the ES VP Energy Supply affiliate class are reasonable?

A. Yes. Of the estimated Updated Test Year costs for the ES VP Energy Supply class, approximately 87.24% are compensation and benefits costs for XES personnel. Mr. Knoll and Mr. Schrubbe establish that the level of Xcel Energy's compensation and benefits is reasonable and necessary.

2. Budget Planning

Q. Is a budget planning process applicable to the ES VP Energy Supply class of affiliate costs?

A. Yes. Annual O&M budgets are created for the ES VP Energy Supply organization, which includes the ES VP Energy Supply affiliate class, using guidelines developed at the corporate level. Each manager within the Energy Supply business area carefully reviews historical spend information, identifies changes that will be coming in the future, and analyzes the costs associated with

those changes prior to submitting a proposed budget. The budgeting process is discussed in more detail by Mr. Dietenberger.

Q. During the fiscal year, does the Energy Supply business area organization monitor its actual expenditures versus its budget?

A. Yes. Actual versus expected expenditures are monitored on a monthly basis by management in the Energy Supply business area within each department. Deviations are evaluated each month to ensure that costs are appropriate. In addition, action plans are developed to mitigate variations in actual to budgeted expenditures. These mitigation plans may either reduce or delay other expenditures so that the revised budget supports the authorized budget. If authorized budget adjustments are required, they are identified and approved at an appropriate level of management.

Q. Are employees within the Energy Supply business area organization held accountable for deviations from the budget?

A. Yes. All management employees in the Energy Supply business area have specific budgetary goals that are incorporated into their performance evaluations. Performance is measured on a monthly basis to ensure adherence to the goals and provide for action plan development to address variances. All Energy Supply employees are required to manage their expenses to support the budgetary goals established by their manager. Failure to meet these performance targets will affect their performance evaluation and overall compensation.

3. Cost Trends

Q. Please state the dollar amounts of the actual per book charges from XES to SPS for the ES VP Energy Supply class of services for the three fiscal years preceding the end of the Updated Test Year and the estimated per book charges for the estimated Updated Test Year.

A. The following table shows, for the fiscal years 2016, 2017, and 2018 (calendar years), the actual per book and, for the Updated Test Year, the estimated per book affiliate charges (Column I on Attachment DAL-RR-A) from XES to SPS for the services grouped in the ES VP Energy Supply affiliate class:

Table DAL-RR-12

	ES VP Energy Supply (Per Book) Charges Over Time			
Class of Services	2016	2017	2018	Updated Test Year (Estimated)
ES VP Energy Supply	$161,555	$160,965	$140,401	$144,915

Q. What are the reasons for this trend?

A. The decrease in costs from 2016 to the updated test year was due to reduced labor charges.

4. Staffing Trends

Q. Please provide the staffing levels for the ES VP Energy Supply class of services for the three fiscal years preceding the end of the Updated Test Year and the Updated Test Year.

A. The following table shows, for the fiscal years 2016, 2017, and 2018 (calendar years) and for the Updated Test Year, the average of the end of month staffing levels for the ES VP Energy Supply class of services.

Table DAL-RR-13

	Average End of Month # of Staff			
Class of Services	2016	2017	2018	Updated Test Year (Estimated)
ES VP Energy Supply	8	6	2	2

Q. What are the reasons for this trend?

A. The decrease in average staffing levels from 2016 to 2018 was due to the reassignment of six employees to ES VP Energy Supply to work on Productivity through Technology ("PTT") efforts in 2016. Once the PTT efforts were implemented the employees moved back into other roles.

5. Cost Control and Process Improvement Initiatives

Q. Separate from the budget planning process, does the ES VP Energy Supply affiliate class take any steps to control its costs or to improve its services?

A. Yes. ES VP Energy Supply works with ES Projects to produce large O&M and capital savings on large projects that require construction and material cost by

bundling those projects with similar projects and awarding bids to the most competitive contractors.

D. The Costs for the ES VP Energy Supply Class of Services are Priced in a Fair Manner

Q. For those costs that XES charges (either directly or through use of an allocation) to SPS for the ES VP Energy Supply class of services, does SPS pay any more for the same or similar service than does any other Xcel Energy affiliate?

A. No. The XES charges to SPS for any particular service are no higher than the XES charges to any other Xcel Energy affiliate. The costs charged for particular services are the actual costs that XES incurred in providing those services to SPS. A single, specific allocation method, rationally related to the costs drivers associated with the service being provided, is used with each cost center (billing method). In her direct testimony, Ms. Schmidt discusses the selection of billing methods and XES's method of charging for services in more detail.

Q. How are the costs of the ES VP Energy Supply affiliate class billed to SPS?

A. My Attachment DAL-RR-B(CD) shows all of the costs in this class broken out by activity and, in conjunction with Column C in my Attachment DAL-RR-A, shows the billing method associated with each activity. My Attachment DAL-RR-A shows the allocation method (Column D) associated with each billing method (Column C) used in the affiliate class.

In SPS's 45-day case update, I will present updated Attachments DAL-RR-A and DAL-RR-B(CD) so that the entries for the last three months of the Updated Test Year provide actual data and conform to the information

provided for the first nine months. In the event the predominant billing methods and associated allocation methods for the ES VP Energy Supply affiliate O&M expenses on my updated Attachments DAL-RR-A and DAL-RR-B(CD) differ from those discussed below, I will explain those differences in supplemental testimony in SPS's 45-day case update filing.

Q. What are the predominant allocation methods used for billing the costs that SPS seeks to recover for the ES VP Energy Supply affiliate class of services?

A. All of the requested XES charges to SPS for this class were charged using the following allocation methods:

- MWH Generation – 97.41% of XES charges to SPS - $139,376.21;

Q. Why is it appropriate to allocate costs based upon the "MWH Generation" method for the costs captured in the cost centers that use that allocation method?

A. Cost Center 200138, which uses the "MWH Generation" method as the allocator, captures the costs associated with labor and non-labor costs of performance analysis, specialists and analytical services provided to the Operating Companies' generation facilities. The costs in the ES VP Energy Supply class that are associated with engineering oversight at SPS generating facilities are assigned using this allocation method because its costs are directly related to the support of power plants. Thus, allocating these costs based on the "MWH Generation" method is appropriate for the allocation of costs to affiliates because it allocates costs for the services in accordance with cost causation and the distribution of the benefits of the services received. For the cost centers that assign costs based upon

this allocation method, the per unit amounts charged by XES to SPS as a result of the application of this allocation method are no higher than the unit amounts billed by XES to other affiliates for the same or similar services and represent the actual costs of the services.

Q. You have covered the allocation methods used to bill 97.41% of the costs associated with this affiliate class. Why have you not specifically covered the remaining 2.59% of the costs of this class?

A. I have described the predominant allocation methods associated with this affiliate class. The remaining costs are billed using three different allocators, no one of which is used to bill more than 1.18% of the costs. In light of the number of remaining allocators, cost centers (billing methods), and relative dollar amounts, I have not gone into a detailed discussion of these other allocation methods in order to keep the discussion to a manageable level. The cost centers (billing methods) used to charge the remaining 2.59% of the costs in this class, however, are presented in my Attachment DAL-RR-B(CD), discussed earlier. A reader may reference that attachment and then refer to the specific cost center (billing method) summary provided in Ms. Schmidt's Attachment MLS-RR-13(V) for an explanation of the particular allocators used and the cost drivers for the activities reflected in that particular cost center.

Q. Have you determined that the costs reflected in the remaining 2.59% of costs associated with this class of services have been billed using an appropriate billing method and allocation method?

A. Yes. I, or one of my staff working at my direction, have reviewed each of the cost centers and the associated allocators used to bill the remaining 2.59% of the costs of this class. The cost drivers reflected in the allocation method used to bill the costs of each cost center (billing method) are consistent with and reflect the cost drivers of the services captured in each particular cost center (billing method). Therefore, the billing methods and allocation methods are appropriate because the allocation of costs is in accordance with the distribution of the benefits received by SPS and are no higher than the per unit costs charged to other affiliates for the same or similar types of services.

XII. AFFILIATE EXPENSES FOR THE ES VP OPERATIONS CLASS OF SERVICES

A. Summary of Affiliate Expenses for the ES VP Operations Class of Services

Q. Where does the ES VP Operations affiliate class fit into the overall affiliate structure?

A. Attachment MLS-RR-6 to Ms. Schmidt's direct testimony provides a list and a pictorial display of all affiliate classes, dollar amounts for those classes, and sponsoring witness for each class. As seen on that attachment, the ES VP Operations affiliate class was part of the Energy Supply business area during the Updated Test Year. Attachment DAL-RR-1 to my testimony is an organization chart showing the Energy Supply organization.

Q. What services are grouped into the ES VP Operations affiliate class?

A. The services that are grouped into the ES VP Operations affiliate class are Operations, Maintenance, Environmental, and NERC and FERC Compliance personnel.

Q. What is the dollar amount of the Updated Test Year XES charges that SPS requests, on a total company basis, for the ES VP Operations affiliate class?

A. The following table summarizes the dollar amount of the estimated Updated Test Year XES charges for the ES VP Operations affiliate class. I will update the table below as part of SPS's 45-day case update filing to reflect the actual Updated Test Year costs for the ES VP Operations affiliate class.

Table DAL-RR-14

		Requested Amount of XES Class Expenses Billed to SPS (Total Company)		
Class of Services	Total XES Class Expenses	Requested Amount	% Direct Billed	% Allocated
ES VP Operations	$3,219,814	$462,122	32.68%	67.32%

Total XES Class Expenses	Dollar amount of total Updated Test Year expenses that XES charged to all Xcel Energy companies for the services provided by this affiliate class. This is the amount from Column E in Attachment DAL-RR-A.
Requested Amount of XES Class Expenses Billed to SPS (Total Company)	Requested dollar amount of XES expenses to SPS (total company) for this affiliate class after exclusions and pro forma adjustments. This is the amount from Column K in Attachment DAL-RR-A.
% Direct Billed	The percentage of SPS's requested XES expenses (total company) for this class that were billed 100% to SPS.
% Allocated	The percentage of SPS's requested XES expenses (total company) for this class that were allocated to SPS.

Q. Please describe the attachments that support the information provided on Table DAL-RR-14.

A. There are four attachments to my testimony that present information about the requested SPS affiliate expenses for the ES VP Operations affiliate class. I explained these attachments in detail previously in Section VIII.A of my testimony.

Q. Does XES bill its expenses for the ES VP Operations affiliate class to SPS in the same manner as it bills other affiliates for those expenses?

A. Yes. As discussed by Ms. Schmidt, XES uses the same method for billing and allocating costs to affiliates other than SPS that it uses to bill and allocate those costs to SPS.

Q. Are there any exclusions to the XES billings to SPS for the ES VP Operations affiliate class?

A. No. Exclusions are shown on Attachment DAL-RR-A, Column H, and on Attachment DAL-RR-B(CD), Column K. The details for the exclusions are provided in Attachment DAL-RR-C. Ms. Schmidt describes how the exclusions were calculated. In SPS's 45-day case update, I will present an updated Attachment DAL-RR-C that will provide actual exclusions to replace any estimated exclusions included in my original attachment.

Q. Are there any pro forma adjustments to SPS's per book expenses for the ES VP Operations affiliate class?

A. Yes. As I mentioned earlier, pro forma adjustments are revisions to Updated Test Year expenses for known and measurable changes. Pro forma adjustments are

shown on Attachment DAL-RR-A, Column J, and on Attachment DAL-RR-B(CD), Column M. The details for the pro forma adjustments, including the witness or witnesses who sponsor each pro forma adjustment, are provided in Attachment DAL-RR-D. Given the time of SPS's initial filing, only the first nine months of the Updated Test Year have completed the full pro forma adjustment review process. In SPS's 45-day case update, I will present an updated Attachment DAL-RR-D that will complete the full pro forma adjustment review process for the last three months of the Updated Test Year.

B. The ES VP Operations Class of Services are Necessary Services

Q. Are the services that are grouped in the ES VP Operations affiliate class necessary for SPS's operations?

A. Yes. The services grouped in the ES VP Operations affiliate class are necessary to ensure safe, environmentally compliant, and reliable plant operation. They are functions required by all utilities and without which SPS would not be able to provide electric service to its customers.

Q. What are the specific services that are provided to SPS by the ES VP Operations affiliate class?

A. The specific services that are provided to SPS by the ES VP Operations affiliate class are:

- managing the Operating Model across the fleet, including managing and overseeing all generation operating activities through the implementation of the Operating Model (including continuous improvement) with the support and advocacy of the management team;
- providing general management oversight and direction to the regional generation organizations;

- establishing the regional key performance indicators, identifying fleet-wide improvement initiatives, and managing overall budget performance for the plant operations groups; and

- leading the Energy Supply safety program.

Q. Are any of the ES VP Operations class of services that are provided to SPS duplicated elsewhere in XES or in any other Xcel Energy subsidiary such as SPS itself?

A. No. Within XES, none of the services grouped in the ES VP Operations affiliate class are duplicated elsewhere. No other Xcel Energy subsidiary performs these services for the Operating Companies. In addition, SPS does not perform these services for itself.

Q. Do SPS's Texas retail customers benefit from the services that are part of the ES VP Operations class of services?

A. Yes. The services of the ES VP Operations affiliate class benefit SPS's customers in many ways. For example:

- The ES VP Operations is responsible for business planning for all regions, including SPS;

- The ES VP Operations supports the SPS region by coordinating reliability, work planning, and scheduling activities;

- The ES VP Operations emphasizes the importance of employee and public safety, and ensures that Energy Supply safety programs are implemented; and

- The ES VP Operations is responsible for record coordination for planning and process enhancement.

C. The ES VP Operations Class of Services are Provided at a Reasonable Cost

Q. Are the costs of the ES VP Operations class of services reasonable?

A. Yes. The costs of the ES VP Operations class of services are reasonable. XES provides the services and functions in ES VP Operations on a consolidated basis for multiple Xcel Energy legal entities. SPS benefits from management provided to the Operations group within the Energy Supply business area, the consolidated costs of which are shared. ES VP Operations drives standardization, best practices, and cost control across the Operating Companies. The economies of scale inherent in this system result in reasonable costs for SPS for these services.

1. Additional Evidence

Q. Is there any additional evidence that supports your opinion that the costs of the ES VP Operations affiliate class are reasonable?

A. Yes. Of the estimated Updated Test Year costs for the ES VP Operations class, more than 69.35% are compensation and benefits costs for XES personnel. Mr. Knoll and Mr. Schrubbe establish that the level of Xcel Energy's compensation and benefits is reasonable and necessary.

2. Budget Planning

Q. Is a budget planning process applicable to the ES VP Operations class of affiliate costs?

A. Yes. Annual O&M budgets are created for the Energy Supply business area, which includes the ES VP Operations class of affiliate costs, using guidelines developed at the corporate level. Each manager within the Energy Supply business area carefully reviews historical spend information, identifies changes

that will be coming in the future, and analyzes the costs associated with those changes prior to submitting a proposed budget. The budgeting process is discussed in more detail by Mr. Dietenberger.

Q. During the fiscal year, does the Energy Supply business area organization monitor its actual expenditures versus its budget?

A. Yes. Actual versus expected expenditures are monitored on a monthly basis by management in the Energy Supply business area within each department. Deviations are evaluated each month to ensure that costs are appropriate. In addition, action plans are developed to mitigate variations in actual to budgeted expenditures. These mitigation plans may either reduce or delay other expenditures so that the revised budget supports the authorized budget. If authorized budget adjustments are required, they are identified and approved at an appropriate level of management.

Q. Are employees within the Energy Supply business area organization held accountable for deviations from the budget?

A. Yes. All management employees in the Energy Supply business area have specific budgetary goals that are incorporated into their performance evaluations. Performance is measured on a monthly basis to ensure adherence to the goals and provide for action plan development to address variances. All Energy Supply employees are required to manage their expenses to support the budgetary goals established by their manager. Failure to meet these performance targets will affect their performance evaluation and overall compensation.

3. Cost Trends

Q. Please state the dollar amounts of the actual per book charges from XES to SPS for the ES VP Operations class of services for the three fiscal years preceding the end of the Updated Test Year and the estimated per book charges for the estimated Updated Test Year.

A. The following table shows, for the fiscal years 2016, 2017, and 2018 (calendar years), the actual per book and, for the Updated Test Year, the estimated per book affiliate charges (Column I on Attachment DAL-RR-A) from XES to SPS for the services grouped in the ES VP Operations affiliate class:

Table DAL-RR-15

	ES VP Operations (Per Book) Charges Over Time			
Class of Services	2016	2017	2018	Updated Test Year (Estimated)
ES VP Operations	$272,813	$439,560	$443,391	$466,355

Q. What are the reasons for this trend?

A. The cost increase from 2016 to 2017 related to an increase in outside services and adding one employee. Costs increased to the Updated Test Year due to McKinsey consulting services.

4. Staffing Trends

Q. Please provide the staffing levels for the ES VP Operations class of services for the three fiscal years preceding the end of the Updated Test Year and the Updated Test Year.

A. The following table shows, for the fiscal years 2016, 2017, and 2018 (calendar years) and for the Updated Test Year, the average of the end of month staffing levels for the ES VP Operations class of services.

Table DAL-RR-16

	Average End of Month # of Staff			
Class of Services	2016	2017	2018	Updated Test Year (Estimated)
ES VP Operations	12	13	13	13

Q. What are the reasons for this trend?

A. The trend in average staffing levels from 2016 to the Updated Test Year remained fairly constant. The increase in 2017 was due to engineering support in the wind energy projects.

5. Cost Control and Process Improvement Initiatives

Q. Separate from the budget planning process, does the ES VP Operations affiliate class take any steps to control its costs or to improve its services?

A. Yes. ES VP Operations drives standardization, best practices, and cost controls for the groups that it oversees. These activities help to control costs of providing services.

D. The Costs for the ES VP Operations Class of Services are Priced in a Fair Manner

Q. For those costs that XES charges (either directly or through use of an allocation) to SPS for the ES VP Operations class of services, does SPS pay any more for the same or similar service than does any other Xcel Energy affiliate?

A. No. The XES charges to SPS for any particular service are no higher than the XES charges to any other Xcel Energy affiliate. The costs charged for particular services are the actual costs that XES incurred in providing those services to SPS. A single, specific allocation method, rationally related to the costs drivers associated with the service being provided, is used with each cost center (billing method). In her direct testimony, Ms. Schmidt discusses the selection of billing methods and XES's method of charging for services in more detail.

Q. How are the costs of the ES VP Operations affiliate class billed to SPS?

A. My Attachment DAL-RR-B(CD) shows all of the costs in this class broken out by activity and, in conjunction with Column C in my Attachment DAL-RR-A, shows the billing method associated with each activity. My Attachment DAL-RR-A shows the allocation method (Column D) associated with each billing method (Column C) used in the affiliate class.

In SPS's 45-day case update, I will present updated Attachments DAL-RR-A and DAL-RR-B(CD) so that the entries for the last three months of the Updated Test Year provide actual data and conform to the information provided for the first nine months. In the event the predominant billing methods and associated allocation methods for the ES VP Operations affiliate O&M

expenses on my updated Attachments DAL-RR-A and DAL-RR-B(CD) differ from those discussed below, I will explain those differences in supplemental testimony in SPS's 45-day case update filing.

Q. What are the predominant allocation methods used for billing the costs that SPS seeks to recover for the ES VP Operations affiliate class of services?

A. 99.75% of the XES charges to SPS for this class were charged using one of the following allocation methods:

- Direct Billing – 32.68% of XES charges to SPS – $151,035.52;
- MWH Generation – 67.07% of XES charges to SPS – $309,961.86; and

Q. Why is the "Direct Billing" method appropriate for assigning the costs captured in the cost centers that use that billing method?

A. For the cost centers that are assigned using the "Direct Billing" method, the costs normally reflect work that was performed specifically for SPS only. In some cases, however, the direct billing occurred after the application of an off-line allocator that tracks the relevant cost drivers. In either situation, the cost centers charged using the "Direct Billing" method are appropriate because the assignment of costs is in accordance with the distribution of benefits for the services received. For example, the costs related to labor and employee expenses for trips and time spent specifically for SPS were assigned using the "Direct Billing" method. The cost of these services benefitted SPS, the work was performed specifically for SPS alone, and the cost driver is management of generating facilities. Thus, the "Direct Billing" method is appropriate because it assigns costs in accordance with cost causation and benefits received. For the cost centers that assign costs using

Direct Billing, the per unit amounts charged by XES to SPS are no higher than the unit amounts billed by XES to other affiliates for the same or similar services and represent the actual costs of the services.

Q. Why is it appropriate to allocate costs based upon the "MWH Generation" method for the costs captured in the cost centers that use that billing method?

A. Cost Center 200138, which uses the "MWH Generation" method as the allocator, captures the costs associated with labor and non-labor costs of performance analysis, specialists and analytical services provided to the Operating Companies' generation facilities. The costs in the ES VP Operations class that are associated with training and seminars are assigned using this billing method because its costs are directly related to the support of power plants. Thus, allocating costs based on the MWH Generation method is appropriate for the allocation of costs to affiliates because it allocates costs for the services in accordance with cost causation and the distribution of the benefits of the services received. For the cost centers that assign costs based upon this billing method, the per unit amounts charged by XES to SPS as a result of the application of this billing method are no higher than the unit amounts billed by XES to other affiliates for the same or similar services and represent the actual costs of the services.

Q. You have covered the allocation methods used to bill 99.75% of the costs associated with this affiliate class. Why have you not specifically covered the remaining 0.25% of the costs of this class?

A. I have described the predominant allocation methods associated with this affiliate class. The remaining costs are billed using two different allocators, no one of which is used to bill more than 0.25% of the costs. In light of the number of remaining allocators, cost centers (billing methods), and relative dollar amounts, I have not gone into a detailed discussion of these other allocation methods in order to keep the discussion to a manageable level. The cost centers (billing methods) used to charge the remaining 0.25% of the costs in this class, however, are presented in my Attachment DAL-RR-B(CD), discussed earlier. A reader may reference that attachment and then refer to the specific cost center (billing method) summary provided in Ms. Schmidt's Attachment MLS-RR-13(V) for an explanation of the particular allocators used and the cost drivers for the activities reflected in that particular cost center.

Q. Have you determined that the costs reflected in the remaining 0.25% of costs associated with this class of services have been billed using an appropriate billing method and allocation method?

A. Yes. I, or one of my staff working at my direction, have reviewed each of the cost centers and the associated allocators used to bill the remaining 0.25% of the costs of this class. The cost drivers reflected in the allocation method used to bill the costs of each cost center (billing method) are consistent with and reflect the cost drivers of the services captured in each particular cost center (billing method).

Therefore, the billing methods and allocation methods are appropriate because the allocation of costs is in accordance with the distribution of the benefits received by SPS and are no higher than the per unit costs charged to other affiliates for the same or similar types of services.

XIII. SPS POWER PLANT O&M PROGRAMS

Q. Please describe SPS's O&M programs that help ensure generation efficiency.

A. SPS employs a number of strategies to control costs and ensure generation efficiency including: (1) scheduled routine maintenance practices; (2) predictive maintenance practices; (3) performance assurance programs; and (4) training of maintenance personnel and plant operators. The objective of these activities is to reduce O&M expenditures while maximizing unit availability. Improved unit availability allows system operations to optimize generation through increased use of the most cost-effective units.

A. Scheduled Maintenance Practices

Q. Please describe SPS's power plant maintenance program.

A. SPS uses a computerized maintenance information system software program to manage its power plant maintenance activities. This system integrates: (1) maintenance requests submitted by power plant personnel; (2) maintenance progress tracking; (3) man-hour time reporting; (4) parts inventory management; (5) scheduled maintenance; and (6) maintenance history. It also enables operators, maintenance personnel, engineers, and other technical staff to identify, prioritize, plan, coordinate, and schedule maintenance activities for power plants. This system allows SPS operators and maintenance personnel to work together as a team toward the common goals of minimizing operating costs, maximizing unit availability, and complying with environmental regulations. Additionally, SPS uses project management software programs such as PLEXOS, Microsoft Project, and Primavera P6 to ensure efficient maintenance scheduling.

Q. Please describe SPS's scheduled maintenance practice.

A. SPS uses an equivalent, nine-year cycle on its major component inspections, unless specific circumstances warrant more or less frequent inspections. Under this practice, all components in a turbine are inspected within a nine-year cycle of equivalent operating time. Actual durations vary and inspections may occur more or less often if component history, industry information, component assessment, projected retirements, and unit operations warrant an extension or reduction in the duration.

Maintenance on SPS's turbine generators is done on a component basis. Instead of a less frequent complete unit major overhaul (which involves disassembly, inspection, and repair of all major components of the turbine generator at once), individual sub-components of the turbine generator are overhauled on a more frequent basis. This practice allows for more stable maintenance costs from year to year, and provides a higher average level of unit availability. Additionally, boilers are inspected and overhauled on a three-year cycle. When a unit must be shut down for boiler maintenance, SPS may take advantage of that outage to do component turbine or generator maintenance as well.

Q. Is the overhaul frequency the same for all units?

A. No. Generally, both steam and combustion turbines follow manufacturer recommendations. But some units are scheduled for maintenance on a more frequent basis due to operational concerns or the nature of the unit design specifications. SPS has a combustion turbine maintenance system that tracks the

hours of operation and number of starts and trips and correlates that with total hours of operation. When a unit reaches the OEM recommended hours of operation, maintenance inspection and repairs are performed. SPS uses a similar method of tracking maintenance requirements for steam turbines. Additional hours of operation are added to the total hours when the units are cycled.

One example of a change to SPS's overhaul frequency due to the nature of a unit's design specifications occurred with respect to Tolk Unit 2's nozzle block during the February 2017 overhaul. The OEM recommended inspecting the nozzle block bolting every 50,000 hours of operation. With this recommendation the inspection frequency would be every 5.7 years and none of the other components would be required to be inspected during this time. However, during SPS's February 2017 overhaul of Tolk Unit 2, SPS installed a new nozzle block design that would not require bolting inspections. With the new slide-in nozzle block installation, all the hold down bolts were eliminated. The new design has an equivalent operating cycle extended to a nine-year inspection interval, which matches the inspection recommendations for the high pressure/intermediate pressure turbine.

Another recent example of an OEM recommendation occurred at the Cunningham 3 and 4 units. The original generator cooling fan design had limited life and can fail without warning. The new Siemens design has a two stage set of blades and is currently being installed in Cunningham 3. Cunningham 4 will receive the upgrade during the generator rewind scheduled in 2020. The new

blade design will extend the life of the cooling fan without concern of sudden failure.

An example of overhaul frequency being influenced by operational concerns is that coal-fired units, which may experience boiler slagging, usually require more frequent maintenance than gas-fired plants. Slagging is the formation of molten or partially fused deposits on the furnace walls or surfaces and forms when ash deposits are exposed to the radiant heat of the coal flames. These deposits are removed to recover the efficiency of the unit.

Q. How does SPS's scheduled maintenance practice affect system operations?

A. Scheduling outages on a component basis rather than incurring a complete unit outage results in higher availability because problems that occur due to normal degradation can be identified and corrected much sooner and with less disruption to the plant as a whole. Also, the manpower needs for a component outage are less than for a major outage. This reduces the need for outside contractors or higher internal staffing levels for scheduled outages. The ability to minimize the scheduled outage time of units provides more options to minimize costs to SPS's customers by increasing efficiency and maintaining the availability of these units. Minimizing outage times also provides SPS with more options to meet load and increases system reliability.

B. Predictive Maintenance Practices

Q. What is predictive maintenance?

A. Predictive maintenance is the process of analyzing equipment operations for degradation and performing maintenance at a cost effective time, prior to failures

that could be more costly. If maintenance is performed too frequently, reliability remains very high, but maintenance costs can be higher than required for that level of reliability. If maintenance is performed too infrequently, then problems can go undetected and unaddressed – resulting in decreased reliability and increased repair costs once the problem emerges. SPS is a strong proponent of taking a proactive approach with our predictive maintenance programs rather than being in a position where we are simply reacting to failures.

Q. Please describe the tools SPS uses in its predictive maintenance program.

A. SPS uses several tools to help identify problems before forced outages occur. A performance assurance program is employed in which the steam turbine and the parameters of the steam turbine cycle are evaluated for problems that may require maintenance. Performance testing, as a predictive maintenance tool, is used to prevent problems that may result in a forced outage. This program allows the maintenance department to gather data from the performance test and act on that data by, for example, ordering parts and materials so that they can be prepared for an anticipated outage.

As part of the performance assurance program, a Valve Wide Open Test is performed with the unit on-line. The information obtained from this test allows the Performance Monitoring organization or power plant personnel to quantify the amount of degradation that has occurred since previous tests. If the level of degradation is large, then plant personnel can spend the needed time during the outage to identify and resolve any problems. Heat balance tests are scheduled every two to three years depending on the outage schedules for the major units

(> 200 MW). This ensures that the units that have the greatest effect on fuel costs are tested frequently. Minor units that have high capacity factors are scheduled for testing approximately every five years depending on need and resource availability. Peaking and low capacity factor units are not routinely tested as their use is based on need for capacity and not on economical generation.

Steam-path analysis is another tool SPS uses for predictive maintenance purposes. During a scheduled turbine outage, the steam-path areas of the turbine are thoroughly inspected. By taking precise measurements and conducting a detailed inspection, components are evaluated for wear, deposit buildup, foreign object damage, and steam leakage. A steam-path analysis will identify components that should be replaced to prevent a forced outage or improve the efficiency of the unit.

Vibration monitoring is another predictive maintenance tool utilized by SPS. Because vibration is recognized as an early indicator of problems in rotating machinery, SPS has installed continuous vibration detection and protection on critical equipment, such as large turbine generators, large boiler feed pumps, and cooling tower fans. SPS collects computerized periodic vibration data. This data can be used to monitor and trend vibration problems.

SPS has invested in nondestructive examination capabilities by training and qualifying personnel in magnetic particle nondestructive examination. This enables SPS to determine the condition of components in a power plant without damage to the component being inspected. SPS has the capability to use several qualified nondestructive examination techniques, such as magnetic particle, dye

penetrant, ultrasonic, eddy current, and x-ray. Each technique has a special application to identify components that could cause failure.

Generator tagging is another useful predictive tool that can provide early information of localized overheating in the generator. Used on the gas-cooled generators at Jones, Tolk, and Harrington, generator tagging involves painting or tagging different locations in the generator with various tagging compounds. If localized overheating occurs while the unit is on-line, a device called a generator condition monitor senses the condition and gives an alarm to the operator. A gas sample from the generator containing molecules of the burned tagging compound can be taken from the generator and the location of the overheating can be determined before entering the generator. This advanced warning system not only minimizes generator damage in the event of overheating, but also assists maintenance personnel in determining the location of the overheating and the steps to correct the overheating before disassembly of the generator.

Dissolved gas and oil testing, a predictive maintenance tool used for transformer condition assessment, enables SPS to identify localized overheating and insulation defects in oil-cooled transformers at the incipient stage so that repairs can be planned in conjunction with a scheduled outage of the unit. Early awareness of potential localized burning in the transformer can help prevent catastrophic forced outages of generating units. This testing involves taking oil samples from the transformer for evaluation by SPS's analytical chemistry lab for the presence of several gases, as well as degradation of insulation materials.

Knowledge of how the different gaseous compounds are formed and trending analyses are used to interpret the data and detect problems before failure.

In addition to testing transformer oil, lubrication oils for the plants are sampled and tested. Lubrication oils are tested once per year for indication of oil degradation and unusual machine wear. Analyses include measuring oxidation resistance and the presence of wear metals. In addition to yearly testing, major rotating equipment is tested at least every six months at all facilities for indication of corrosion or contamination.

With regard to plant water chemistry, water samples are used to predict areas for corrective action. Automatic analyzers constantly measure the quality of the boiler feedwater, boiler water, and steam. Small amounts of impurities can be detected, which when immediately addressed, prevent costly long-term damage to the boiler and turbine equipment. Water samples are taken from every water source in each plant for indication of operational and maintenance problems as well as unusual corrosion conditions.

Another predictive maintenance tool SPS uses is insulation resistance testing of motors. An insulation resistance test is performed by applying a high voltage (at least twice the rated voltage) direct current to the motor windings. The test is conducted on motors during a scheduled outage, and the data obtained provides three alternative courses of action. If the data shows the insulation to be in good condition, then no action is necessary and repeat testing can be done at the next scheduled outage. If the data shows marginal results, the motor is disassembled, cleaned, and retested. Lastly, if the data indicates an imminent

failure, the motor is repaired or replaced. The advantage of this predictive tool is that repairs can be done during a scheduled outage, and a forced outage can be avoided.

C. Performance Assurance Programs

Q. Please explain SPS's performance assurance programs.

A. Performance assurance programs are all activities undertaken to achieve optimum operating efficiency of SPS's power generating facilities.

Q. Please summarize SPS's policy relating to efficient operation of its plants.

A. SPS maintains an ongoing policy of monitoring its power plant performance, improving unit efficiency, and determining cost-effective ways to save on fuel and base rate costs for its customers. The Performance Monitoring department monitors, maintains, and recommends changes to enhance the operational performance of SPS's power plants. This group constantly evaluates unit operational conditions and identifies opportunities to improve availability and reduce process emissions based upon design and/or best achievable conditions. Over the years, SPS has developed performance assurance practices to maximize efficiencies by studying and evaluating the latest technologies in plant maintenance and/or operations. These technologies are then adapted to the unique power plant designs in SPS's system if technically and economically feasible.

The application of performance assurance practices to optimize power plant efficiency, availability, and reliability is not new to SPS. Since the early 1950s, SPS has had performance assurance practices in place to ensure that reliable electricity is generated at the lowest reasonable cost. These practices

have resulted in an increasingly sophisticated testing program to monitor and improve power plant efficiency. The following is a list of the various testing and analytical services that SPS's performance testing staff currently provides:

- Power Plant Thermal Performance – Unit Cycle Testing;
- Development of Dispatch Performance Curves;
- Component Testing;
- Environmental Emissions Testing; and
- Independent Power Producing Facilities Capacity Testing.

Q. What indicators are available to monitor plant equipment and process performance?

A. Heat rates, unit availability, and process emissions are the primary indicators of unit performance. SPS uses these indicators in assessing the performance of its generation fleet.

Q. What other technology does SPS use to monitor generating fleet performance?

A. Energy Supply's M&D Center was established in 2014 to monitor the performance and health of SPS's generating fleet. M&D technology is used to help detect plant abnormalities before they result in equipment failures and lost generation. The M&D Center offers the potential to improve plant reliability, optimize performance, and minimize repair costs. Tolk Station and Harrington Station have been monitored by the M&D Center since January 2014. Jones Station Unit 1 and Unit 2 have been monitored by the M&D Center since September 2016.

The M&D Center is in the process of developing the needed models for monitoring the new wind turbines for the Hale Wind Project. The M&D Center expects the diagnostic services to the facility to be operational by February 2020. Once the system is operational there will be around 200 points of data for each turbine monitored that will alert operations of any operational issues.

Q. Please compare SPS's largest units' actual versus design heat rates.

A. The following definitions will be helpful to understanding this comparison:

***Average Net Heat Rate* is defined by SPS as:** The fuel consumption in British thermal units ("Btu") divided by the net generation in kilowatt hours ("kWh"). Both the fuel consumption and the net generation are totals for the applicable time period. This heat rate is sometimes referred to as the operating or accounting heat rate.

***Adjusted Design Net Heat Rate* is defined by SPS as:** The design net heat rate is estimated at the average load and adjusted for major equipment performance degradation and/or deviation from the manufacturers' design when the equipment was placed in service. This value approximates a unit's best achievable heat rate at the present time.

The average net heat rates for SPS's largest units during the Test Year are provided below and have been compared to their adjusted design net heat rates.

Table DAL-RR-17
Large Unit Heat Rates during the Test Year

Unit	Average Net Heat Rate (Btu/kWh)	Adjusted Design Net Heat Rate (Btu/kWh)	Percent Difference (%)
Harrington 1	10,800	10,511	2.76%
Harrington 2	10,505	10,337	1.62%
Harrington 3	10,543	10,382	1.56%
Tolk 1	10,729	10,412	3.05%
Tolk 2	10,343	10,334	0.08%

Q. How did SPS calculate the adjusted design net heat rate?

A. Monthly average loads were determined for each unit and then compared against original design heat rate curves for the units. In previous years, SPS calculated the design net heat rate using the average load for the entire test year. The monthly calculation method should produce a more representative result of adjusted design heat rate when compared to calculating one design heat rate value for the entire test year. Then, adjustments were applied to correct for degradations to boiler and turbine efficiencies. The degradation factors are time-based factors related to unit age and time between overhauls.

Adjusted design fuel usage was calculated on a monthly basis and then totaled for all months. The total adjusted design fuel usage was then used along with the total MWh to calculate the overall adjusted design heat rate values for the Test Year.

Q. Please explain the results shown in Table DAL-RR-17.

A. As can be noted from Table DAL-RR-17, the operating heat rates (i.e., Average Net Heat Rate) for SPS's largest units during the Test Year were within approximately 3% of the best achievable target or the adjusted design net heat

rates. Tolk Unit 1's heat rate has always been higher than Tolk Unit 2's because the shared systems between both units are applied to Unit 1.

The Average Net Unit Heat rate is affected by several factors such as unit loading, measured generation, measured fuel consumption, measured fuel heating value, and overall process degradation. Heat rate determination is subject to measurement errors due to several factors including: type of instruments used, number of test points collected, and condition of the equipment being tested. SPS works to minimize uncertainties associated with power and fuel measurement through frequent calibration of measurement devices and installation of more accurate measurement devices.

Economic dispatching of SPS's units results in unit operation that varies from minimum load to full load. It is difficult to account for these variations in load when considering a design heat rate. Design heat rates are typically associated with a particular load point. Generally, operation at less than full load results in higher heat rates than under full load operation. Caution is advised when comparing a heat rate at any specific load point with an average heat rate, which includes start-up fuel consumption, low load operation, and station power. Heat rate is greatly affected, usually negatively, by variations in unit loading.

Q. Does the heat rate of a generating unit deteriorate over time?

A. Yes.

Q. Why does that deterioration occur?

A. Heat rate is a measure of the efficiency of a unit. There are many factors that cause the efficiency of a generating unit to deteriorate. The following are some major reasons that plant performance becomes less optimal over time:

- deposits, erosion, and foreign object damage to turbine rotating and stationary blading;
- excessive seal clearances on the turbine blading, which allow steam to bypass the blading;
- buildup of deposits on and between boiler tubing, which reduces heat transfer and increases fan horsepower requirements;
- oxidation inside boiler tubes, which also reduces heat transfer through the tubes;
- plugging and oxidation of air preheaters, which reduce heat transfer from flue gas to incoming air and also increase required fan horsepower;
- oxidation and deposits on (and/or in) feedwater heater tubes, which reduce heat transfer from the extraction steam to the feedwater;
- erosion or holes, or both, on the partition plates in feedwater heaters, which allows feedwater to bypass the heaters;
- pump performance degradation due to increased seal clearances and/or impeller erosion;
- corrosion of inner surfaces of piping, which increases friction loss;
- steam or high-energy water leaking through valves and/or steam traps, which develop leaks over time;
- oxidation and deposit buildups on condenser tubes, which reduce heat transfer through the tubes; and
- deterioration of cooling tower due to ice damage, algae growth, and other issues, which reduces heat transfer between air and water.

The efficiency of a generating unit decreases over time, but some tasks can be performed to regain most of the lost efficiency. For example, boiler tubes

can be cleaned, turbine blade damage can be repaired, new turbine seals can be installed, and leaking valves and steam traps can be repaired or replaced. SPS currently has programs specifically designed to implement these tasks. Moreover, as described in this section, SPS works to maintain and improve the efficiency of its generating units.

Q. Has SPS implemented any plant performance assurance projects that have resulted in customer benefit?

A. Yes. The following capital projects are a few examples that were completed during the Updated Test Year and are typical of SPS's on-going efforts to maintain optimal performance:

- Harrington 3: Replace Boiler Economizer
- Harrington 3: Replace Air Preheater Baskets
- Harrington 2: Replace Air Preheater Baskets
- Harrington 2: Replace #3 High Pressure Feedwater Heater
- Harrington 2: Replace Superheat Spray Valves
- Harrington 2: Replace Boiler Corner Tubes
- Tolk 2: Replace Control Stage Turbine Blades
- Tolk 2: Replace Reheat Outlet Terminal Tubes
- Tolk 2: Replace Boiler Burners
- Tolk 2: Replace Baghouse Bags
- Tolk 1: Replace #1 Feedwater Heater Valves
- Maddox 1: Replace Air Preheater Baskets and Seals
- Maddox 1: Replace Boiler Hot Reheat Terminal Tubes
- Maddox 1: Replace #1 High Pressure Feedwater Heater

- Cunningham 2: Replace Boiler Burner Tilts
- Plant X4: Replace Superheat/Reheat Spray Auto Block Valves
- Plant X3: Replace Superheat/Reheat Spray Block Valves
- Jones 1: Replace Cold Side Air Preheater Baskets
- Jones 1: Replace Boiler Feedpump Element

In addition to capital projects, SPS routinely performs O&M projects that benefit performance. Some examples are:

- Boiler Grit Blasting & Chemical Cleaning
- Air Heater Washing
- Condenser Tube Cleaning
- Turbine Blade Repairs

These measures benefit SPS customers by ensuring that the units are running efficiently, which minimizes fuel costs.

Q. Are there any other programs SPS uses for performance assurance?

A. Yes. SPS uses a turbine steam-path analysis program and other performance test methods in its performance assurance program.

Q. Please describe the turbine steam-path analysis program.

A. The purpose of this ongoing program is to economically optimize the performance of steam turbines through sound maintenance practices. The analysis consists of two phases: (1) pre-inspection test data is collected and analyzed for indications of turbine performance degradation; and (2) during the overhaul, numerous measurements and observations are made to further evaluate the condition of the turbine. After appropriate engineering and economic analyses are completed, repairs are made, if economically justified.

During the pre-inspection analysis, performance test data is analyzed for the following steam-path problems: solid particle erosion, foreign object damage, deposits, and steam-path leakage. As problems are identified, the extent of the damage and the probability of the component's failure are evaluated. The projected effect of these problems on fuel costs is also determined. With this knowledge, a determination is made as to which components may need to be replaced and the repair procedures needed. The pre-inspection information is then furnished to the plant maintenance department for scheduling repairs, ordering parts, and preparing repair procedures. During planned overhauls, further inspections such as steam-path audits are made to determine the extent of damage and repairs required to bring the equipment back to design condition.

When the turbine is disassembled for inspection, the following evaluations are performed:

- Turbine nozzle and blade erosion and damage are assessed. Measurements are taken for throat and pitch dimension. The effect of these problems on heat rate is established;

- Measurements are made to determine deposit thickness and the degree of coverage on nozzles and blades. The result of excessive deposits on heat rate is calculated;

- Steam seal and steam packing clearances are measured, and the alignment of rotating and stationary components is evaluated. Their effect on heat rate is calculated; and

- The measurements and calculated values are used to cost justify the repair and/or the replacement of worn or damaged components.

Q. What are the costs of implementation and the estimated financial benefits resulting from the steam-path analysis program?

A. The steam-path analyses were conducted by SPS performance engineers. Steam path audits were conducted on Tolk Unit 1 in September 2018 for the Low Pressure ("LP") turbines, Jones 2 in January 2019 for the LP turbine and Harrington Unit 1 in February 2019 for the LP turbine. Table DAL-RR-18 displays potential fuel savings identified as a result of this inspection.

Table DAL-RR-18
Potential Improvements from Steam Path Audits

	Potential Annual Fuel Savings (Total Company)	Capacity Recoverable (kilowatt)	Heat Rate Improvement (Btu/net-kWh)
Tolk 1 LP Turbine Audit	$244,045	4,674	81.9
Jones 2 LP Turbine Audit	$37,588	740	29
Harrington 1 LP Turbine Audit	$136,901	1,775	46

Q. Please describe the other performance test methods SPS uses in its performance assurance program.

A. SPS also uses the following test methods in its performance assurance program:

- **The Unit Heat Rate Test.** SPS currently uses two different test methods to determine the net unit heat rates for its units. The two methods are the input-output method and the heat balance method. As indicated previously, heat rate is a measure of unit efficiency.

- **The Variable Throttle Pressure Operation Test.** This test determines the operational mode that results in the optimum heat rate throughout the load range. This testing helps define how boiler pressure can be reduced at lower loads to improve unit heat rate. Heat rate improves because: (i) there is less pressure drop across the turbine steam admission valves; and (ii) less power is required to pump the feedwater into the boiler drum.

- **The Unit Equipment Condition and Efficiency Test.** These tests measure energy in and energy out. The results are compared with

previous test results and/or design efficiency. For major plant equipment within the steam cycle, efficiency tests are periodically conducted to determine if there has been any degradation in the performance of the components, such as a boiler feed pump, condensate pump compressor, cycle heat exchanger, or cooling tower. From the results of this test, the cost benefit for replacing or reconditioning equipment parts can be evaluated, which enables SPS to make informed decisions.

D. Training of Plant Operators and Maintenance Personnel

Q. Do SPS plant operators receive training in efficient operating practices?

A. Yes. Every plant operator receives training to operate the plant equipment reliably, efficiently, and safely. No operator is allowed to perform operating duties or is promoted to a higher level until successfully completing the required training and passing the appropriate tests. Each test consists of a written and demonstration portion.

Q. Briefly describe SPS's power plant training programs.

A. Power plant personnel are required to complete a three- to four-year apprentice program depending on the individual's progress. Training includes classroom, computer-based, programmed text, video, and on the job training. Apprenticeships are available in the areas of Operations, Maintenance, Electrical, Instrument, Technician, and Chemist Technician programs. Following apprentice training, power plant personnel are continually provided training in their area of operations. SPS provides operator refresher and scenario training on an on-going basis. Operator refresher training reviews all of the major systems and cycles every three to four years. Scenario training is conducted about once a month with a simulator to go through "what if" scenarios in the plant.

The Power Plant Engineer training program is designed to guide the new engineer through a six-year development plan with a goal to have a well-rounded power plant engineer ready to be considered for the full performance level Engineer "C" role by the end of the six-year period. The program is designed to take a relatively inexperienced engineer and expose them to all facets of power plant operations. It includes role-specific formal power plant training classes such as Power Plant Fundamentals, Heat Rate Analysis, Predictive Maintenance, and Equipment and Plant Balancing. This is followed by numerous training modules specific to the systems in their assigned power plant. Also incorporated are formalized rotational on-the-job training assignments in Operations, Maintenance, Environmental, and Chemistry. In addition, rotations outside the department, including at other power plants, and other engineering departments are required. To maximize the engineer's ability to work within the Xcel Energy accounting and budgeting environment, the training also covers the use of financial software systems. Other topics include numerous safety-related modules, time management, and project management. For professional development, the program includes a completion requirement of an Engineer-in-Training program. As components of the program are completed, participants become eligible for promotional consideration to Engineer "B" and "C" positions in the Plant Engineering and Technical Support organization. To assist in identifying and coordinating training, SPS has formed a Regional Training Activity Committee that includes at least one member from each power plant and from each of the following disciplines: Safety, Environmental, Engineering, Management, and

Human Resources. This committee meets quarterly to discuss the training needs for each SPS plant.

XIV. RESULTS OF SPS'S O&M PRACTICES

Q. Are there indications that SPS's O&M practices are effective?

A. Yes. Several comparisons indicate that SPS's practices are highly effective. First, Attachments DAL-RR-4, DAL-RR-5, and DAL-RR-6 graphically display the EAF of SPS's coal-fueled plants, Tolk and Harrington Stations, and its larger gas-fueled units compared with the national average from the North American Electric Reliability Corporation/Generating Availability Data System ("NERC/GADS") for historical periods. EAF is the ratio of the time a unit was available for full-load operation (or at full capacity) over the time a unit was planned to be available for such operation expressed as a percentage. A higher EAF indicates higher unit availability. These attachments demonstrate that SPS's coal-fueled units have historically had a higher availability than the national average for comparably sized units. SPS's gas-fired units generally track the national average for comparably sized units.

Second, Attachments DAL-RR-7, DAL-RR-8, and DAL-RR-9 display the FORs of SPS's coal-fueled units and larger gas-fueled units compared to NERC/GADS data. The FOR indicates how much time SPS's units were off-line because of an unscheduled outage; the smaller the FOR, the better. SPS's coal units have a much better FOR than the national average. Generally, SPS's gas units have had a better FOR than the national average.

Q. Please describe Tolk's historical EAF and FOR.

A. Tolk's EAF and FOR were better than the NERC average for units of similar size in 2016 and 2017.

In comparison to NERC/GADS averages, Tolk achieved the following performance during 2016 and 2017:

Table DAL-RR-19
Tolk Operational Statistics Comparison

	NERC 2016	Tolk 2016	NERC 2017	Tolk 2017
EAF	79.52%	90.05%	77.24%	86.41%
FOR	6.56%	5.16%	9.8%	1.97%

Tolk's performance from prior years is reflected in Attachments DAL-RR-4 (EAF) and DAL-RR-7 (FOR).

Q. Please describe Harrington's historical EAF and FOR.

A. Harrington's EAF and FOR were better than the NERC average for units of similar size in 2016 and 2017. In comparison to NERC/GADS averages, Harrington achieved the following performance during 2016 and 2017:

Table DAL-RR-20
Harrington Operational Statistics Comparison

	NERC 2016	Harrington 2016	NERC 2017	Harrington 2017
EAF	76.79%	86.80%	78.91%	91.95%
FOR	9.72%	3.04%	6.44%	1.47%

Harrington's performance from prior years is reflected in Attachments DAL-RR-5 (EAF) and DAL-RR-8 (FOR).

Q. Please describe the historical EAF and FOR of SPS's gas-fueled units.

A. SPS's gas-fueled units have had an EAF better than, or comparable to, the NERC/GADS averages, with the exception of Jones 2 in 2016, when the unit was taken off line to rebuild the cooling tower due to a high wind event. Attachment DAL-RR-6 shows that SPS's gas-fueled units have generally outperformed the NERC/GADS averages since 2007. SPS's larger gas-fueled units have generally performed better than the NERC/GADS FOR averages, even though some of the

gas units have been used for peaking and cycling service, which causes greater wear and tear on the unit than other operating regimes. Attachment DAL-RR-9 shows that SPS's gas-fueled units have generally had a much lower FOR than the NERC/GADS averages since 2007.

Q. Are EAF and FOR indicators of efficient O&M practices?

A. Yes. Both EAF and FOR are indicators of efficient O&M practices because they relate to the percentage of time that the units were available and ready for dispatch to full load. Better unit availability helps ensure utilization of the lowest cost dispatchable energy.

Q. Please describe how SPS operates its units in the SPP Integrated Marketplace ("IM").

A. The SPP operates a two-settlement, locational marginal price energy market model. SPS operates its units in accordance with the SPP market optimization models. This market structure has had the effect of increasing unit starts and decreasing plant operating service hours.

Unit starts is the process of preparing the unit to come back on-line either from reserve shut down or outage. For example, with respect to a steam unit, the unit start process begins with placing the unit's equipment back into service and firing the boiler to establish the proper steam temperature and pressure. Once achieved, the turbine is rolled to predetermined speeds to warm the casing and rotor prior to synchronization speed (3,600 rpm). Once this is established, the generator is synchronized to the electrical system.

During all unit startups, there are periods when fuel is consumed before the unit generates power. These fuel costs are referred to as startup costs. Startup

costs are highest whenever a unit is cold at the beginning of the startup sequence. Startup costs are less when a unit is warm, and startup costs are lowest when a unit is hot. Whether a unit is hot, warm, or cold is defined by the number of hours a particular unit has been offline. Each unit has a specific number of hours that define a hot, warm, and cold start, which is determined by a number of factors, including unit size.

Q. Are there any other factors affecting the number of unit starts?

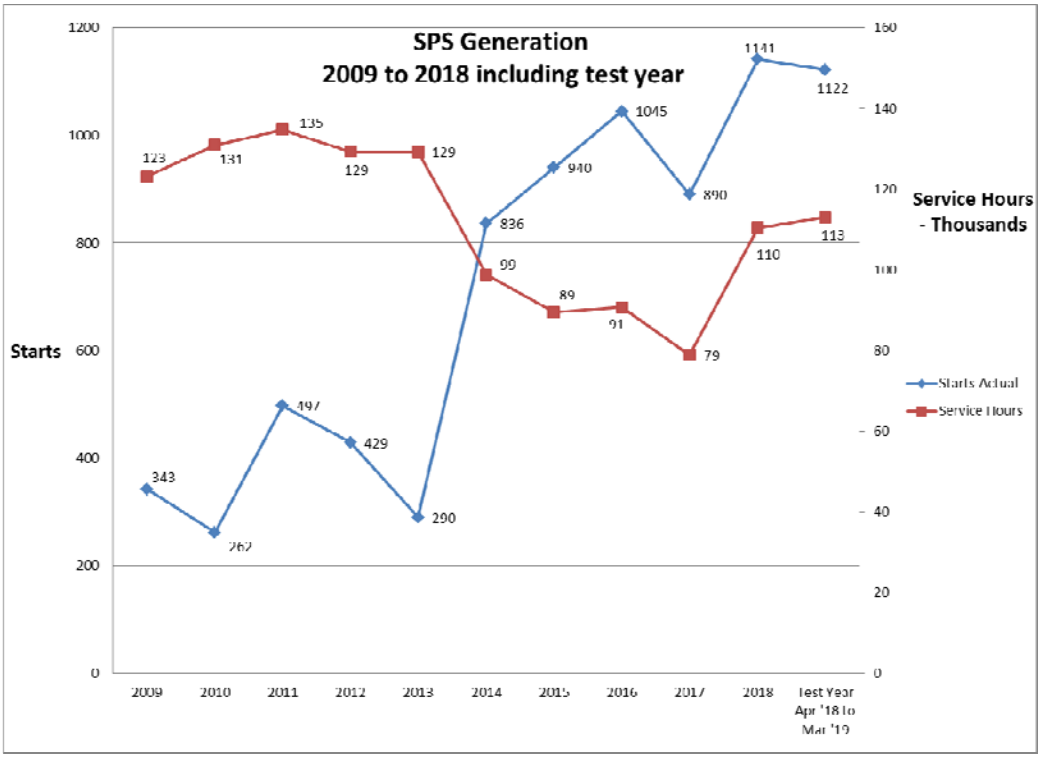
A. Yes. The increase in wind generation on the system has also caused the unit loads to swing and increased the cyclic effect on the system. Lower gas prices have also changed how the units have been dispatched over the last year. The region has experienced record low gas pricing due to the limits of the basin's available takeaway capacity. Additional gas pipelines should be in service in the fall of 2019 that will return the gas pricing back to normal.

Q. Will you please show the relationship between unit starts and operating hours?

A. Table DAL-RR-21 reflects the relationship between unit starts and operating service hours from 2009 to 2018, including the Test Year. As noted above, in general, the SPP IM has had the effect of increasing unit starts and decreasing operating service hours.

Table DAL-RR-21

SPS Unit Starts and Operating Hours 2009 - 2018



Q. How have the increases in unit starts affected the unit equipment?

A. Since the increase in starts began, the units have experienced an increase in boiler, motor, and other equipment failures. The increase in failures has resulted in increased maintenance and repair cost. For example, Maddox Unit 1, Jones Unit 2, and Plant X Units 1, 2, 3, and 4 have experienced boiler casing tears and boiler tube leaks from cycle fatigue. Motor failures occurred at Maddox Unit 2, Nichols Unit 1, and Harrington Unit 3. A generator cooling fan blade failure at Cunningham Unit 4 and hardware failure at Cunningham Unit 3 required a compressor rebuild.

Q. What effect will the increased cycling of the units have on SPS's O&M costs going forward?

A. While SPS has experienced fuel cost savings due to the IM, SPS has also experienced an increase in O&M costs associated with the increase in starts and continued cycling of the units, in addition to increases in expenses due to the advanced age of several units. Table DAL-RR-22 below summarizes the maintenance cost of SPP cycling for the SPS region. The repair cost reflects cycling failures to equipment.

Table DAL-RR-22

Summary of Maintenance Cost of SPP Cycling for the SPS Region

Facility	2017 Cost Total Company	2018 Cost Total Company
Cunningham	$ 59,137	$ 153,869
Maddox	-	18,108
Jones	230,000	56,983
Tolk	199,166	
Plant X	56,004	32,950
Harrington	-	248,680
Nichols	210,000	50,244
Total Cost	**$ 754,307**	**$ 560,834**

Q. How is cycling of the units determined?

A. Cycling of the units is based on modeling software that includes pricing information, unit heat rates, fuel cost, etc. In general, units are shut down when the SPP market optimization model has determined that the unit will not be needed the following day. There should be an economic benefit (fuel savings) when a unit is shut down for economic purposes. Unit startups are normally

triggered when the SPP model determines that a unit is an economic choice to run or if there is a system reliability improvement gained by starting up a unit.

Q. Does the IM provide a net benefit to SPS's retail customers?

A. Yes. The IM is providing a net benefit to SPS's customers. The SPP modeling software should lead to fuel cost savings when a unit is shut down for economic purposes. As stated previously, there should be a fuel cost savings each time a unit is started for economic purposes.

XV. OUTAGES

Q. Has SPS provided a summary of all generating unit outages during the Test Year?

A. Yes. In Schedule H-6.2a, SPS lists and summarizes all forced outages during the Test Year. Schedule H-6.2b lists and summarizes all planned outages during the same period.

Q. What does SPS do to bring a unit back on-line after an unplanned outage?

A. As I discussed earlier, SPS has a thorough inspection program, as well as scheduled and predictive maintenance programs for its units. SPS takes all reasonable steps to avoid unplanned outages, but occasionally events occur that are unavoidable.

When unplanned outages occur, SPS has processes and procedures in place to react quickly to get units back on-line in an efficient and safe manner. Once a unit experiences an outage, plant engineers and technical staff quickly evaluate the unit to determine what caused the outage. SPS then immediately takes steps to make any necessary repairs, considering any safety issues that may be implicated. In evaluating the problem, engineers and technical staff assess whether it is reasonable and prudent to have additional repairs or upgrades performed while the unit must remain down for repair of the initial problem. XES's Commercial Operations group assists in evaluating the cost of working overtime versus normal working hours. Depending on the unit that is out, the market pricing of the generating resources available in the IM, and various other

factors, it may be more cost effective to conduct work only during normal business hours.

Q. Were there significant operational events during the Test Year that affected the availability of SPS's generating units?

A. Yes. Of the five largest events that caused a forced outage and large loss in equivalent MWh during the Test Year, four occurred in 2018 and the other one occurred in 2019. These outages are summarized below in Table DAL-RR-23.

Table DAL-RR-23
Largest Forced Outages by MWh
April 1, 2018 to March 31, 2019

Date	Unit	Net Dep. Cap. (MW)	Type	Fuel Source	Description	Equivalent MWh
4/1/18	Tolk 1	532	Steam	Coal	Main Power Transformer Failure	716,899*
8/1/18	Cunningham 3	106	Combustion Turbine	Gas	Compressor Damage	615,758*
9/21/18	Maddox 1	112	Steam	Gas	Hot Reheat header seal box skin leak and boiler tube leaks	247,031
1/15/19	Plant X 2	90	Steam	Gas	Generator Rotor collector brushes	162,450*
10/24/18	Cunningham 4	103	Combustion Turbine	Gas	Generator cooling fan blade failure	119,510

*** Hours extend outside the April 1, 2018 to March 31, 2019 dates**

The most common events that have otherwise affected availability of SPS's units were outages caused by boiler tube leaks. During the Test Year,

twenty-five boiler tube leaks contributed to a combined total loss of 805,182 equivalent MWh during multiple forced outages.

When reasonably feasible, SPS undertakes minor upgrades and repairs to non-affected equipment during unplanned outages in order to best utilize the downtime. Typically, these minor upgrades and repairs are those that would otherwise be performed during a scheduled outage. Any work performed that is unrelated to the unplanned outage work is made with an emphasis on returning the unit to service in the most cost-effective way possible.

Q. Does this conclude your pre-filed direct testimony?

A. Yes.

AFFIDAVIT

STATE OF TEXAS)
)
COUNTY OF POTTER)

DAVID A. LOW, first being sworn on his oath, states:

I am the witness identified in the preceding testimony. I have read the testimony and the accompanying attachment(s) and am familiar with the contents. Based upon my personal knowledge, the facts stated in the testimony are true. In addition, in my judgment and based upon my professional experience, the opinions and conclusions stated in the testimony are true, valid, and accurate.

DAVID A. LOW

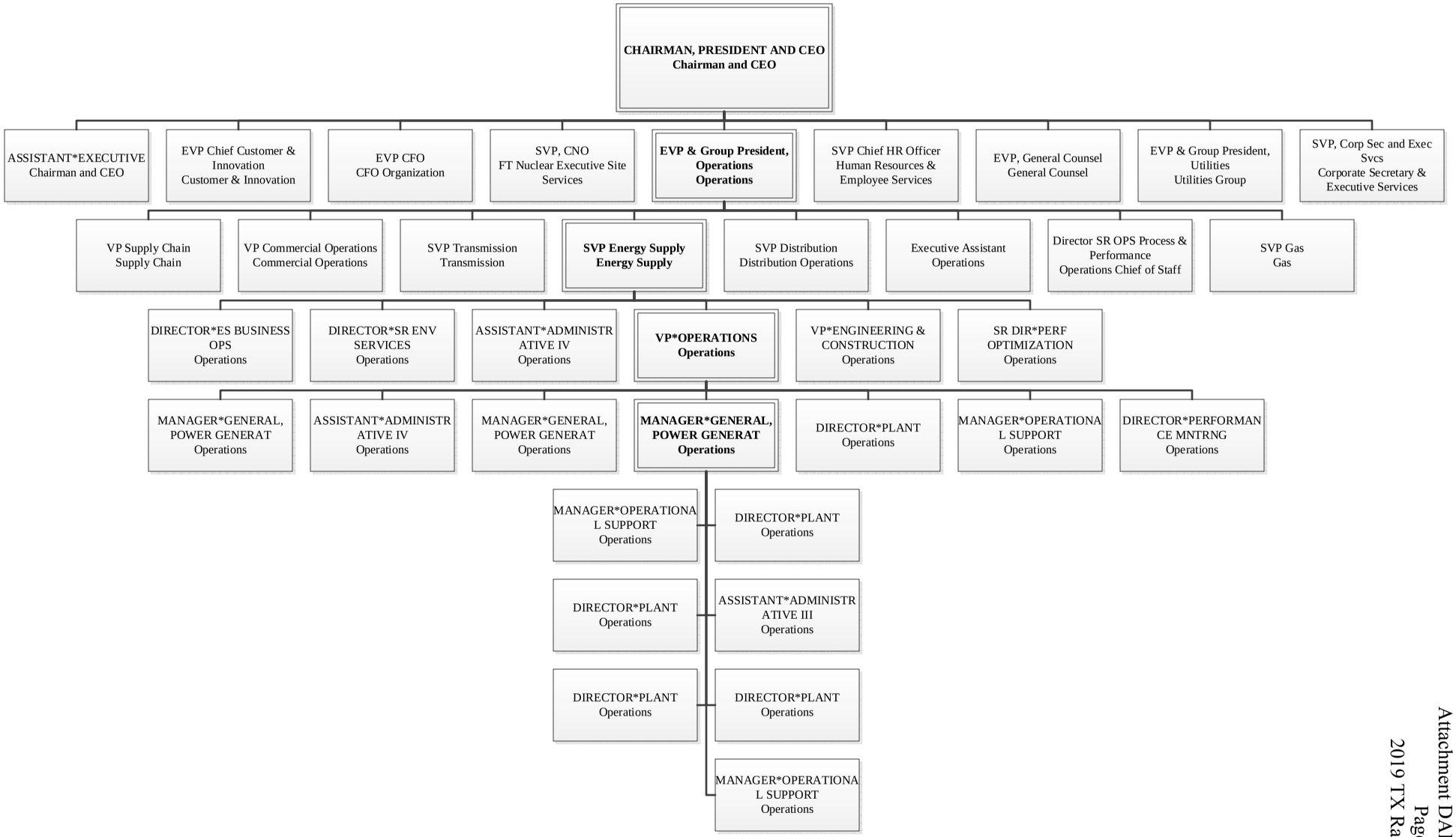
Subscribed and sworn to before me this 30TH day of July, 2019 by DAVID A. LOW.

CARRIE OLIVER
Notary Public, State of Texas
Comm. Expires 06-08-2020
Notary ID 13069198-2

Notary Public, State of Texas

My Commission Expires: 06-08-2020

Southwestern Public Service Company
Organization Chart – Energy Supply
As of March 31, 2019



Attachment DAL-RR-2(V)(HS)

Pages 1 through 1
of
Attachment DAL-RR-2(V)(HS) Service, Maintenance, and Warranty Agreement between Southwestern Public Service Company and Vestas-American Wind Technology, Inc. dated as of June 15, 2018

Are
Confidential Protected Information

CONFIDENTIAL PROTECTED MATERIALS
PROVIDED PURSUANT TO PROTECTIVE ORDER

Attachment DAL-RR-3(HS)

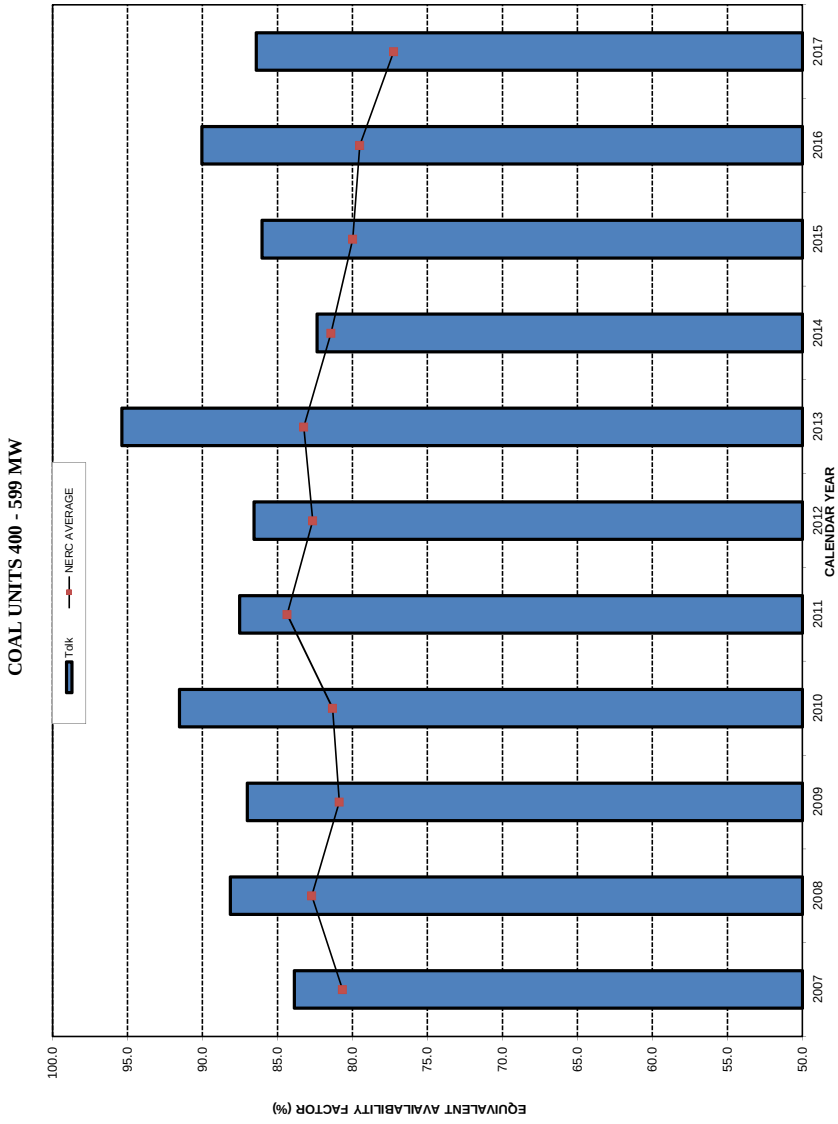
Pages 1 through 36
of
Attachment DAL-RR-3(HS)
Wind and Lease Agreeement

Are
Confidential Protected Information

CONFIDENTIAL PROTECTED MATERIALS
PROVIDED PURSUANT TO PROTECTIVE ORDER

Southwestern Public Service Company

Tolk Station Annual Equivalent Availability Factors



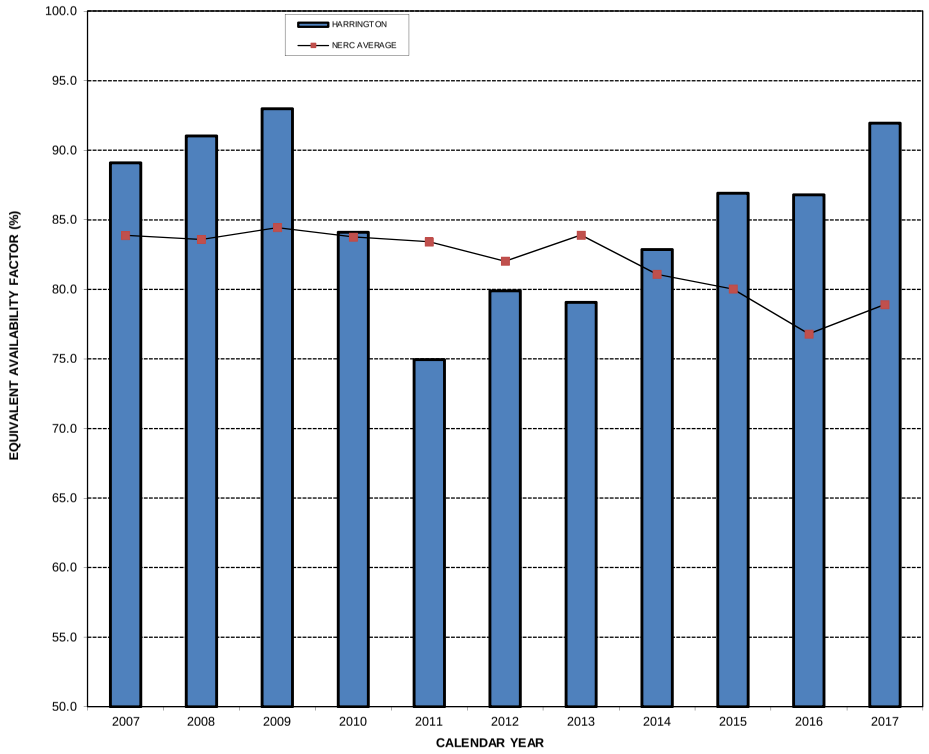
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
NERC AVERAGE	80.66	82.72	80.88	81.33	84.35	82.64	83.25	81.43	79.99	79.52	77.24
Tolk	83.88	88.14	87.01	91.54	87.52	86.57	95.37	82.37	86.04	90.05	86.41

NERC Average data taken from Generating Availability Data System (GADS) Reports - Generating Unit Statistical Brochure - All Units Reporting
http://www.nerc.com
Unit data taken from Meridian

Southwestern Public Service Company

Harrington Station Annual Equivalent Availability Factors

COAL UNITS 300 - 399 MW

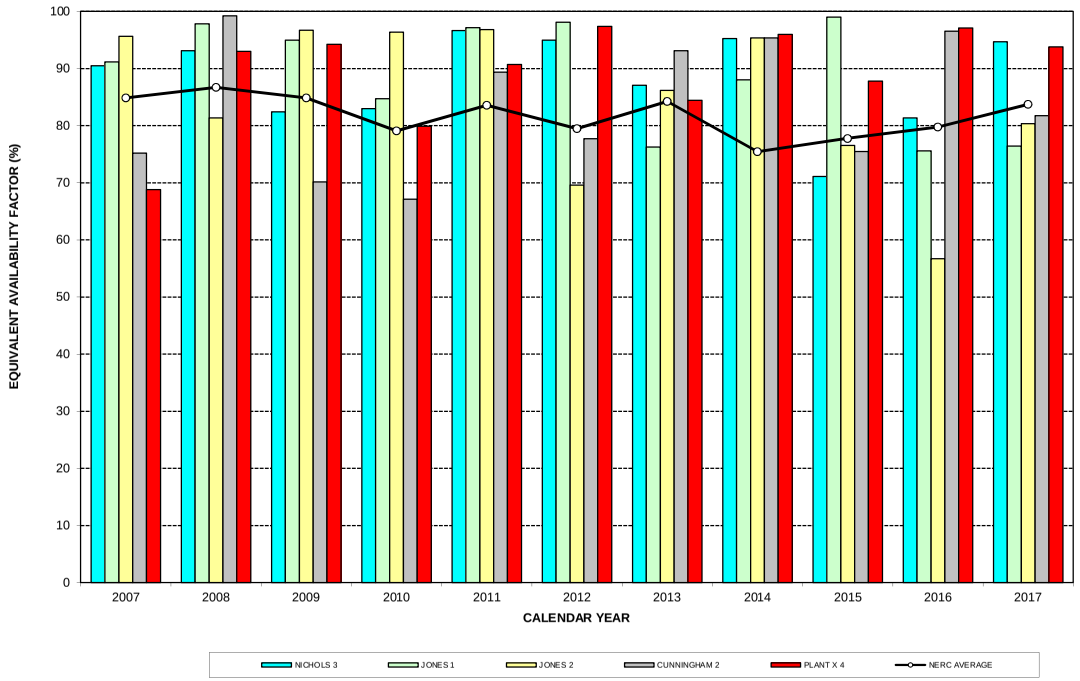


	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
NERC AVERAGE	83.9	83.6	84.4	83.8	83.4	82	83.9	81.09	80.03	76.79	78.91
HARRINGTON	89.1	91	93	84.1	75	79.9	79.1	82.87	86.92	86.80	91.95

NERC Average data taken from Generating Availability Data System (GADS) Reports - Generating Unit Statistical Brochure - All Units Reporting
http://www.nerc.com
Unit data taken from Meridian

Southwestern Public Service Company

Gas Units (200-299 MW) Annual Equivalent Availability Factors

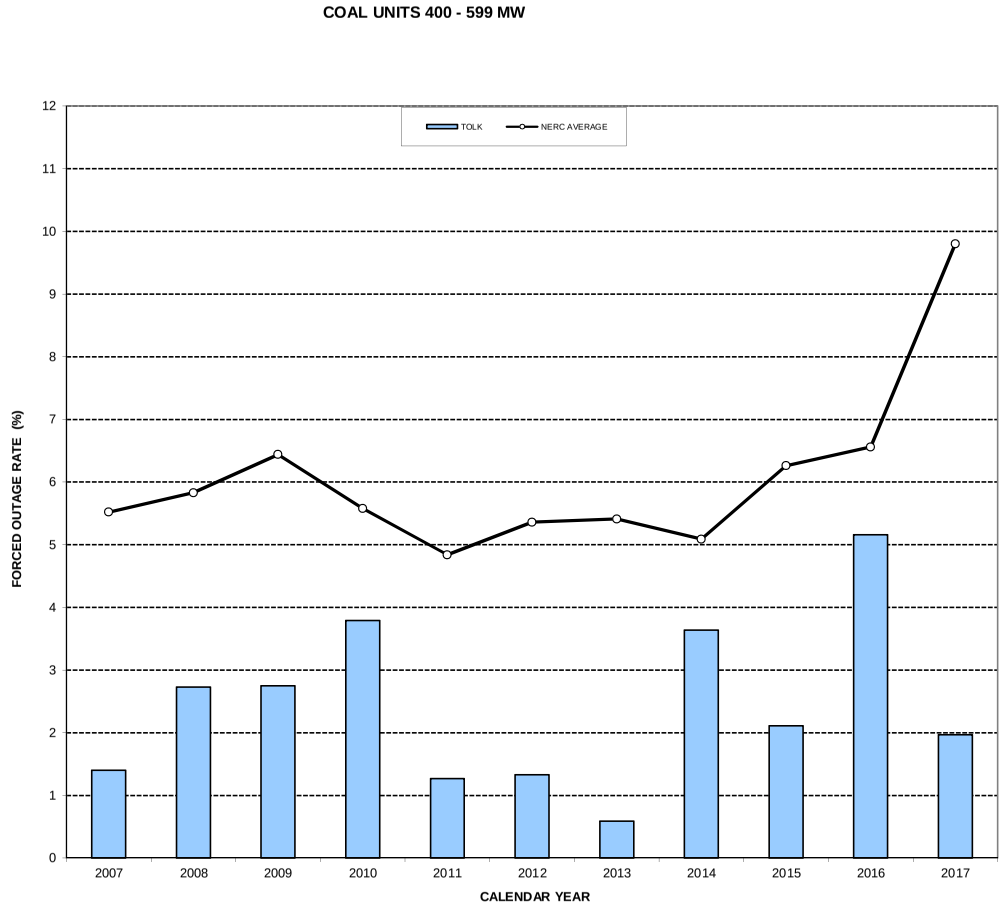


	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
NERC AVERAGE	84.86	86.74	84.9	79.13	83.6	79.48	84.25	75.47	77.79	79.76	83.75
NICHOLS 3	90.51	93.15	82.45	82.99	96.68	95.01	87.1	95.24	71.11	81.35	94.68
JONES 1	91.19	97.83	94.98	84.74	97.17	98.1	76.29	88.04	99.03	75.58	76.44
JONES 2	95.64	81.37	96.7	96.36	96.85	69.6	86.17	95.40	76.58	56.74	80.37
CUNNINGHAM 2	75.22	99.22	70.16	67.14	89.4	77.71	93.14	95.36	75.48	96.56	81.74
PLANT X 4	68.84	93.05	94.25	79.9	90.7	97.38	84.43	96.00	87.82	97.11	93.83

NERC Average data taken from Generating Availability Data System (GADS) Reports - Generating Unit Statistical Brochure - All Units Reporting (NERC Data - Gas Primary 200-299 MW range)
http://www.nerc.com
Unit data taken from Meridian

Southwestern Public Service Company

Tolk Station Annual Forced Outage Rates

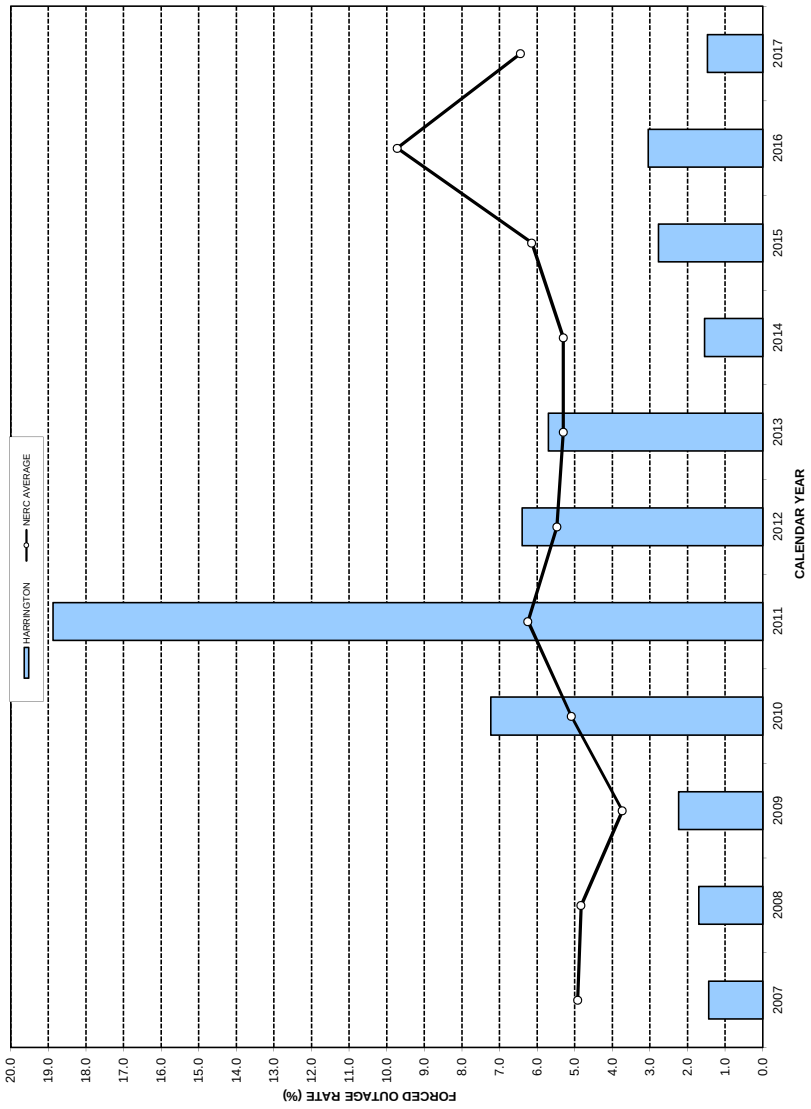


	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
NERC AVERAGE	5.52	5.83	6.44	5.58	4.84	5.36	5.41	5.09	6.26	6.56	9.8
TOLK	1.40	2.73	2.75	3.79	1.27	1.33	0.59	3.64	2.11	5.16	1.97

NERC Average data taken from Generating Availability Data System (GADS) Reports - Generating Unit Statistical Brochure - All Units Reporting
http://www.nerc.com
Unit data taken from Meridian

Southwestern Public Service Company

Harrington Station Annual Forced Outage Rates

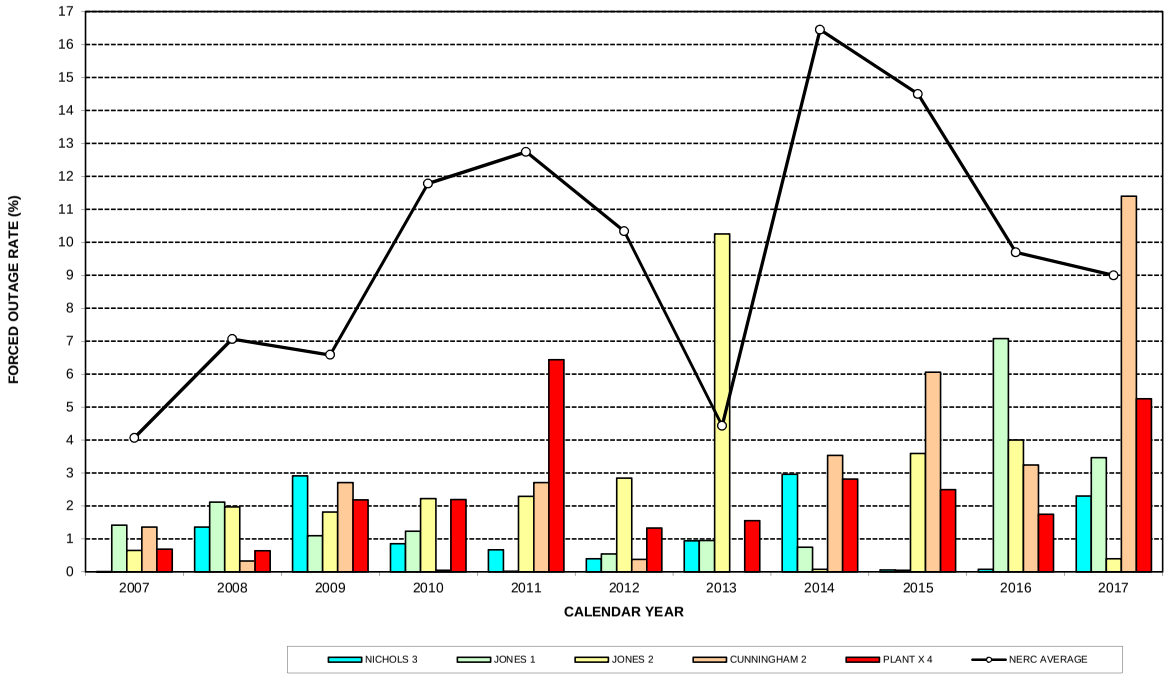


	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
NERC AVERAGE	4.92	4.83	3.73	5.09	6.24	5.47	5.30	5.30	6.14	9.72	6.44
HARRINGTON	1.44	1.70	2.24	7.23	18.87	6.40	5.70	1.55	2.77	3.04	1.47

NERC Average data taken from Generating Availability Data System (GADS) Reports - Generating Unit Statistical Brochure - All Units Reporting
http://www.nerc.com
Unit data taken from Meridian.

Southwestern Public Service Company

Gas Units (200-299 MW)
Forced Outage Rates (FOR)



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
NERC AVERAGE	4.06	7.06	6.58	11.78	12.74	10.33	4.43	16.45	14.50	9.69	8.99
NICHOLS 3	0.01	1.36	2.91	0.85	0.67	0.39	0.94	2.96	0.05	0.07	2.3
JONES 1	1.41	2.11	1.09	1.23	0.02	0.54	0.95	0.74	0.04	7.08	3.46
JONES 2	0.65	1.97	1.81	2.22	2.29	2.84	10.25	0.07	3.59	4.00	0.39
CUNNINGHAM 2	1.36	0.33	2.71	0.04	2.71	0.37	0.00	3.53	6.06	3.24	11.40
PLANT X 4	0.69	0.64	2.18	2.19	6.43	1.33	1.55	2.81	2.49	1.74	5.25

NERC Average data taken from Generating Availability Data System (GADS) Reports - Generating Unit Statistical Brochure - All Units Reporting
(NERC Data - Gas Primary 200-299 MW range)
http://www.nerc.com
Unit data taken from Meridian

Southwestern Public Service Company

SPS Native Operation & Maintenance Expenses

Total Company SPS Operation and Maintenance Expenses

Line No.	FERC Acct	Account Description	Native SPS O&M Expense through the Update Period (Jul '18-Jun '19)	Test Year Affiliate O&M Expense (Jul '18-Jun '19)	Total Company Requested O&M
	Production				
1	**500**	**Operation Supervision and Engineering**	**$ 1,432,129**	**$ 742,754**	**$ 2,174,883**
2	501.35*	Coal Non-Mine; Non-Freight	34,515,666	-	34,515,666
3	**501.70**	**Coal Ash Sales**	**(1,970,658)**	**1,329,592**	**(641,065)**
4	**502**	**Steam Expenses**	**10,433,079**	**(16,011)**	**10,417,068**
5	**505**	**Electric Expenses**	**9,674,863**	**214**	**9,675,077**
6	**506**	**Miscellaneous Steam Power Expenses**	**7,064,766**	**5,374,135**	**12,438,901**
7	**507**	**Rents**	**1,391,316**	**4,419,144**	**5,810,460**
8	**509**	**Steam Operation SO2 Allowance Expense**	**124,830**	**-**	**124,830**
9	**509.02**	**Allowances - NM Nox Expense Amortz**	**(2,340)**	**-**	**(2,340)**
10	**510**	**Maintenance Supervision and Engineering**	**1,452,197**	**4,910**	**1,457,107**
11	**511**	**Maintenance of Structures**	**4,825,180**	**1,534**	**4,826,713**
12	**512**	**Maintenance of Boiler Plant**	**16,817,025**	**1,019,257**	**17,836,282**
13	**513**	**Maintenance of Electric Plant**	**12,885,934**	**449,147**	**13,335,081**
14	**514**	**Maintenance of Miscellaneous Steam Plant**	**9,671,362**	**1,499,169**	**11,170,531**
15	**546**	**Operation Supervision and Engineering**	**2,084**	**36,052**	**38,136**
16	**548**	**Generation Expenses**	**311,697**	**-**	**311,697**
17	**549**	**Misc Other Power Generation Expenses**	**644,946**	**169,466**	**814,412**
18	**549W**	**Misc Other Power Generation Expenses Wind**	**5,755,120**	**-**	**5,755,120**
19	**550**	**Rents**	**246,516**	**413,266**	**659,782**
20	**551**	**Maintenance Supervision and Engineering**	**179,727**	**301**	**180,028**
21	**552**	**Maintenance of Structures**	**335,622**	**481**	**336,104**
22	**553**	**Maintenance of Generating and Electric Equipment**	**1,572,028**	**33,713**	**1,605,740**
23	**553W**	**Maintenance of Generating and Electric Equipment Wind**	**3,843,120**	**-**	**3,843,120**
24	**554**	**Maintenance of Misc Other Power Generation Plant**	**143,369**	**163,309**	**306,679**
25	556	System Control and Load Dispatching	(2,686)	1,061,033	1,058,347
26	**557**	**Purchased Power Other**	**(381,078)**	**1,742,113**	**1,361,034**
27	557.9*	REC Costs	2,543,109	-	2,543,109
28	**Total Production O&M Expense**		**$ 123,508,923**	**$ 18,443,580**	**$ 141,952,503**

Southwestern Public Service Company

SPS Native Operation & Maintenance Expenses

Total Company SPS Operation and Maintenance Expenses

Line No.	FERC Acct	Account Description	Native SPS O&M Expense through the Update Period (Jul '18-Jun '19)	Test Year Affiliate O&M Expense (Jul '18-Jun '19)	Total Company Requested O&M
	Transmission				
29	560	Operation Supervision and Engineering	$ (545,350)	$ 10,121,801	$ 9,576,451
30	561.1	Load Dispatch - Reliability	211,475	-	211,475
31	561.2	Load Dispatch - Monitor and Operate Trans. System	1,723,643	1,375,714	3,099,357
32	561.4	Scheduling, System Control and Dispatching Services	3,079,020	-	3,079,020
33	561.4W	Scheduling, System Control and Dispatching Services - Wholesale	964,243	-	964,243
34	561.5	Reliability, Planning and Standards Development	-	3,608	3,608
35	561.6	Transmission Service Studies	64,465	27,835	92,300
36	561.7	Generation Interconnection Studies	(49,954)	-	(49,954)
37	561.8	Reliability Planning and Standards Development Services	2,724,405	-	2,724,405
38	561.8W	Reliability Planning and Standards Development Services - Wholesale	465,778	-	465,778
39	562	Station Expenses	1,618,771	291	1,619,062
40	563	Overhead Line Expenses	969,905	12,027	981,932
41	565	Wheeling Lamar DC Tie	(420)	-	(420)
42	565	Wheeling Meter Charges	910,542	-	910,542
43	565	Wheeling Miscellaneous	(160,568)	-	(160,568)
44	565	Wheeling Schedule 11	97,414,450	-	97,414,450
45	565	Wheeling Schedule 11 - Wholesale	36,648,282	-	36,648,282
46	565	Wheeling Schedule 12	2,027,287	-	2,027,287
47	565	Wheeling Schedule 12 - Wholesale	544,137	-	544,137
48	565	Wheeling Schedule 1 - Wholesale	718,162	-	718,162
49	565	Wheeling Schedule 2	87,728	-	87,728
50	565	W-Wheeling Schedule 2 - Wholesale	(38,596)	-	(38,596)
51	565	Wheeling Schedule 9	6,012,320	-	6,012,320
52	565	Wheeling Schedule 9 - Wholesale	24,630,445	-	24,630,445
53	565	Z2 Direct Assigned Upgrade Charge	81,490	-	81,490
54	565	Z2 Direct Assigned Upgrade Charge - Wholesale	16,962	-	16,962
55	565	Z2 Schedule 11 Charges	(182,512)	-	(182,512)
56	565	Z2 Schedule 11 Charges - Wholesale	(4,093)	-	(4,093)
57	566	Misc Transmission Expenses	2,758,831	771,036	3,529,868
58	567	Rents	248,554	1,443,247	1,691,801
59	568	Maintenance Supervision and Engineering	(4,514)	8,197	3,683
60	570	Maintenance of Station Equipment	1,881,327	3,286	1,884,613
61	571	Maintenance of Overhead Lines	3,279,359	40,513	3,319,872
62	**Sub-Total Transmission O&M Expenses**		**$ 188,095,571**	**$ 13,807,556**	**$ 201,903,127**
	Regional Market Expenses				
63	575.1	Operation Supervision	$ 0	$ 144,493	$ 144,493
64	575.2	Day-Ahead and Real-Time Market Administration	-	319,247	319,247
65	575.5	Ancillary Services Market Administration	-	45,199	45,199
66	575.6	Market Monitoring and Compliance	-	52,834	52,834
67	575.7	Market Admin, Monitoring, and Compliance Services	5,493,541	-	5,493,541
68	575.7W	Market Admin, Monitoring, and Compliance Services - Wholesale	1,955,333	-	1,955,333
69	575.8	Regional Market Rents	16,697	46,542	63,239
70	**Total Regional Market Expenses**		**$ 7,465,572**	**$ 608,316**	**$ 8,073,887**
71	**Total Transmission O&M Expenses**		**$ 195,561,142**	**$ 14,415,872**	**$ 209,977,014**

Southwestern Public Service Company

SPS Native Operation & Maintenance Expenses

Total Company SPS Operation and Maintenance Expenses

Line No.	FERC Acct	Account Description	Native SPS O&M Expense through the Update Period (Jul '18-Jun '19)	Test Year Affiliate O&M Expense (Jul '18-Jun '19)	Total Company Requested O&M
	Distribution				
72	580	Operation Supervision and Engineering	$ 3,405,755	$ 1,112,909	$ 4,518,665
73	581	Load Dispatching	102,311	248,335	350,646
74	582	Station Expenses	1,435,464	(14,170)	1,421,293
75	583	Overhead Line Expenses	3,334,194	105,570	3,439,764
76	584	Underground Line Expenses	156,919	-	156,919
77	585	Street Lighting and Signal Systems Expenses	287,435	415	287,850
78	586	Meter Expenses	2,797,646	179,701	2,977,347
79	587	Customer Installations Expenses	919,216	1,495	920,712
80	588	Misc Distribution Expense	10,390,098	1,143,464	11,533,563
81	589	Rents	989,709	1,543,961	2,533,670
82	590	Maintenance Supervision and Engineering	16,017	28,724	44,741
83	591	Maintenance of Structures	815	-	815
84	592	Maintenance of Station Equipment	912,565	1,149	913,714
85	593	Maintenance of Overhead Lines	9,126,107	191,724	9,317,831
86	594	Maintenance of Underground Lines	180,525	(0)	180,525
87	595	Maintenance of Line Transformers	618	-	618
88	596	Maintenance of Street Lighting and Signal Systems	584,448	2,020	586,468
89	597	Maintenance of Meters	20,218	-	20,218
90	598	Maintenance of Misc Distribution Plant	(390,387)	769	(389,618)
91	**Total Distribution O&M Expenses**		**$ 34,269,676**	**$ 4,546,065**	**$ 38,815,741**
	Customer Accounts				
92	901	Supervision	$ -	$ 30,503	$ 30,503
93	902	Meter Reading Expenses	4,380,976	460,573	4,841,549
94	903	Customer Records and Collection Expenses	3,232,359	3,722,097	6,954,456
95	904.0*	Uncollectible Expenses	4,736,858	-	4,736,858
96	904.1*	Uncollectible Expenses	762,650	-	762,650
97	DEPINT	Customer Deposit Interest Expense	151,110	-	151,110
98	**Total Customer Accounts Expense**		**$ 13,263,953**	**$ 4,213,172**	**$ 17,477,125**
	Customer Service				
99	908.00	Customer Assistance Expense	$ 911,114	$ 130,975	$ 1,042,089
100	908.00	Historical EE Amortization	(30,099)	$ -	$ (30,099)
101	908.01	EE Amortization - Texas	-	-	-
102	908.03	EE Amortization - New Mexico	-	-	-
103	908.04	SaversSwitch	775,839	-	775,839
104	909.10	Informational and Instructional Advertising Expense	-	-	-
105	910.00	Miscellaneous Customer Service Expense	44,957	21,107	66,063
106	**Total Customer Service Expense**		**$ 1,701,811**	**$ 152,081**	**$ 1,853,892**
	Sales				
107	912.00	Demonstration and Selling Expense-Economic Development	$ 273,509	$ 105	$ 273,614
108	**Total Sales Expense**		**$ 273,509**	**$ 105**	**$ 273,614**

Southwestern Public Service Company

SPS Native Operation & Maintenance Expenses

Total Company SPS Operation and Maintenance Expenses

Line No.	FERC Acct	Account Description	Native SPS O&M Expense through the Update Period (Jul '18-Jun '19)	Test Year Affiliate O&M Expense (Jul '18-Jun '19)	Total Company Requested O&M
	Administrative and General Expenses				
109	920*	Administrative and General Salaries	$ 4,833,384	$ 24,142,782	$ 28,976,166
110	921	Office Supplies and Expenses	1,269,421	17,962,307	19,231,728
111	922*	Administrative Expenses Transferred-Credit	(14,611,279)	(228,870)	(14,840,149)
112	923	Outside Services Employed	2,916,830	9,095,481	12,012,311
113	924	Property Insurance	3,180,864	1,633	3,182,497
114	925*	Injuries and Damages	4,475,740	2,106,862	6,582,602
115	926.01*	Employee Pensions and Benefits	20,587,923	13,238,622	33,826,545
116	926.03*	Deferred Pension Expense	1,574,975	-	1,574,975
117	928	Regulatory Commission Expense - TX	8,781,003	-	8,781,003
118	928.01	Regulatory Commission Expense - NM	4,701,597	-	4,701,597
119	928.02	Regulatory Commission Expense - Wholesale	748,078	-	748,078
120	928.04	Regulatory Commission Expense - Misc	93,393	1,040	94,433
121	**929**	**Duplicate Charges-Credit**	**(1,367,138)**	-	**(1,367,138)**
122	930.11	General Advertising Expenses	-	-	-
123	**930.20**	**Misc General Expenses**	**16,227**	**468,159**	**484,386**
124	931	Rents	(959,185)	12,711,133	11,751,948
125	935	Maintenance of General Plant	482	107,643	108,125
126		Recoverable Contributions, Dues, and Donations	2,556,746	-	2,556,746
127	**Total Administrative and General Expenses**		**$ 38,799,063**	**$ 79,606,791**	**$ 118,405,854**
128	**Total Operations and Maintenance Expense**		**$ 407,378,077**	**$ 121,377,667**	**$ 528,755,744**

Note: All amounts included in this attachment are included in the cost of service study provided as Attachment APF-RR1

Summary of XES Expenses to SPS by Affiliate Class and Billing Method
For Twelve Months ended June 30, 2019
Low

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
Line No.	Affliate Class	Billing Method (Cost Center)	Allocation Method	Total XES Billings for Class to all Legal Entities (FERC Acct. 400-935)	XES Billings for Class to all Legal Entities Except for SPS (FERC Acct. 400-935)	XES Billings for Class to SPS (Total Company) (FERC Acct. 400-935)	Exclusions	Per Book	Pro Formas	Requested Amount (Total Company)	% of Class Charges
1	ES Environmental	200138 - ES Operations Management OPCo's	MWH Generation	$ 4,576.26	$ 3,593.76	$ 982.50	$ -	$ 982.50	$ 29.48	$ 1,011.98	0.06%
2	ES Environmental	200181 - ES Environmental Policy & Services OPCo's	Electric PTD Gas TD Plant	1,486,680.63	1,263,246.04	223,434.59	-	223,434.59	(2,031.80)	221,402.79	13.19%
3	ES	Direct	Direct	6,589,983.17	5,119,806.33	1,470,176.84	-	1,470,176.84	(14,349.17)	1,455,827.67	86.75%
4	**ES Environmental Total**			**$ 8,081,240.06**	**$ 6,386,646.13**	**$ 1,694,593.93**	**$ -**	**$ 1,694,593.93**	**$ (16,351.49)**	**$ 1,678,242.44**	**100.00%**
5	ES Performance Optimization	200135 - Energy Supply Business Resources	MWH Generation	$ 949.29	$ 719.96	$ 229.33	$ -	$ 229.33	$ (19.17)	$ 210.16	0.00%
6	ES Performance Optimization	200137 - ES Misc Power Expense Op Co's	MWH Generation	394,646.68	305,802.63	88,844.05	-	88,844.05	(1,070.10)	87,773.95	1.09%
7	ES Performance Optimization	200138 - ES Operations Management OPCo's	MWH Generation	2,844,987.06	2,219,002.15	625,984.91	(4.39)	625,980.52	(9,139.92)	616,840.60	7.67%
8	ES Performance Optimization	200153 - Customer Safety Advertising/Information Costs	Number of Customers	396.28	368.58	27.70	-	27.70	(27.70)	-	0.00%
9	ES Performance Optimization	200184 - PowerPlant	Total Plant	719.84	614.37	105.47	-	105.47	3.16	108.63	0.00%
10	ES Performance Optimization	Direct	Direct	25,527,555.29	18,106,244.16	7,421,311.13	(56.97)	7,421,254.16	(81,848.62)	7,339,405.54	91.24%
11	**ES Performance Optimization Total**			**$ 28,769,254.44**	**$ 20,632,751.85**	**$ 8,136,502.59**	**$ (61.36)**	**$ 8,136,441.23**	**$ (92,102.35)**	**$ 8,044,338.88**	**100.00%**
12	ES Projects	200070 - Corporate Strategy & Bus Dev - Corporate Governance	Assets/Revenue/No. of employees	$ (148.49)	$ (129.37)	$ (19.12)	$ -	$ (19.12)	$ 19.12	$ -	0.00%
13	ES Projects	200125 - Transm Elec 560 NSPM & NSPW	Electric Transmission Plant	1,154.84	1,154.84	-	-	-	-	-	0.00%
14	ES Projects	200135 - Energy Supply Business Resources	MWH Generation	125,624.21	106,974.54	18,649.67	-	18,649.67	(1,449.83)	17,199.84	2.49%
15	ES Projects	200138 - ES Operations Management OPCo's	MWH Generation	18,762.76	14,694.27	4,068.49	-	4,068.49	122.05	4,190.54	0.61%
16	ES Projects	200142 - ES Engineering & Construction South	MWH Generation	36.82	23.57	13.25	-	13.25	(13.25)	-	0.00%
17	ES Projects	200148 - Business Systems	Number of Computers	139.99	120.53	19.46	-	19.46	(19.46)	-	0.00%
18	ES Projects	200181 - ES Environmental Policy & Services OPCo's	Electric PTD Gas TD Plant	424,260.79	360,351.78	63,909.01	-	63,909.01	484.64	64,393.65	9.33%
19	ES Projects	Direct	Direct	2,681,531.38	2,069,654.93	611,876.45	-	611,876.45	(7,327.62)	604,548.83	87.57%
20	**ES Projects Total**			**$ 3,251,362.30**	**$ 2,552,845.09**	**$ 698,517.21**	**$ -**	**$ 698,517.21**	**$ (8,184.35)**	**$ 690,332.86**	**100.00%**

Summary of XES Expenses to SPS by Affiliate Class and Billing Method
For Twelve Months ended June 30, 2019
Low

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
Line No.	Affliate Class	Billing Method (Cost Center)	Allocation Method	Total XES Billings for Class to all Legal Entities (FERC Acct. 400-935)	XES Billings for Class to all Legal Entities Except for SPS (FERC Acct. 400-935)	XES Billings for Class to SPS (Total Company) (FERC Acct. 400-935)	Exclusions	Per Book	Pro Formas	Requested Amount (Total Company)	% of Class Charges
21	ES VP Energy Supply	200078 - Governmental Affairs	Assets/Revenue/No. of employees	$ 12,720.69	$ 11,063.78	$ 1,656.91	$ (21.71)	$ 1,635.20	$ (132.60)	$ 1,502.60	1.05%
22	ES VP Energy Supply	200122 - Transmission Electric FERC 560 (E&S)	Electric Transmission Plant	1,694.54	1,191.66	502.88	-	502.88	15.09	517.97	0.36%
23	ES VP Energy Supply	200138 - ES Operations Management OPCo's	MWH Generation	640,308.72	498,671.39	141,637.33	(705.65)	140,931.68	(1,555.47)	139,376.21	97.41%
24	ES VP Energy Supply	Direct	Direct	1,112,372.86	1,110,527.64	1,845.22	-	1,845.22	(153.04)	1,692.18	1.18%
25	**ES VP Energy Supply Total**			**$ 1,767,096.81**	**$ 1,621,454.47**	**$ 145,642.34**	**$ (727.36)**	**$ 144,914.98**	**$ (1,826.02)**	**$ 143,088.96**	**100.00%**
26	ES VP Operations	200078 - Governmental Affairs	Assets/Revenue/No. of employees	$ 7,766.12	$ 6,760.52	$ 1,005.60	$ -	$ 1,005.60	$ 1.12	$ 1,006.72	0.22%
27	ES VP Operations	200135 - Energy Supply Business Resources	MWH Generation	(6,155.71)	(4,668.79)	(1,486.92)	-	(1,486.92)	(790.11)	(2,277.03)	-0.49%
28	ES VP Operations	200137 - ES Misc Power Expense Op Co's	MWH Generation	678,163.66	526,749.14	151,414.52	-	151,414.52	(1,554.39)	149,860.13	32.43%
29	ES VP Operations	200138 - ES Operations Management OPCo's	MWH Generation	740,555.71	576,383.49	164,172.22	-	164,172.22	(1,793.46)	162,378.76	35.14%
30	ES VP Operations	200143 - ES Misc Power Expense North	MWH Generation	236,155.13	236,155.13	-	-	-	-	-	0.00%
31	ES VP Operations	200144 - ES Operations Management North	MWH Generation	306,456.29	306,456.29	-	-	-	-	-	0.00%
32	ES VP Operations	200148 - Business Systems	Number of Computers	823.97	709.44	114.53	-	114.53	3.44	117.97	0.03%
33	ES VP Operations	Direct	Direct	1,256,049.25	1,104,914.00	151,135.25	-	151,135.25	(99.73)	151,035.52	32.68%
34	**ES VP Operations Total**			**$ 3,219,814.42**	**$ 2,753,459.22**	**$ 466,355.20**	**$ -**	**$ 466,355.20**	**$ (4,233.13)**	**$ 462,122.07**	**100.00%**
35	**Total - Witness David Low**			**$ 45,088,768.03**	**$ 33,947,156.76**	**$ 11,141,611.27**	**$ (788.72)**	**$11,140,822.55**	**$ (122,697.34)**	**$11,018,125.21**	
	Amounts may not add or tie to other schedules due to rounding.										

Southwestern Public Service Company

XES Expenses by Affiliate Class, Activity, Billing Method and FERC Account

David A. Low

2019 TX Rate Case

APPLICATION OF
SOUTHWESTERN PUBLIC SERVICE COMPANY
FOR AUTHORITY TO CHANGE RATES

DAL-RR-B(CD)

Exclusions from XES Expenses to SPS by Affiliate Class and FERC Account
For Twelve Months ended June 30, 2019
Low

(A) Line No.	(B) Affiliate Class	(C) FERC Account	(D) Explanation for Exclusions	(E) Exclusions (Total Company)
1	ES Performance Optimization	426.5 - Other Deductions	Below the line	$ (61.36)
2	**ES Performance Optimization Total**			**$ (61.36)**
3				
4	ES VP Energy Supply	426.1 - Donations	Below the line	$ (450.00)
5	ES VP Energy Supply	426.4 - Life Insurance	Below the line	(24.20)
6	ES VP Energy Supply	426.5 - Other Deductions	Below the line	(253.16)
7	**ES VP Energy Supply Total**			**$ (727.36)**
8				
9	**Total - Witness David Low**			**$ (788.72)**
	Amounts may not add or tie to other schedules due to rounding.			

Pro Forma Adjustments to XES Expenses By Affiliate Class and FERC Account
For Twelve Months ended June 30, 2019
Low

(A)	(B)	(C)	(D)	(E)	(F)
Line No.	**Affiliate Class**	**FERC Account**	**Explanation for Pro Formas**	**Sponsor**	**Pro Formas (Total Company)**
1	ES Environmental	500 - Operation supervision and engineering	3% Wage Adjustment	Arthur Freitas/Michael Knoll	$ 20.99
2	ES Environmental	506 - Miscellaneous steam power expenses	116.5% Incentive	Arthur Freitas/Michael Knoll	(13,478.30)
3	ES Environmental	506 - Miscellaneous steam power expenses	3% Wage Adjustment	Arthur Freitas/Michael Knoll	18,224.86
4	ES Environmental	506 - Miscellaneous steam power expenses	Business Area Adjustment	David Low	(60.88)
5	ES Environmental	546 - Operation supervision and engineering	3% Wage Adjustment	Arthur Freitas/Michael Knoll	8.49
6	ES Environmental	549 - Miscellaneous other power generation expenses	116.5% Incentive	Arthur Freitas/Michael Knoll	(474.56)
7	ES Environmental	549 - Miscellaneous other power generation expenses	3% Wage Adjustment	Arthur Freitas/Michael Knoll	473.88
8	ES Environmental	560 - Operation supervision and engineering	116.5% Incentive	Arthur Freitas/Michael Knoll	(493.89)
9	ES Environmental	560 - Operation supervision and engineering	3% Wage Adjustment	Arthur Freitas/Michael Knoll	577.12
10	ES Environmental	590 - Maintenance supervision and engineering	116.5% Incentive	Arthur Freitas/Michael Knoll	(436.09)
11	ES Environmental	590 - Maintenance supervision and engineering	3% Wage Adjustment	Arthur Freitas/Michael Knoll	558.86
12	ES Environmental	920 - Administrative and general salaries	116.5% Incentive	Arthur Freitas/Michael Knoll	(7,393.87)
13	ES Environmental	920 - Administrative and general salaries	3% Wage Adjustment	Arthur Freitas/Michael Knoll	10,200.98
14	ES Environmental	926 - Employee pensions and benefits	Pension & Benefits Adjustment	William Grant	(23,929.17)
15	ES Environmental	930.1 - General advertising expenses	Advertising	Arthur Freitas	(149.91)
16	**ES Environmental Total**				**$ (16,351.49)**
17					
18	ES Performance Optimization	500 - Operation supervision and engineering	116.5% Incentive	Arthur Freitas/Michael Knoll	$ (8,389.91)
19	ES Performance Optimization	500 - Operation supervision and engineering	3% Wage Adjustment	Arthur Freitas/Michael Knoll	7,574.44

Pro Forma Adjustments to XES Expenses By Affiliate Class and FERC Account
For Twelve Months ended June 30, 2019
Low

(A)	(B)	(C)	(D)	(E)	(F)
Line No.	Affiliate Class	FERC Account	Explanation for Pro Formas	Sponsor	Pro Formas (Total Company)
20	ES Performance Optimization	500 - Operation supervision and engineering	Business Area Adjustment	David Low	(237.69)
21	ES Performance Optimization	501 - Fuel	116.5% Incentive	Arthur Freitas/Michael Knoll	(11,749.60)
22	ES Performance Optimization	501 - Fuel	3% Wage Adjustment	Arthur Freitas/Michael Knoll	16,984.42
23	ES Performance Optimization	501 - Fuel	Business Area Adjustment	David Low	(170.32)
24	ES Performance Optimization	502 - Steam expenses	116.5% Incentive	Arthur Freitas/Michael Knoll	(150.82)
25	ES Performance Optimization	506 - Miscellaneous steam power expenses	116.5% Incentive	Arthur Freitas/Michael Knoll	(64,236.08)
26	ES Performance Optimization	506 - Miscellaneous steam power expenses	3% Wage Adjustment	Arthur Freitas/Michael Knoll	58,351.05
27	ES Performance Optimization	506 - Miscellaneous steam power expenses	Business Area Adjustment	David Low	(318.89)
28	ES Performance Optimization	510 - Maintenance supervision and engineering	116.5% Incentive	Arthur Freitas/Michael Knoll	(40.40)
29	ES Performance Optimization	510 - Maintenance supervision and engineering	3% Wage Adjustment	Arthur Freitas/Michael Knoll	87.33
30	ES Performance Optimization	512 - Maintenance of boiler plant	116.5% Incentive	Arthur Freitas/Michael Knoll	(12,572.23)
31	ES Performance Optimization	512 - Maintenance of boiler plant	3% Wage Adjustment	Arthur Freitas/Michael Knoll	17,291.53
32	ES Performance Optimization	513 - Maintenance of electric plant	116.5% Incentive	Arthur Freitas/Michael Knoll	(7,110.80)
33	ES Performance Optimization	513 - Maintenance of electric plant	3% Wage Adjustment	Arthur Freitas/Michael Knoll	8,588.56
34	ES Performance Optimization	514 - Maintenance of miscellaneous steam plant	116.5% Incentive	Arthur Freitas/Michael Knoll	(22,051.41)
35	ES Performance Optimization	514 - Maintenance of miscellaneous steam plant	3% Wage Adjustment	Arthur Freitas/Michael Knoll	26,137.31

Pro Forma Adjustments to XES Expenses By Affiliate Class and FERC Account
For Twelve Months ended June 30, 2019
Low

(A)	(B)	(C)	(D)	(E)	(F)
Line No.	Affiliate Class	FERC Account	Explanation for Pro Formas	Sponsor	Pro Formas (Total Company)
36	ES Performance Optimization	546 - Operation supervision and engineering	116.5% Incentive	Arthur Freitas/Michael Knoll	(424.23)
37	ES Performance Optimization	546 - Operation supervision and engineering	3% Wage Adjustment	Arthur Freitas/Michael Knoll	2,706.96
38	ES Performance Optimization	546 - Operation supervision and engineering	Business Area Adjustment	David Low	(8.70)
39	ES Performance Optimization	549 - Miscellaneous other power generation expenses	116.5% Incentive	Arthur Freitas/Michael Knoll	(64.61)
40	ES Performance Optimization	549 - Miscellaneous other power generation expenses	3% Wage Adjustment	Arthur Freitas/Michael Knoll	320.92
41	ES Performance Optimization	549 - Miscellaneous other power generation expenses	Business Area Adjustment	David Low	(3.84)
42	ES Performance Optimization	552 - Maintenance of structures	116.5% Incentive	Arthur Freitas/Michael Knoll	(0.65)
43	ES Performance Optimization	552 - Maintenance of structures	3% Wage Adjustment	Arthur Freitas/Michael Knoll	11.56
44	ES Performance Optimization	553 - Maintenance of generating and electric plant	116.5% Incentive	Arthur Freitas/Michael Knoll	(531.50)
45	ES Performance Optimization	553 - Maintenance of generating and electric plant	3% Wage Adjustment	Arthur Freitas/Michael Knoll	102.54
46	ES Performance Optimization	554 - Maintenance of miscellaneous other power generation plant	116.5% Incentive	Arthur Freitas/Michael Knoll	(2,654.68)
47	ES Performance Optimization	554 - Maintenance of miscellaneous other power generation plant	3% Wage Adjustment	Arthur Freitas/Michael Knoll	3,338.74
48	ES Performance Optimization	560 - Operation supervision and engineering	3% Wage Adjustment	Arthur Freitas/Michael Knoll	48.99
49	ES Performance Optimization	920 - Administrative and general salaries	116.5% Incentive	Arthur Freitas/Michael Knoll	28,339.78
50	ES Performance Optimization	920 - Administrative and general salaries	3% Wage Adjustment	Arthur Freitas/Michael Knoll	(11,477.43)
51	ES Performance Optimization	920 - Administrative and general salaries	Business Area Adjustment	David Low	(27.70)

Pro Forma Adjustments to XES Expenses By Affiliate Class and FERC Account
For Twelve Months ended June 30, 2019
Low

(A)	(B)	(C)	(D)	(E)	(F)
Line No.	**Affiliate Class**	**FERC Account**	**Explanation for Pro Formas**	**Sponsor**	**Pro Formas (Total Company)**
52	ES Performance Optimization	921 - Office supplies and expenses	Business Area Adjustment	David Low	(343.42)
53	ES Performance Optimization	926 - Employee pensions and benefits	Pension & Benefits Adjustment	William Grant	(119,421.54)
54	**ES Performance Optimization Total**				**$ (92,102.35)**
55					
56	ES Projects	408.1 - Tax Other Than Income Tax - Payroll	Business Area Adjustment	David Low	$ (2.32)
57	ES Projects	500 - Operation supervision and engineering	3% Wage Adjustment	Arthur Freitas/Michael Knoll	88.97
58	ES Projects	506 - Miscellaneous steam power expenses	116.5% Incentive	Arthur Freitas/Michael Knoll	(6,427.29)
59	ES Projects	506 - Miscellaneous steam power expenses	3% Wage Adjustment	Arthur Freitas/Michael Knoll	8,704.26
60	ES Projects	506 - Miscellaneous steam power expenses	Business Area Adjustment	David Low	(789.60)
61	ES Projects	507 - Rents	3% Wage Adjustment	Arthur Freitas/Michael Knoll	1.35
62	ES Projects	507 - Rents	Foundation	William Grant	(0.10)
63	ES Projects	510 - Maintenance supervision and engineering	Business Area Adjustment	David Low	(4.58)
64	ES Projects	512 - Maintenance of boiler plant	3% Wage Adjustment	Arthur Freitas/Michael Knoll	113.23
65	ES Projects	546 - Operation supervision and engineering	3% Wage Adjustment	Arthur Freitas/Michael Knoll	33.09
66	ES Projects	550 - Rents	3% Wage Adjustment	Arthur Freitas/Michael Knoll	0.10
67	ES Projects	550 - Rents	Foundation	William Grant	(0.01)
68	ES Projects	551 - Maintenance supervision and engineering	Business Area Adjustment	David Low	(0.17)
69	ES Projects	560 - Operation supervision and engineering	3% Wage Adjustment	Arthur Freitas/Michael Knoll	19.50
70	ES Projects	561.6 - Transmission service studies	116.5% Incentive	Arthur Freitas/Michael Knoll	(233.15)
71	ES Projects	561.6 - Transmission service studies	3% Wage Adjustment	Arthur Freitas/Michael Knoll	1.46
72	ES Projects	567 - Rents	3% Wage Adjustment	Arthur Freitas/Michael Knoll	0.33
73	ES Projects	567 - Rents	Foundation	William Grant	(0.03)

Pro Forma Adjustments to XES Expenses By Affiliate Class and FERC Account
For Twelve Months ended June 30, 2019
Low

(A)	(B)	(C)	(D)	(E)	(F)
Line No.	**Affiliate Class**	**FERC Account**	**Explanation for Pro Formas**	**Sponsor**	**Pro Formas (Total Company)**
74	ES Projects	575.8 - Rents	3% Wage Adjustment	Arthur Freitas/Michael Knoll	0.01
75	ES Projects	580 - Operation supervision and engineering	3% Wage Adjustment	Arthur Freitas/Michael Knoll	0.26
76	ES Projects	589 - Rents	3% Wage Adjustment	Arthur Freitas/Michael Knoll	0.43
77	ES Projects	589 - Rents	Foundation	William Grant	(0.04)
78	ES Projects	592 - Distribution Maintenance of Station Equipment	3% Wage Adjustment	Arthur Freitas/Michael Knoll	0.34
79	ES Projects	920 - Administrative and general salaries	116.5% Incentive	Arthur Freitas/Michael Knoll	(2,289.77)
80	ES Projects	920 - Administrative and general salaries	3% Wage Adjustment	Arthur Freitas/Michael Knoll	2,599.23
81	ES Projects	920 - Administrative and general salaries	Business Area Adjustment	David Low	(0.34)
82	ES Projects	925 - Injuries & Damages	Business Area Adjustment	David Low	(0.05)
83	ES Projects	926 - Employee pensions and benefits	Business Area Adjustment	David Low	(6.13)
84	ES Projects	926 - Employee pensions and benefits	Pension & Benefits Adjustment	William Grant	(9,993.87)
85	ES Projects	931 - Rents	3% Wage Adjustment	Arthur Freitas/Michael Knoll	0.62
86	ES Projects	931 - Rents	Foundation	William Grant	(0.06)
87	**ES Projects Total**				**$ (8,184.35)**
88					
89	ES VP Energy Supply	500 - Operation supervision and engineering	116.5% Incentive	Arthur Freitas/Michael Knoll	$ (1,650.99)
90	ES VP Energy Supply	500 - Operation supervision and engineering	3% Wage Adjustment	Arthur Freitas/Michael Knoll	1,701.83
91	ES VP Energy Supply	500 - Operation supervision and engineering	Business Area Adjustment	David Low	(38.40)
92	ES VP Energy Supply	546 - Operation supervision and engineering	116.5% Incentive	Arthur Freitas/Michael Knoll	(79.87)
93	ES VP Energy Supply	546 - Operation supervision and engineering	3% Wage Adjustment	Arthur Freitas/Michael Knoll	556.78
94	ES VP Energy Supply	546 - Operation supervision and engineering	Business Area Adjustment	David Low	(1.40)
95	ES VP Energy Supply	560 - Operation supervision and engineering	3% Wage Adjustment	Arthur Freitas/Michael Knoll	15.09
96	ES VP Energy Supply	920 - Administrative and general salaries	116.5% Incentive	Arthur Freitas/Michael Knoll	(151.00)

Pro Forma Adjustments to XES Expenses By Affiliate Class and FERC Account
For Twelve Months ended June 30, 2019
Low

(A) Line No.	(B) Affiliate Class	(C) FERC Account	(D) Explanation for Pro Formas	(E) Sponsor	(F) Pro Formas (Total Company)
97	ES VP Energy Supply	920 - Administrative and general salaries	3% Wage Adjustment	Arthur Freitas/Michael Knoll	(14.79)
98	ES VP Energy Supply	926 - Employee pensions and benefits	Pension & Benefits Adjustment	William Grant	(2,163.28)
99	**ES VP Energy Supply Total**				**$ (1,826.02)**
100					
101	ES VP Operations	500 - Operation supervision and engineering	116.5% Incentive	Arthur Freitas/Michael Knoll	$ (1,828.64)
102	ES VP Operations	500 - Operation supervision and engineering	3% Wage Adjustment	Arthur Freitas/Michael Knoll	1,854.35
103	ES VP Operations	506 - Miscellaneous steam power expenses	116.5% Incentive	Arthur Freitas/Michael Knoll	(1,685.69)
104	ES VP Operations	506 - Miscellaneous steam power expenses	3% Wage Adjustment	Arthur Freitas/Michael Knoll	1,784.02
105	ES VP Operations	546 - Operation supervision and engineering	116.5% Incentive	Arthur Freitas/Michael Knoll	(94.15)
106	ES VP Operations	546 - Operation supervision and engineering	3% Wage Adjustment	Arthur Freitas/Michael Knoll	606.29
107	ES VP Operations	549 - Miscellaneous other power generation expenses	116.5% Incentive	Arthur Freitas/Michael Knoll	(80.30)
108	ES VP Operations	549 - Miscellaneous other power generation expenses	3% Wage Adjustment	Arthur Freitas/Michael Knoll	590.50
109	ES VP Operations	920 - Administrative and general salaries	116.5% Incentive	Arthur Freitas/Michael Knoll	(665.69)
110	ES VP Operations	920 - Administrative and general salaries	3% Wage Adjustment	Arthur Freitas/Michael Knoll	126.04
111	ES VP Operations	926 - Employee pensions and benefits	Pension & Benefits Adjustment	William Grant	(4,839.86)
112	**ES VP Operations Total**				**$ (4,233.13)**
113					
114	**Total Witness - David Low**				**$ (122,697.34)**
	Amounts may not add or tie to other schedules due to rounding				