**BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION**

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| **IN THE MATTER OF SOUTHWESTERN PUBLIC SERVICE COMPANY'S APPLICATION FOR: (1) REVISION OF ITS RETAIL RATES UNDER ADVICE NOTICE NO. 292; (2) AUTHORIZATION AND APPROVAL TO ABANDON ITS PLANT X UNIT 3 GENERATING STATION; AND (3) OTHER ASSOCIATED RELIEF,** | ) | **CASE NO. 20-00238-UT** |
| **SOUTHWESTERN PUBLIC SERVICE COMPANY,** | ) | |
| **APPLICANT.** | ) | |

**DIRECT TESTIMONY**

***of***

**JARRED J. COOLEY**

***on behalf of***

**SOUTHWESTERN PUBLIC SERVICE COMPANY**

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## GLOSSARY OF ACRONYMS AND DEFINED TERMS

| Acronym/Defined Term | Meaning |
|---|---|
| Base Period | October 1, 2019 through September 30, 2020 |
| CCN | Certificate of Public Convenience and Necessity |
| Commission | New Mexico Public Regulation Commission |
| EC | Economic Project |
| ELR | End of Life Replacement Project |
| FERC | Federal Energy Regulatory Commission |
| GI | Generation Interconnection Project |
| HPILS | High Priority Incremental Load Study |
| kV | Kilovolt |
| LI | Load Interconnection Project |
| NERC | North American Electric Reliability Corporation |
| NTC | Notification to Construct |
| OG&E | Oklahoma Gas & Electric |
| O&M | Operation and Maintenance |
| OATT | Open Access Transmission Tariff |
| Operating Companies | SPS, Northern States Power Company, a Minnesota corporation; Northern States Power Company, a Wisconsin corporation; Public Service Company of Colorado, a Colorado corporation. |

| Acronym/Defined Term | Meaning |
|---|---|
| OPGW | Optical Ground Wire |
| OT | Other Project |
| RE | Reliability Project |
| RTU | Remote Terminal Unit |
| SCADA | Supervisory Control and Data Acquisition |
| SPP | Southwest Power Pool |
| SPS | Southwestern Public Service Company, a New Mexico corporation |
| SR | System Refurbishment Project |
| SVR | Static VAR Compensator |
| Test Year | Historical Test Year Period consisting of the Base Period and further incorporating all proper adjustments and capital additions |
| Texas Department of Transportation | TxDOT |
| Transmission business area | Transmission and Operating Services business area |
| TI | Transmission Interconnection Project |
| WBS | Work Breakdown Structure |
| Xcel Energy | Xcel Energy Inc. |
| XES | Xcel Energy Services Inc. |

## LIST OF ATTACHMENTS

Case No. 20-00238-UT
Direct Testimony
of
Jarred J. Cooley

## I. WITNESS IDENTIFICATION AND QUALIFICATIONS

**Q. Please state your name and business address.**

A. My name is Jarred J. Cooley. My business address is 790 South 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"). SPS is a 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 Xcel Energy Services Inc. ("XES") as Manager, Transmission Planning South.

**Q. Please briefly outline your responsibilities as Manager, Transmission Planning South.**

A. I provide overall management direction for the transmission planning staff in Amarillo, Texas. Their duties include planning new transmission facilities required for generation and customer additions. I also actively participate on behalf of SPS in the Southwest Power Pool's ("SPP") transmission planning activities. In addition, I participate in the preparation of the SPS transmission capital budget.

Finally, I interact with retail and wholesale customers seeking new transmission service, as well as wind and solar developers working on interconnections with the SPS transmission system.

**Q. Please describe your educational background.**

A. I received my Bachelor of Science degree in Electrical Engineering in 2010 from the University of Minnesota – Twin Cities.

**Q. Please describe your professional experience.**

A. In 2010, I started full-time as an entry-level engineer in the Transmission Planning department with Xcel Energy, based in Minneapolis, Minnesota. In 2014, I was promoted to Senior Engineer within the Transmission Planning department. I continued to work in that department until 2018, when I became Manager, Transmission Planning South, and moved to Amarillo, Texas.

**Q. Do you hold a professional license?**

A. Yes. I am a registered Professional Engineer in the State of Minnesota.

**Q. Have you filed testimony before any regulatory authorities?**

A. Yes. I submitted pre-filed written testimony to the New Mexico Public Regulation Commission ("Commission") on SPS's behalf in Case No. 19-00170-UT, and I

testified in the hearing on the settlement in that case.[1] I also submitted pre-filed written testimony to the Commission in Case Nos. 19-00157-UT[2] and 20-00085-UT.[3] In addition, I submitted pre-filed written testimony to the Public Utility Commission of Texas in Docket No. 49831, and I submitted testimony to the Federal Energy Regulatory Commission ("FERC") in Docket No. ER18-2358-000.

[1] *In the Matter of Southwestern Public Service Company's Application for: (1) Revision of Its Retail Rates Under Advice Notice No. 282; (2) Authorization and Approval to Shorten the Service Life of and Abandon Its Tolk Generating Station Units; and (3) Other Related Relief*, Case No. 19-00170-UT, Direct Testimony of Jarred J. Cooley (July 1, 2019).

[2] *In the Matter of Southwestern Public Service Company's Application Requesting: (1) Issuance of a Certificate of Public Convenience and Necessity Authorizing Construction and Operation of a 345-kV Transmission Line and Associated Facilities in Eddy County, New Mexico; (2) Location Approval of the 345-kV Transmission Line; (3) Determination of the Necessary Right-of-Way Width; and (4) Authorization to Accrue an Allowance for Funds Used During Construction for the Transmission Line and Associated Facilities*, Case No. 19-00157-UT, Direct Testimony of Jarred J. Cooley (May 31, 2019).

[3] *In the Matter of Southwestern Public Service Company's Application Requesting: (1) Issuance of a Certificate of Public Convenience and Necessity Authorizing Construction and Operation of the Roadrunner to Phantom to China Draw 345-kV Transmission Line and Associated Facilities; (2) Approval of the Location of the 345-kV Transmission Line and Associated Facilities; (3) Determination of Right-of-Way Width for the Transmission Line; and (4) Authorization to Accrue an Allowance for Funds Used During Construction for the Transmission Line and Associated Facilities*, Case No. 20-00085-UT, Direct Testimony of Jarred J. Cooley (Apr. 14, 2020).

## II. ASSIGNMENT AND SUMMARY OF TESTIMONY AND RECOMMENDATIONS

**Q. What is your assignment in this proceeding?**

A. My testimony addresses the following topics:

- I explain how the capital projects for the SPS Transmission function are prioritized, and I describe the ways in which SPS controls the costs of those projects.

- I present and support the major Transmission capital additions placed in service during the period from October 1, 2019 through February 28, 2021, including the cost data for: (1) the capital additions that closed to plant-in-service during the period of October 1, 2019 through September 30, 2020; and (2) the capital additions that have closed or are expected to close to plant-in-service during the period from October 1, 2020 through February 28, 2021.

- I discuss the overall Operation and Maintenance ("O&M") expenses for the Transmission business area for the Test Year.[4] I explain that the Test Year level of expenses are reasonable and necessary to support the electric service SPS provides to its New Mexico retail customers, and that they are representative of future costs.

**Q. Please summarize the conclusions and recommendations in your testimony.**

A. The Transmission capital additions that SPS seeks to include in rate base total $108,090,476 on a New Mexico retail basis ($441,557,406 total company) for the period from October 1, 2019 through February 28, 2021. That total amount consists

[4] The Test Year is the Historical Test Year Period consisting of the Base Period (October 1, 2019 through September 30, 2020) and further incorporating all proper adjustments and capital additions.

of $61,259,805 ($250,365,409 total company) incurred for projects placed in service during the period from October 1, 2019 through September 30, 2020, and $46,830,670 ($191,191,997 total company) incurred for projects that have been placed in service or will be placed in service during the period from October 1, 2020 through February 28, 2021. These capital costs were prudently incurred to construct, equip, and repair SPS's transmission system.

SPS's Test Year Transmission O&M expenses are reasonable and necessary to support the safe and reliable electric service SPS provides to its New Mexico retail customers. SPS's standard practices include processes to manage and minimize related O&M expense.

**Q. How were New Mexico retail jurisdictional amounts in your testimony and attachments calculated?**

A. Throughout this testimony, I quantify the expense and asset amounts on a New Mexico retail basis based upon the jurisdictional allocation percentages that SPS witness Stephanie N. Niemi uses to develop the New Mexico retail revenue requirement reflected in her Attachment SNN-6. Ms. Niemi is responsible for calculating jurisdictional allocation percentages that apply to the various cost components in the cost of service. My staff and I conferred with Ms. Niemi and her staff to determine the New Mexico retail jurisdictional amounts presented in

my testimony and attachments. If the percentages used to allocate amounts to the New Mexico retail jurisdiction change, those new allocation percentages will need to be applied to the total company numbers to derive updated New Mexico retail amounts. Attachment JJC-1 contains the total company numbers and the jurisdictional percentages used to derive the New Mexico retail amounts in my testimony. I have reviewed Attachment JJC-1 and was engaged in its development, and I believe it to be accurate and complete.

**Q. Were Attachments JJC-1 through JJC-8 prepared by you or under your direct supervision?**

A. Some were, but not all. As I explained in the response to the previous question, Ms. Niemi and her staff prepared Attachment JJC-1. My staff and I prepared Attachments JJC-2 through JJC-6, with help from SPS witness Mark P. Moeller and his staff. My staff prepared Attachment JJC-7. Ms. Niemi and her staff prepared Attachment JJC-8. I have reviewed all the attachments and believe them to be accurate and complete.

## III. THE RANKING, ESTIMATION, AND MANAGEMENT OF TRANSMISSION CAPITAL ADDITIONS

**Q. Please describe the Transmission business area and the work that the Transmission business area performs to support SPS's operations.**

A. The Transmission business area supports reliable, cost-effective, and timely engineering solutions for constructing, operating, and maintaining high-voltage transmission lines and substations to support system reliability and to strengthen the infrastructure necessary to serve SPS's customers.

**Q. Please describe the processes for identifying and ranking Transmission capital projects.**

A. The Transmission Planning functional area develops and plans transmission projects through technical studies that consider, among other things:

- The need for new distribution load-serving substations;
- The need for transmission upgrades based on the North American Electric Reliability Corporation ("NERC") reliability standards;
- New generation and transmission service requests; and
- Discussions with SPP planning staff.

**Q. Does SPS rely on any third-party recommendations regarding transmission planning and expansion?**

A. Yes. SPP periodically issues to SPS a Notification to Construct ("NTC") for the following types of transmission projects:[5]

- projects needed for reliability purposes;
- projects necessary to provide transmission service under the SPP Open Access Transmission Tariff ("OATT");
- projects that have been determined by SPP to provide regional economic benefits; and
- projects required to provide service to new delivery points under the SPP OATT.

**Q. How does SPS prioritize transmission capital projects?**

A. All capital projects are ranked using a 10-point risk assessment metric.[6] Key drivers for the risk prioritization strategy include compliance requirements, contractual agreements, reliability and regulatory mandates, economic benefits, external requests, and other risk factors. The risk assessment process ranks projects on a scale of 1 through 10, with 10 being most urgent and 5 through 10 being non-discretionary.

[5] An NTC is SPP's notification to the affected utility that a specific project should be constructed in accordance with the minimum requirements outlined for that project.

[6] The risk assessment categories are shown in Attachment JJC-4.

**Q. What are non-discretionary projects?**

A. Non-discretionary projects include work needed to restore power after outages, work that must be performed in accordance with contractual agreements, projects that are mandated by regulators, projects that have received an NTC, projects necessary to connect loads and generators, and projects that have received a high ranking during the prioritization process.

**Q. Please describe how the Transmission business area develops cost estimates for the funding of proposed Transmission capital additions.**

A. Attachment JJC-5 outlines the general estimating steps and shows what project information is available as a project goes from concept to construction. When a project is prepared for the capital budget, a preliminary scope is developed by Transmission Planning or other submitting organization and is provided to the Project Management organization. Project Management then requests cost estimates from the Substation/Transmission Engineering & Design organization.[7]

If the project is an internally-developed budget item, the initial estimate is a scoping estimate that is intended to be within ±30% of the total expected project

[7] Project Management and Substation/Transmission Engineering & Design are both part of the Portfolio Delivery organization, which is responsible for the managing project design and construction, and for ensuring that projects are constructed within the desired scope requirements and the approved financial costs.

cost. If the initial estimate is for a generator facilities study or a project proposed in response to an NTC, SPP's tariff includes additional cost estimation and oversight requirements.

**Q. Does SPS have any additional cost management safeguards as part of the project planning process?**

A. Yes. After the initial estimate is developed, each project proceeds through design reviews, called the "Project Lifecycle," which reviews the scope, cost and feasibility estimates, and schedules of the project at different stages in its development. The Preliminary Scope Intake meeting evaluates the validity of the initial scope and looks for any fatal flaws in the proposed project. A ±30% scoping estimate is developed after approval of the initial scope. The project then proceeds to a Constructability Review – Site Visit, which involves a field visit to the area of the project to identify any issues that cannot be discovered through review of drawings. If changes are necessary due to issues discovered during a field visit, the scope is modified. The project next proceeds through the Final Scope Review meeting, where a ±20% accuracy appropriation estimate is required.

Following completion of the project design, but prior to start of construction, SPS develops a ±10% engineering estimate, which is the most

accurate estimate created for the project. It is prepared after due consideration of the construction site and inclusion of known extenuating circumstances. In most cases, the engineering estimate includes actual material costs and may include construction bid pricing. This is the final estimate developed and is the final control point for project cost and schedule. At this project stage, SPS has the necessary information regarding the site and scope. Information regarding external influences such as final material delivery, acceptable times for electrical outages, and contractor availability may be less certain.

**Q. Does SPS seek input from other stakeholders during any part of the planning process?**

A. Yes. During the "Project Lifecycle" process, the planning team seeks input from stakeholders such as engineering, operations, construction, siting and land rights, regulatory, and others as needed. Stakeholder participation in the process is often dependent on the nature of the project.

**Q. What types of tools does SPS use to assist it in the planning and cost estimate processes?**

A. SPS uses an estimating software program called InEight Estimate to generate cost estimates. InEight Estimate contains a database of historical engineering, material,

and construction costs that engineers can draw upon to prepare accurate cost estimates. Engineers use templates from similar projects to ensure their estimates include all the necessary cost elements. Any engineering consultants hired to provide estimates use the same process to ensure that their estimates are consistent with the methods used to prepare estimates generated internally.

**Q. Please provide an example of how cost estimates were prepared for a representative transmission project.**

A. The OPIE 2 Kiowa-Eddy Co 345 kilovolt ("kV") transmission line project resulted from the SPP Attachment AQ study process for new load interconnections. SPP identified the project as a needed system improvement in southeastern New Mexico to accommodate the addition of specific network loads that had not been accounted for in previous planning efforts or in system computer models being used in planning efforts underway at the time. SPP concluded that the project was necessary to mitigate voltage collapse in the area under contingency conditions. Since SPP planned to issue an NTC for this project and SPS had participated in the study process with SPP, SPS provided an initial study estimate for SPP's use before the issuance of the NTC by SPP. After SPP issued the NTC, SPS provided a refined estimate, as required by SPP's procedures. Because this project required a

Certificate of Public Convenience and Necessity ("CCN") in New Mexico, SPS also prepared and submitted detailed routing information and cost estimates to the Commission for its independent review as part of SPS's CCN application. Within SPS, the project moved through the project management and estimating processes described above. Thus, cost estimates for the project were subject to multiple levels of review and oversight as the project was being developed.

**Q. Please explain how Transmission capital costs are managed.**

A. Within SPS, all projects follow a project flow process that requires reviews and approvals of estimates at the budget, management, senior management, and executive levels. After these approvals, capital projects are approved through the budgeting process, and they are reviewed on a monthly basis to compare the monthly forecast to actual funds spent. A review is also performed to compare year-to-date actual performance with year-to-date and year-end forecasts. Deviations are identified, and recommendations to meet financial targets are reviewed and approved. Changes are reported to the Financial Performance and Planning group, which monitors capital spending.

If the project is an SPP NTC project, SPS must report the estimated completion cost of the NTC project quarterly to SPP. If the estimated cost of the

project exceeds SPP's requirements, the estimate is sent for management review by the SPP Project Cost Working Group and other stakeholder groups. If the costs are significantly outside of the allowable range, SPP may address the issue by accepting the cost variance, modifying the scope of the project to reduce the cost, suspending the project for further studies, or cancelling the project.

**Q. Does SPS have a process to address contingencies that may arise during a budget period?**

A. Yes. The approved, overall Transmission capital budget contains contingency funds to fund transmission, generation, and transmission-to-transmission interconnection agreements that may not have been executed when the budget was developed. Such contingency budgets are necessary because projects resulting from Generation Interconnection ("GI") agreements must be constructed in a timely manner under the SPP Generator Interconnection Procedures. Projects required for Transmission Interconnection ("TIs") are also required to be constructed in a timely manner under the SPP OATT. Any projects that arise outside of the original budget planning cycle are funded using these contingency funds. If additional funding is needed, approval for the project is sought in the same manner as any new capital budget item with appropriate engineering, management, and financial reviews.

The Transmission capital budget also includes funds to cover unexpected events that require capital expenditures, such as emergency outages that occur during the year. These capital amounts included in the budget are developed based on historical expenditures for the repair of failed equipment and storm-damaged equipment.

## IV. TRANSMISSION CAPITAL ADDITIONS

**Q. As part of this rate case, is SPS asking to include Transmission capital additions in its rate base?**

A. Yes. SPS is asking to include in rate base those Transmission capital additions that have closed or are expected to close to plant-in-service for the period from October 1, 2019 through February 28, 2021. SPS has included these capital additions in its Test Year rate base. In Subsection A, I discuss the capital additions that closed to plant-in-service during the period of October 1, 2019 through September 30, 2020. In Subsection B, I discuss the capital additions that have closed to plant-in-service or are expected to close to plant-in-service during the period from October 1, 2020 through February 28, 2021. All these Transmission capital additions support SPS's ability to provide safe and reliable electric service to its customers.

### A. Transmission Capital Additions for the Period October 1, 2019 through September 30, 2020

**Q. What is the dollar amount of Transmission capital additions that SPS is requesting in this case for the period from October 1, 2019 through September 30, 2020?**

A. SPS is requesting $61,259,805 on a New Mexico retail basis ($250,365,409 total company) in Transmission capital additions for the period from October 1, 2019

through September 30, 2020. This amount consists of Transmission plant capital additions of $58,354,370 ($240,700,716 total company), as well as general plant capital additions of $2,905,435 ($9,664,693 total company).[8]

**Q. Have you prepared a list of SPS's requested Transmission capital additions closed to plant-in-service during the period of October 1, 2019 through September 30, 2020?**

A. Yes. Attachments JJC-2 and JJC-3 both list SPS's requested Transmission capital additions for the period from October 1, 2019 through September 30, 2020. Attachment JJC-2 has columns similar to those contained in SPS witness Mark P. Moeller's Attachment MPM-2. Attachment JJC-3 is arranged to facilitate description of the additions by project group and provides the information listed in Table JJC-1 (next page):

[8] Throughout this testimony, the capital addition values that I discuss may not match exactly due to rounding.

**Table JJC-1**

| | | |
|---|---|---|
| Column A | Asset Class | Identifies the type of asset. |
| Column B | Work Breakdown Structure ("WBS") Level 1 Project Group Name[9] | Provides the WBS Level 1 name of the project group |
| Column C | WBS Level 2 Number | Provides the WBS Level 2 number for the project |
| Column D | WBS Level 2 Description | Provides a short title for the project for the WBS Level 2 number |
| Column E | Additions to Plant-in-Service (October 1, 2019– September 30, 2020) Total Company | Provides the Total Company dollar amount for the plant additions for the period of October 1, 2019 through September 30, 2020 |
| Column F | Additions to Plant-in-Service (October 1, 2019– September 30, 2020) NM Retail | Provides the New Mexico Retail dollar amount for the plant additions for the period of October 1, 2019 through September 30, 2020 |
| Column G | WBS Level 1 Project Group Description | Provides a short description of the work scope of the project group |
| Column H | Cost Recovery | Specifies the method of cost recovery for the project group |
| Column I | Project Category | Provides a classification of the project group's type |

[9] Mr. Moeller discusses the "Work Breakdown Structure" terminology in his direct testimony.

**Q. Please describe the different cost recovery methods listed in Attachment JJC-3, column H.**

A. The cost recovery method in column H of Attachment JJC-3 explains how the capital costs are recovered. The different cost recovery methods are as follows:

- Customer Funded – means that capital funds for the project are provided by the customer.
- SPP Balanced Portfolio – means the revenue recovery follows the SPP Balanced Portfolio method of cost recovery.[10]
- SPP Base Plan – means that the cost recovery follows the SPP highway/byway method of cost recovery.
- SPS Zonal – means that 100% of the revenue requirements are rolled into SPS zonal transmission rates.
- SPS Directly Assigned – means that 100% of the revenue requirements are paid by SPS retail customers.

Some projects can have a combination of recovery methods, as noted in Attachment JJC-3. For each project that was issued an NTC, the cost recovery method is specified for that project within the NTC.

[10] SPS witness William A. Grant discusses cost recovery of SPP-approved transmission investment in his direct testimony.

**Q. Please describe the Transmission capital additions as shown on Attachment JJC-3.**

A. The Transmission capital additions listed in Attachment JJC-3 support SPS's transmission operations and SPS's ability to provide safe and reliable electric service to its customers. These additions are for expanding the SPS transmission system infrastructure and for upgrading the SPS transmission system to interconnect new generation resources, to maintain reliability, and to improve load-serving capability.

As shown in Table JJC-2, the Transmission capital additions for the period of October 1, 2019 through September 30, 2020 fall within one or more of the following seven project categories: Economic Projects; Generation Interconnection Projects; Load Interconnection Projects; Reliability Projects; System Refurbishment Projects; Transmission Interconnection Projects; and Other Projects. When a project group falls into two project categories, the dollar cost of the project group is split equally between the two categories.

**Table JJC-2**

**Transmission Capital Additions**
**for the Period of October 1, 2019 through September 30, 2020**

| Project Category | Transmission Capital Additions (total company) | Transmission Capital Additions (NM retail) |
|---|---|---|
| Economic ("EC") | $134,453 | $32,596 |
| Generation Interconnection ("GI") | $6,204,773 | $1,488,426 |
| Load Interconnection ("LI") | $8,743,915 | $2,169,487 |
| Reliability ("RE") | $181,250,070 | $43,996,962 |
| System Refurbishment ("SR") | $42,967,221 | $10,458,419 |
| Transmission Interconnection ("TI") | $99,333 | $24,082 |
| Other ("OT") | $10,965,644 | $3,089,832 |
| **TOTAL** | **$250,365,409** | **$61,259,804** |

**Q. Please describe the types of projects included in the "EC" category.**

A. This category of investment contains the capital additions for transmission projects that were developed through SPP's Integrated Planning Process, which provide benefits to the SPP region, including the SPS system. SPS's New Mexico retail customers benefit from these capital additions because they also provide improved access to market-based energy resources. The total investment in this category is $32,596 on a New Mexico retail basis. The project described below accounts for

100% of the total capital additions in this category. This project is integral to SPS's ability to provide reliable electric service to its customers.

- **TUCO Mooreland (Woodward) ($65,192 NM retail) ($268,906 total company) (WBS Level 2 Numbers A.0000417.015 and A.0000665.005)** – This project constructed a single-circuit 345-kV transmission line between the TUCO Substation, near Lubbock, Texas, and Oklahoma Gas & Electric's ("OG&E") Woodward Substation near Woodward, Oklahoma. SPS constructed the line between the TUCO Substation and OG&E's Border Substation near the Texas and Oklahoma border, and OG&E constructed the line from the Border Substation to the Woodward Substation. This project is also a Transmission Interconnection Project, and therefore only half of the total shown above ($32,596 NM retail) ($134,453 total company) is credited to Economic Projects. This project was identified in the SPP's Balanced Portfolio Economic Studies. SPP issued SPS an NTC for this project.

**Q. Please describe the types of projects included in the "GI" category.**

A. This category of investment contains the capital additions for transmission system upgrades necessary to connect new generation sources to the SPS transmission system as required by the SPP OATT. SPS is obligated to provide non-discriminatory interconnection service to new generators, pursuant to the SPP OATT. These capital additions may have incidental benefits to SPS's New Mexico retail customers by enhancing SPS's transmission system reliability with these additional resources and facilities on the system. The total investment in this category during the period is $1,488,426 on a New Mexico retail basis. The

projects described below account for approximately 85% of the total capital additions in this category. The remaining projects are similar in nature in that they connect new generation sources to the transmission system, which is integral to SPS's ability to provide reliable electric service to its customers.

- **Gen Upgrade Tolk X Reconductor ($742,524 NM retail) ($3,062,770 total company) (WBS Level 2 Numbers A.0000105.001, .005, .007, and .008)** – This project upgraded the two 230-kV lines K-27 and K-45 and the associated line terminals at Tolk Substation and Plant X Substation. These upgrades were shared network upgrade projects identified in SPP's DISIS 2014-002 study to accommodate new generation being added.

- **Tuco Intg 345/230kV Auto #1 upgrade ($534,719 NM retail) ($2,205,613 total company) (WBS Level 2 Number A.0000564.002) –** This project upgraded the 345/230-kV transformer at TUCO Interchange. This project was one of the shared network upgrades required for the connection of generation projects approved by SPP in their DISIS 2014-002 study.

**Q. Please describe the types of projects included in the "LI" category.**

A. This category of investment contains the capital additions for transmission system upgrades necessary to connect new load-serving substations for either SPS retail or wholesale customers, including cooperatives, municipal electric utilities, and other investor-owned utilities. The LI request for the wholesale customers is made under the SPP OATT because their request constitutes a request for network transmission service. These capital additions may have incidental benefits to SPS's New Mexico

retail customers by enhancing SPS's transmission system reliability with these additional facilities on the system. The total investment in this category is $2,169,487 on a New Mexico retail basis. The projects described below account for approximately 91% of the total capital additions in this category. The remaining projects are similar in nature in that they connect new load serving substations, which is integral to SPS's ability to provide reliable electric service to its customers.

- **Western St Sub (TAM) ($672,078 NM retail) ($2,772,193 total company) (WBS Level 2 Numbers A.0001137.001, .002, .003, .004, .005, and .006)** – This project installed a 28 MVA, 115/13.2-kV distribution substation named Western Street located in Amarillo, Texas. This substation was needed to serve new load in the area and to provide contingency back-up capacity for the other distribution substations in the area.

- **OPIE 3 Roadrunner-China Draw 345kV ($855,844 NM retail) ($3,530,194 total company) (WBS Level 2 Numbers A.0001189.005, .007, .009, .011, and .026)** – This project installed a new 345/115-kV transmission interchange called Phantom Interchange as well as two new 345-kV transmission lines, a line approximately 20 miles in length from Phantom Interchange to China Draw Substation and a line approximately 21 miles in length from Phantom Interchange to Roadrunner Interchange. This project is also a Reliability Project, and therefore only half of the total shown above ($427,922 NM retail) ($1,765,097 total company) is credited to Load Interconnection Projects. The Phantom Interchange was needed to serve the rapidly increasing new transmission loads in the surrounding area and the looped 345-kV lines were needed to provide the needed reliability to these new loads and the existing transmission system in the area. SPP issued SPS an NTC for this project.

- **Interconnection Milwaukee ($316,051 NM retail) ($1,303,535 total company) (WBS Level 2 Numbers A.0001079.001, .002, .006, .007, .008, .009, .010, and .011)** – This project installed the new SPS Quincy Switching Station to provide 115-kV service to South Plains Electric Cooperative to serve new load from its new Milwaukee Substation. This project group includes both General and Transmission Plant additions.

- **OPIE 3 Malaga Bend ($261,022 NM retail) ($1,076,668 total company) (WBS Level 2 Number A.0001214.005)** – This project installed a new 115-kV distribution substation called Malaga Bend as well as two new 115-kV transmission lines, a line approximately 11 miles in length from Malaga Bend Substation to Loving South Substation and a line approximately 10 miles in length from Malaga Bend Substation to Phantom Interchange. This substation was needed to serve the rapidly increasing new distribution loads in the surrounding area.

- **Interconnection XTO BEU ($252,254 NM retail) ($1,040,502 total company) (WBS Level 2 Number A.0001384.002)** – This project installed two new 115-kV service points for this customer from SPS transmission line W76. This project was required to provide service to new customer load. The customer paid for a portion of this project.

**Q. Please describe the types of projects included in the "RE" category.**

A. This category of investment contains the capital additions for transmission upgrades identified by SPS or the SPP that are needed to maintain reliability on the SPS transmission system. Upgrades required by the SPP Transmission Expansion Planning process and NERC compliance fall into this category as well. SPS New Mexico retail customers benefit from the improvement in transmission system reliability by having a reduced risk with respect to both frequency and duration of

outages, and by having reduced operational constraints. The total investment in this category is $43,996,962 on a New Mexico retail basis. The projects described below account for approximately 82% of the total capital additions in this category. The remaining projects are similar in nature in that they address reliability issues, which is integral to SPS's ability to provide reliable electric service to its customers.

- **OPIE TUCO-Hobbs 345kV_PID 30376 ($27,285,624 NM retail) ($112,467,317 total company) (WBS Level 2 Numbers A.0000673.021, .022, .023, .025, .026, .030, .031, .032, .039, and .040)** – This project constructed a single-circuit 345-kV transmission line between the TUCO Substation, near Lubbock, Texas, the Yoakum Substation in Texas, and the Hobbs Generating Substation near Hobbs, New Mexico. The project was evaluated and identified in the 2013 SPP High Priority Incremental Load Study ("HPILS") as needed for reliability to alleviate loading violations on the underlying network and voltage violations due to insufficient power supply to network load additions. In addition to its reliability benefits, the project was also identified by SPP as providing significant economic benefits. In 2016, SPP issued its Integrated Transmission Planning Near-Term study which identified the TUCO to Yoakum portion of the project as needed as soon as 2017 to mitigate voltage issues in that area. SPP issued SPS NTCs for this project. This project group includes both General and Transmission Plant additions.

- **Eddy County Dbl Bus Dbl Brker 230kV ($4,640,936 NM retail) ($19,184,296 total company) (WBS Level 2 Numbers A.0000290.001, .003, .004, .005, .006, .008, .009, and .010)** – This project reconfigured the existing Eddy County Interchange 230-kV bus from a main and transfer bus design to a double bus-double breaker arrangement. This project was required to meet long-term firm transmission service requests in the SPP Aggregate Facility Study SPP-

2013-AG3-AFS-6. SPP issued SPS an NTC for this project. This project group includes both General and Transmission Plant additions.

- **OPIE N Loving-S Loving 115kV ($2,099,943 NM retail) ($8,661,866 total company) (WBS Level 2 Numbers A.0000424.119, .120, .121, .122, and .257)** – This project constructed approximately 3 miles of 115-kV transmission line from North Loving Substation to Loving South Substation and converted Loving South Substation from 69-kV to 115-kV operation. This upgrade was needed to reduce the 69-kV loading on the 115/69-kV transformers at Carlsbad Plant Interchange.

- **Plant X 115kV BFR ($2,069,076 NM retail) ($8,374,628 total company) (WBS Level 2 Numbers A.0000842.001, .002, .004, .005, .006, .007, and .008)** – This project added breaker failure relaying to the 115-kV breakers at the Plant X Substation. This project was needed to address NERC compliance requirements as well as to mitigate stability and reliability issues on the transmission system. This project group includes both General and Transmission Plant additions.

**Q. Please describe the types of projects included in the "SR" category.**

A. This category of investment contains the capital additions for transmission upgrades to replace storm-damaged, obsolete, and failed equipment. SPS's New Mexico retail customers benefit from these capital additions through restoration of service, improved transmission reliability, the prevention of possible future outages, and avoidance of higher maintenance costs associated with some aging equipment. These projects include those that are ongoing in nature, such as capital work to replace damaged assets. The total investment in this category is $10,458,419 on a New Mexico retail basis. The projects described below account

for approximately 85% of the total capital additions in this category. The remaining projects are similar in nature in that they replace storm-damaged or failed equipment, which is integral to SPS's ability to provide reliable electric service to its customers.

- **Line ELR SPS ($3,046,193 NM retail) ($12,564,968 total company) (WBS Level 2 Numbers A.0000499.011, .012, .013, .015, .019, .020, .026, .027, .029, .030, .031, .033, and .052)** – The term "ELR" stands for End of Life Replacement. This project provided for improvement work on transmission lines to address high priority capital defects, such as defective wood poles and cross arms, that were discovered through line inspections. Work in the ELR group included emergent work, planned usually 12 to 18 months in advance of the work being performed. This work was done on several transmission lines as part of a multi-year program to replace capital property units on a like-for-like basis and return the transmission lines to overall good health.

- **S&E - SPS Line ($2,111,685 NM retail) ($8,710,302 total company) (WBS Level 2 Numbers A.0000303.007, .027, .040, .041, .043, .044, .045, .046, .047, .053, .055, .056, .057, .058, .059, .061, .062, .063, .064, .067, .069, .083, .090, and .092 )** – These projects provided for the storm and emergency work orders for the replacement or capital repair of transmission line facilities damaged by inclement weather or natural disasters.

- **SPS Switch Replace ($1,705,443 NM retail) ($7,022,489 total company) (WBS Level 2 Numbers A.0000514.002, .004, .006, .007, and .008)** – This project replaced switches with cap and pin insulators because of a long history of high failure rates. The new switches installed use a better design of insulator and will provide much improved reliability over the switches they replaced. This project group includes both General and Transmission Plant additions.

- **Facility Upgrade Ancillary Equip ($1,355,052 NM retail) ($5,509,643 total company) (WBS Level 2 Numbers A.0001273.005, .008, .014, .015, .016, and A.0001369.001)** – This project provided for the replacement of failing switches, jumpers and other ancillary equipment. This work was done at several substations as part of a multi-year program to replace equipment that is obsolete, for which parts are no longer available, or require significant operations and maintenance spend to keep it in service. This project group includes both General and Transmission Plant additions.

- **ELR - Breakers - SPS ($704,203 NM retail) ($2,904,702 total company) (WBS Level 2 Numbers A.0000640.008, .020, .021, .023, .033, .035, and .039)** –This ELR project replaced circuit breakers that had reached the end of their useful life. This work was done at several substations as part of a multi-year program to replace breakers that are obsolete, for which parts are no longer available, or require significant operations and maintenance spend to keep them in service.

**Q. Please describe the types of projects included in the "TI" category.**

A. This category of investment contains the capital additions for transmission system upgrades necessary to connect transmission systems of neighboring utilities to the SPS transmission system. SPS is obligated to provide this interconnection service pursuant to the SPP OATT. SPS's New Mexico retail customers benefit from these capital additions because they may also provide improved access to market-based energy resources and also improved overall system reliability from expanded transmission system interconnection. The total investment in this category is $24,082 on a New Mexico Retail basis. The project described below accounts for more than 100% of the total capital additions in this category because the other

project had a credit identified from project closing activities, which removed dollars from the total capital additions. These projects are integral to SPS's ability to provide reliable electric service to its customers.

- **TUCO Mooreland (Woodward) ($65,192 NM retail) ($268,906 total company) (WBS Level 2 Numbers A.0000417.015 and A.0000665.005)** – This project constructed a single-circuit 345-kV transmission line between the TUCO Substation, near Lubbock, Texas, and OG&E's Woodward Substation near Woodward, Oklahoma. SPS constructed the line between the TUCO Substation and OG&E's Border Substation near the Texas and Oklahoma border and OG&E constructed the line from the Border Substation to the Woodward Substation. This project is also an Economic Project, and therefore only half of the total shown above ($32,596 NM retail) ($134,453 total company) is credited to Transmission Interconnection Projects. This project was identified in the SPP's Balanced Portfolio Economic Studies. SPP issued SPS an NTC for this project.

**Q. Please describe the types of projects included in the "OT" category.**

A. This category of investment contains the capital additions for transmission projects such as tool and equipment purchases, spare parts, and data acquisition including fault or disturbance recorders. These capital additions support the projects in the first six categories and enhance or improve transmission reliability, for example by enabling SPS to conduct diagnostic testing to prevent outages. The total investment in this category is $3,089,832 on a New Mexico retail basis. The projects described below account for approximately 85% of the total capital additions in this category.

The remaining projects are similar in nature in that they involve purchasing of equipment or spare parts, which is integral to SPS's ability to provide reliable electric service to its customers.

- **SPS Sub Communication Network Group 1 ($743,038 NM retail) ($2,879,841 total company) (WBS Level 2 Numbers A.0000795.001, .002, .003, .009, and .010)** – These projects provided for the construction of a fiber optics communication infrastructure within the SPS region. The first leg of a multi-year effort started in the Amarillo area by installing Optical Ground Wire ("OPGW") in the static position on selected transmission lines to create a redundant fiber optic communication ring with access to the Amarillo Transmission Operations Center. This ring provides redundant protection paths for the line sections on which the OPGW is installed as well as provides redundant paths for the Supervisory Control And Data Acquisition ("SCADA") system. This project group includes both General and Transmission Plant additions.

- **Security Access Control System ($590,630 NM retail) ($1,964,684 total company) (WBS Level 2 Numbers A.0001118.006, .007, and .009)** – This project replaced the existing standard locks on substation entry gates with locks that use an electronic key to restrict substation access to authorized personnel and to meet compliance requirements.

- **Fault Recorders - SPS ($364,907 NM retail) ($1,284,019 total company) (WBS Level 2 Numbers A.0000556.016, .017, .020, and .022)** – This project installed fault recorders for disturbance monitoring at substations. This project group includes both General and Transmission Plant additions.

- **Transportation - SPS ($364,367 NM retail) ($1,212,038 total company) (WBS Level 2 Numbers A.0006056.223 and .224)** – These projects purchased fleet vehicles for operation in the SPS area. The vehicles included automobiles, trucks, heavy vehicles such as bucket trucks, high-reach bucket trucks, hole-diggers, and trailers. Without

these vehicles, crews would not have access to a predictable and reliable method of transport, nor would they have the necessary equipment to perform needed transmission construction work.

- **TxDot Relocate ($287,992 NM retail) ($1,187,912 total company) (WBS Level 2 Number A.0001383.002)** – This project replaced transmission structures on several transmission lines to clear the right of way for a Texas Department of Transportation ("TxDOT") project to construct Loop 335 on the west side of Amarillo, Texas. SPS was obligated to clear the new right of way for this state highway project. TxDOT will reimburse SPS for a portion of the project costs.

- **RTU - EMS Upgrade - SPS ($235,501 NM retail) ($783,375 total company) (WBS Level 2 Numbers A.0000588.011, .031, .032, and .033)** – This project replaced remote terminal units ("RTUs") that were at the end of their useful service life.

**Q. Are the Transmission capital additions for the period of October 1, 2019 through September 30, 2020 presented in Attachment JJC-3 reasonable and necessary?**

A. Yes. As discussed in my testimony above, the Transmission capital additions presented in Attachment JJC-3 are reasonable and necessary to expand and sustain the transmission grid that serves as the path between generation and customers taking service from the transmission and distribution systems. For example, SPS must construct new transmission lines and substations to interconnect new generation and to deliver energy reliably through the transmission grid. SPS also must complete transmission system rehabilitation projects related to transmission

line and substation improvements, replacement of obsolete and failed equipment, and replacement of systems damaged by storms. These new and reinforced transmission lines, substations, and protection and control systems are integral to providing safe and reliable service to SPS customers. The process for developing costs and managing projects ensures that the expenditures are reasonable and necessary and that the costs were prudently incurred, as discussed earlier in my testimony.

## B. Transmission Capital Additions for the Period October 1, 2020 through February 28, 2021

**Q. Please describe the Transmission capital additions SPS is requesting to include in its rate base for the period of October 1, 2020 through February 28, 2021.**

A. The capital additions that have been or will be placed in service during the period of October 1, 2020 through February 28, 2021 that SPS is requesting to include in rate base are similar to the projects that were closed during the period of October 1, 2019 through September 30, 2020 and that are discussed in the previous section of my testimony. As with the projects discussed above, these projects support SPS's ability to provide safe and reliable electric service to its customers.

**Q. What is the dollar amount of the Transmission capital additions for the period of October 1, 2020 through February 28, 2021 that SPS is requesting to include in rate base?**

A. SPS is requesting $46,830,670 on a New Mexico retail basis ($191,191,997 Total Company) in Transmission capital additions for the period of October 1, 2020 through February 28, 2021. This amount consists of Transmission plant capital additions of $44,356,145 ($182,960,688 Total Company), and general plant capital additions of $2,474,526 ($8,231,309 Total Company). Attachment JJC-6 provides all the anticipated Transmission capital additions to plant-in-service during this time period.

**Q. Please describe the information included in Attachment JJC-6, which provides details about the dollar amount for Transmission capital additions for the period of October 1, 2020 through February 28, 2021.**

A. Attachment JJC-6 provides the information listed in Table JJC-4 (next page):

**Table JJC-4**

| | | |
|---|---|---|
| Column A — | Asset Class | Identifies the type of asset. |
| Column B — | Witness | Identifies the witness supporting the project. |
| Column C — | Project Category | Provides a classification of the project group's type |
| Column D— | WBS Level 1 Project Group Name | Provides the WBS Level 1 name of the project group |
| Column E — | Additions to Plant-in-Service (October 1, 2020 – February 28, 2021) Total Company | Provides the Total Company dollar amounts for the plant additions for the period of October 1, 2020 through February 28, 2021. |
| Column F — | Additions to Plant-in-Service (October 1, 2020 – February 28, 2021) NM Retail | Provides the New Mexico Retail dollar amounts for the plant additions for the period of October 1, 2020 through February 28, 2021. |

**Q. Please describe the Transmission capital additions placed in service for the period of October 1, 2020 through February 28, 2021.**

A. The Transmission capital additions listed in Attachment JJC-6 are the capital additions that have been or will be placed in service between October 1, 2020 through February 28, 2021. They are similar to the projects that were closed to plant-in-service during the period of October 1, 2019 through September 30, 2020, which are discussed in the previous subsection of my testimony. They support

SPS's transmission operations and SPS's ability to provide safe and reliable electric service to its customers. As shown in Table JJC-5 below, the Transmission capital additions for the period of October 1, 2020 through February 28, 2021 fall within one or more of the seven categories described in the previous subsection of my testimony. When a project group falls into two project categories, the dollar cost of the project group is split equally between the two categories.

**Table JJC-5**

**Transmission Capital Additions**
**for the Period of October 1, 2020 through February 28, 2021**

| Project Category | Transmission Capital Additions (total company) | Transmission Capital Additions (NM Retail) |
|---|---|---|
| Economic ("EC") | $(5,172) | $(1,254) |
| Generation Interconnection ("GI") | $299,166 | $72,272 |
| Load Interconnection ("LI") | $36,350,355 | $8,824,124 |
| Reliability ("RE") | $105,820,289 | $25,726,677 |
| System Refurbishment ("SR") | $34,305,580 | $8,336,670 |
| Transmission Interconnection ("TI") | $(5,172) | $(1,254) |
| Other ("OT") | $14,426,952 | $3,873,435 |
| **TOTAL** | **$191,191,998** | **$46,830,670** |

**Q. Please describe the types of projects included in the "EC" category.**

A. The general description of the EC category provided in the previous subsection of this testimony also applies to the projects included for the October 1, 2020 through February 28, 2021 time period identified as "EC" on Attachment JJC-6. The total planned investment in this category amounts to ($1,254) on a New Mexico retail basis during the period. The project described below accounts for over 100% of the total capital additions in this category because the other project had a credit identified from project closing activities, which removed dollars from the total capital additions. The remaining project is similar in nature in that it involved transmission interconnections to the SPP grid. These projects are integral to SPS's ability to provide reliable electric service to its customers.

- **TUCO Mooreland (Woodward) ($113 NM retail) ($466 total company)** – This project constructed a single-circuit 345-kV transmission line between the TUCO Substation, near Lubbock, Texas, and OG&E's Woodward Substation near Woodward, Oklahoma. SPS constructed the line between the TUCO Substation and OG&E's Border Substation near the Texas and Oklahoma border, and OG&E constructed the line from the Border Substation to the Woodward Substation. This project is also a Transmission Interconnection Project, and therefore only half of the total shown above ($57 NM retail) ($233 total company) is credited to Economic Projects. This project was identified in the SPP's Balanced Portfolio Economic Studies. SPP issued SPS an NTC for this project.

**Q. Please describe the types of projects included in the "GI" category.**

A. The general description of the GI category provided in the previous subsection of this testimony also applies to the projects included for the October 1, 2020 through February 28, 2021 time period identified as "GI" on Attachment JJC-6. The total planned investment in this category amounts to $72,272 on a New Mexico retail basis during the period. The project described below accounts for over 100% of the total capital additions in this category because the other projects have credits identified from project closing activities, which removed dollars from the total capital additions. The remaining projects are similar in nature in that they connect new generation sources to the transmission system, which is integral to SPS's ability to provide reliable electric service to its customers.

- **GEN-2011-025 Fiber Wind ($76,378 NM retail) ($315,044 total company)** – This project provided a 115-kV interconnection for Fiber Wind LLC's 80 megawatt wind energy facility located in Crosby County, Texas.

**Q. Please describe the types of projects included in the "LI" category.**

A. The general description of the LI category provided in the previous subsection of this testimony also applies to the projects included for the October 1, 2020 through February 28, 2020 time period identified as "LI" on Attachment JJC-6. The total planned investment in this category amounts to $8,824,124 on a New Mexico retail

basis during the period. The projects described below account for approximately 82% of the total capital additions in this category. The remaining projects are similar in nature in that they connect new load-serving substations to the transmission system, which is integral to SPS's ability to provide reliable electric service to its customers.

- **OPIE 3 Malaga Bend ($4,050,485 NM retail) ($16,707,482 total company)** – This project installed a new 115-kV distribution substation called Malaga Bend as well as two new 115-kV transmission lines, a line approximately 11 miles in length from Malaga Bend Substation to South Loving Substation and a line approximately 10 miles in length from Malaga Bend Substation to Phantom Interchange. This substation was needed to serve the rapidly increasing new distribution loads in the surrounding area.

- **OPIE 3 Roadrunner-China Draw 345kV ($3,209,796 NM retail) ($13,192,329 total company)** – This project installed the new 345/115-kV Phantom Substation as well as two new 345-kV transmission lines, a line approximately 20 miles in length from Phantom Substation to China Draw Substation and a line approximately 21 miles in length from Phantom Substation to Roadrunner Substation. This project is also a Reliability Project, and therefore only half of the total shown above ($1,604,898 NM retail) ($6,596,164 total company) is credited to Load Interconnection Projects. The Phantom Substation was needed to serve the rapidly increasing new transmission loads in the surrounding area and the looped 345-kV lines were needed to provide the needed reliability to these new loads and the existing transmission system in the area. SPP issued SPS an NTC for this project. This project group includes both General and Transmission Plant additions.

- **OPIE 3 W39 Rebuild ($1,577,666 NM retail) ($6,507,571 total company)** – This project replaced approximately 8 miles of the existing

115-kV W39 line with a new, higher capacity line. The additional capacity was needed on this line to serve new customer load in the area.

**Q. Please describe the types of projects included in the "RE" category.**

A. The general description of the RE category provided in the previous subsection of this testimony also applies to the projects included for the October 1, 2020 through February 28, 2021 time period identified as "RE" on Attachment JJC-6. The total planned investment in this category amounts to $25,726,677 on a New Mexico retail basis during the period. The projects described below account for approximately 87% of the total capital additions in this category. The remaining projects are similar in nature in that they address reliability issues, which is integral to SPS's ability to provide reliable electric service to its customers.

- **OPIE 2 Kiowa-Eddy Co 345kV ($14,847,878 NM retail) ($61,206,127 total company)** – This project constructed a new 34-mile, 345-kV transmission line between Eddy County and Kiowa Interchanges. This project also installed a 345-kV ring bus at Eddy County Interchange and a new 345-kV terminal at Kiowa Interchange. The project was identified by SPP as needed for reliability. SPP issued SPS an NTC for this project. This project group includes both General and Transmission Plant additions.

- **Mustang - Seminole 115kV Ckt1 New Line ($3,438,477 NM retail) ($14,170,333 total company)** – This project installed a 17-mile, 115-kV line and new substation terminals at Mustang Station and Seminole Interchange. The SPP NTC required a minimum summer emergency rating of 240 MVA for the line. SPP issued SPS an NTC for this project. This project group includes both General and Transmission Plant additions.

- **OPIE 3 Roadrunner-China Draw 345kV ($3,209,796 NM retail) ($13,192,329 total company)** – This project installed the new 345/115-kV Phantom Substation as well as two new 345-kV transmission lines, a line approximately 20 miles in length from Phantom Substation to China Draw Substation and a line approximately 21 miles in length from Phantom Substation to Roadrunner Substation. This project is also a Load Interconnection Project, and therefore only half of the total shown above ($1,604,898 NM retail) ($6,596,164 total company) is credited to Reliability Projects. The Phantom Substation was needed to serve the rapidly increasing new transmission loads in the surrounding area and the looped 345-kV lines were needed to provide the needed reliability to these new loads and the existing transmission system in the area. SPP issued SPS an NTC for this project. This project group includes both General and Transmission Plant additions.

- **OPIE TUCO-Hobbs 345kV_PID 30376 ($2,555,343 NM retail) ($10,540,539 total company)** – This project constructed a single-circuit 345-kV transmission line between the TUCO Substation, near Lubbock, Texas, the Yoakum Substation in Texas, and the Hobbs Generating Substation near Hobbs, New Mexico. The project was evaluated and identified in the 2013 SPP HPILS as needed for reliability to alleviate loading violations on the underlying network and voltage violations due to insufficient power supply to network load additions. In addition to its reliability benefits, the project was also identified by SPP as providing significant economic benefits. In 2016, SPP issued its Integrated Transmission Planning Near-Term study which identified the TUCO to Yoakum portion of the project as needed as soon as 2017 to mitigate voltage issues in that area. SPP issued SPS NTCs for this project. This project group includes both General and Transmission Plant additions.

**Q. Are there any other transmission reliability capital additions costs during the October 1, 2020 through February 28, 2021 period not reflected in this testimony?**

A. Yes. The project to install equipment to use the two existing generators at Tolk Station as synchronous condensers is included in SPS witness Mark Lytal's testimony. The installed equipment is a transmission asset, but SPS's Energy Supply group developed, budgeted, and constructed the project, so Mr. Lytal includes those capital addition dollars and the description of this project in his testimony.

**Q. Please describe the need for the synchronous condensers at Tolk Station.**

A. In my direct testimony in Case No. 19-00170-UT, I described the need for the two synchronous condensers at Tolk Station when both generating units are offline during the reduced operations period of October through May. Attachment JJC-7 contains the powerflow analysis SPS completed on steady state and stability models and simulating generation and transmission outages to show potential issues on the transmission system for Tolk Station in the reduced operations mode. The contingencies performed in this analysis were chosen to align with the compliance requirements that SPS must meet in the NERC standard TPL-001-4. To

summarize, the transmission system was designed to have one or both of the Tolk generating units online to provide voltage support and reactive power support to the system, which is especially critical during electrical faults on the system and for other contingency situations. Steady state power flow models and stability models simulating generation and transmission outages show that the transmission system could experience unstable oscillations and voltage collapse during specific contingencies during periods of high wind output and low fossil fuel generation output when both Tolk Station generating units are offline. The studies determined that the oscillation and voltage collapse concerns could be mitigated in the immediate future by operating one of the Tolk generators as a synchronous condenser. The transmission system would still be vulnerable if the one synchronous condenser tripped or was out of service, so both generators were planned to be operated as synchronous condensers.

**Q. Please describe how the synchronous condensers provide electrical stability and voltage support to the transmission system.**

A. In the generating mode at Tolk Station, the steam from the coal boilers spin the steam turbines, which rotates the shaft of the electrical generator causing it to produce electrical power. In synchronous condenser mode, these same electrical

generators can be operated by disconnecting them from the steam turbines and running them as electric motors on the transmission system. These large spinning machines provide electrical "inertia" to the transmission system, helping to provide stability and dynamic response to the system so that it can operate reliably during system disturbances. These synchronous condensers can nearly instantaneously generate or absorb reactive power as needed, just as the electrical generators do when operating in the generation mode. The synchronous condenser's ability to generate or absorb reactive power quickly allows them to support system voltages and dampen voltage oscillations when they occur.

**Q. Please describe the types of projects included in the "SR" category.**

A. The general description of the SR category provided in the previous subsection of this testimony also applies to the projects included for the October 1, 2020 through February 28, 2021 time period identified as "SR" on Attachment JJC-6. The total planned investment in this category amounts to $8,336,670 on a New Mexico retail basis during the period. The projects described below account for approximately 85% of the total capital additions in this category. The remaining projects are similar in nature in that they replace storm-damaged or failed equipment, which is integral to SPS's ability to provide reliable electric service to its customers.

- **S&E - SPS Line ($3,449,751 NM retail) ($14,229,570 total company)** – These projects provided for the storm and emergency work orders for the replacement or capital repair of transmission line facilities damaged by inclement weather or natural disasters.

- **ELR - Breakers - SPS ($948,200 NM retail) ($3,911,147 total company)** –This ELR project replaced circuit breakers that had reached the end of their useful life. This work was done at several substations as part of a multi-year program to replace breakers that are obsolete, for which parts are no longer available and require significant operations and maintenance spend to keep them in service.

- **SPS Group 1 Switch Replacements ($499,543 NM retail) ($2,041,069 total company)** – These projects replaced old high-maintenance or broken switches with new switches. This project group includes both General and Transmission Plant additions.

- **Spearman Breaker Replacements ($479,379 NM retail) ($1,977,257 total company)** – This project replaced two 69-kV circuit breakers, protective relay systems, communications systems, and associated equipment at Spearman Interchange. Some of this equipment had failed and the rest of the equipment was at the end of its useful life. North Plains Electric Cooperative was financially responsible for the replacement of one of the 69-kV breakers and paid for its replacement. This project group includes both General and Transmission Plant additions.

- **Tuco SVC Control and Protection Repl ($479,414 NM retail) ($1,950,986 total company)** – This project replaced the Static VAR Compensator's ("SVC") control systems, protection systems, and associated equipment. These systems were installed in 2004 and the hardware components had been failing at an increasing rate and replacement parts are no longer available. The new control and protection systems will keep this important SVC reliable and available to the system and will be serviceable for the foreseeable future. This project group includes both General and Transmission Plant additions.

- **Carlisle Cap Bank Rplmt ($451,531 NM retail) ($1,860,309 total company)** – This project replaced the 115-kV capacitor bank at Carlisle Interchange that was at the end of its useful life. The protection scheme on this capacitor bank is no longer supported by the manufacturer and parts are no longer available. The capacitor bank itself was also at the end of its useful life. This project group includes both General and Transmission Plant additions.

- **ELR RFL9300 Relays SPS ($405,886 NM retail) ($1,663,942 total company)** – This ELR project replaced the RFL-9300 relay systems with new SEL-411L line current differential relay systems. The RFL-9300 hardware is obsolete, and its electrical components are failing at an increasing rate. The manufacturer no longer supports this relay system and spare parts are not available. The new relay system provides high-speed tripping and faster backup tripping, which eliminates the problems associated with long trip times on backup relaying when the RFL-9300 systems fail. This work was done at several transmission substations as part of a multi-year program. This project group includes both General and Transmission Plant additions.

- **Line ELR SPS ($357,603 NM retail) ($1,475,045 total company)** – This ELR project provided for improvement work on transmission lines to address high priority capital defects, such as defective wood poles and cross arms, that were discovered through line inspections. Work in this ELR group included emergent work, planned usually 12 to 18 months in advance of the work being performed. This work was done on several transmission lines as part of a multi-year program to replace capital property units on a like-for-like basis and return the transmission lines to overall good health.

**Q. Please describe the types of projects included in the "TI" category.**

A. The general description of the TI category provided in the previous subsection of this testimony also applies to the projects included for the October 1, 2020 through February 28, 2021 time period identified as "TI." The total planned investment in

this category amounts to ($1,254) on a New Mexico retail basis during the period. The project described below accounts for over 100% of the total capital additions in this category because the other project had a credit identified from project closing activities, which removed dollars from the total capital additions. The remaining project is similar in nature in that it involved transmission interconnections to the SPP grid. These projects are integral to SPS's ability to provide reliable electric service to its customers.

- **TUCO Mooreland (Woodward) ($113 NM retail) ($466 total company)** – This project constructed a single-circuit 345-kV transmission line between the TUCO Substation, near Lubbock, Texas, and OG&E's Woodward Substation near Woodward, Oklahoma. SPS constructed the line between the TUCO Substation and OG&E's Border Substation near the Texas and Oklahoma border and OG&E constructed the line from the Border Substation to the Woodward Substation. This project is also an Economic Project, and therefore only half of the total shown above ($57 NM retail) ($233 total company) is credited to Transmission Interconnection Projects. This project was identified in the SPP's Balanced Portfolio Economic Studies. SPP issued SPS an NTC for this project.

**Q. Please describe the types of projects included in the "OT" category.**

A. The general description of the OT category provided in the previous subsection of this testimony also applies to the projects included for the October 1, 2020 through February 28, 2021 time period identified as "OT". The total planned investment in this category amounts to $3,873,435 on a New Mexico retail basis during the

period. The projects described below account for approximately 83% of the total capital additions in this category. The remaining projects are similar in nature in that they involve purchasing of equipment or spare parts, which is integral to SPS's ability to provide reliable electric service to its customers.

- **SPS Sub Communication Network Group 1 ($985,190 NM retail) ($3,919,915 total company)** – These projects provided for the construction of a fiber optics communication infrastructure within the SPS region. The first leg of a multi-year effort started in the Amarillo area by installing OPGW in the static position on selected transmission lines to create a redundant fiber optic communication ring with access to the Amarillo Transmission Operations Center. This ring provides redundant protection paths for the line sections on which the OPGW is installed as well as provides redundant paths for the SCADA system. This project group includes both General and Transmission Plant additions.

- **Physical Security ($725,173 NM retail) ($2,842,246 total company)** – This project installed Physical Security Upgrades affecting SPS substation protection with specific work varying by substation location, current layout, and threat history. Typical security measures included the installation of equipment such as cameras and motion sensors at substations. This project group includes both General and Transmission Plant additions.

- **Transportation - SPS ($573,761 NM retail) ($1,908,569 total company)** – These projects purchased fleet vehicles for operation in the SPS area. The vehicles included automobiles, trucks, heavy vehicles such as bucket trucks, high-reach bucket trucks, hole-diggers, and trailers. Without these vehicles, crews would not have access to a predictable and reliable method of transport nor have the necessary equipment to perform needed transmission construction work.

- **TxDot Relocate ($436,319 NM retail) ($1,799,734 total company)** – This project replaced transmission structures on several transmission lines to clear the right of way for a TxDOT project to construct Loop 335 on the

west side of Amarillo, Texas. SPS was obligated to clear the new right of way for this state highway project. TxDOT will reimburse SPS for a portion of the project costs.

- **Security Access Control System ($460,186 NM retail) ($1,530,771 total company)** – This project replaced the existing standard locks on substation entry gates with locks that use an electronic key to restrict substation access to authorized personnel and to meet compliance requirements.

**Q. Are the Transmission capital additions presented in Attachment JJC-6 consistent with what is expected to be placed in service during the period of October 1, 2020 through February 28, 2021?**

A. Yes. With respect to the included projects, the actual charges of any single capital project may vary somewhat from the planned amount on Attachment JJC-6, but it is possible that other projects will emerge or replace those listed. Attachment JJC-6 is a reasonable estimate of the total costs of the Transmission capital investment that have been or will be placed in service during the period of October 1, 2020 through February 28, 2021.

**Q. Are the Transmission capital additions for the period presented in Attachment JJC-6 reasonable and necessary?**

A. Yes. As discussed in my testimony above, the Transmission capital additions presented in Attachment JJC-6 are reasonable and necessary to expand and sustain the transmission grid that serves as the path between generation and customers

taking service from the transmission and distribution systems in the same manner as the Transmission capital additions that were placed into service during the period of October 1, 2019 through September 30, 2020. As with those projects, SPS must construct new transmission lines and substations to interconnect new generation and to deliver energy reliably through the transmission grid, as well as to complete transmission system rehabilitation projects related to transmission line and substation improvements, replace obsolete and failed equipment, and replace systems damaged by storms. These new and reinforced transmission lines, substations, and protection and control systems are integral to providing safe and reliable service to SPS customers. The process for developing costs and managing projects ensures that the expenditures are reasonable and necessary and that the costs were prudently incurred, as discussed earlier in my testimony.

## V. TRANSMISSION BUSINESS AREA O&M EXPENSES

**Q. What topic do you cover in this section of your testimony?**

A. In this section, I discuss the types of O&M services the Transmission business area provides to SPS. I explain that SPS's Transmission business area O&M expenses are reasonable and necessary to support the electric transmission services SPS provides to its New Mexico retail customers. I also explain that these expenses are representative of the ongoing level of costs SPS expects to incur for the Transmission business area.

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

A. SPS's Transmission business area is responsible for planning, siting, designing, constructing, operating, and maintaining transmission assets, which are the SPS transmission lines and substations that operate at 69 kV and higher. The transmission system transmits electricity from SPS's generating facilities and other energy resources to transmission-level customers and to the distribution system.

SPS's Transmission O&M expenses include both native SPS costs and affiliate charges. Native SPS costs are those costs incurred directly by SPS to provide electric service to customers. For example, the salaries of SPS employees are native costs.

Affiliate charges arise from services provided by XES to SPS. Those affiliate services are in addition to (i.e., are not duplicative of) the services that SPS employees provide. XES is a centralized service company and the charges for its services are provided "at cost," meaning that XES realizes no profit from those services. Affiliate charges may also include charges to SPS from other Xcel Energy Operating Companies or Xcel Energy affiliates. Similar to the charges from XES, these services are charged to SPS "at cost," and they generally involve emergency services such as storm restoration activities. SPS witness Ross L. Baumgarten provides additional details regarding the methodology of charging affiliate costs to SPS from XES and other affiliated interests.

**Q. Do any other SPS witnesses address the O&M costs for the Transmission business area?**

A. Yes. The O&M costs for the Transmission business area include labor, overheads, materials, and supplies. SPS witness Michael T. Knoll provides testimony regarding labor costs, SPS witness Richard R. Schrubbe provides testimony regarding pension and related costs, and Mr. Baumgarten provides testimony regarding the methodology of billings for labor and labor-related overheads.

**Q. Please describe SPS's Transmission-related O&M expenses for which SPS seeks recovery in its base rates.**

A. These costs are provided in Attachment JJC-8, which includes both native and XES-provided services. The Transmission-related expenses are listed under the Transmission heading on page 2 of the attachment and are denoted by the bolded FERC Account numbers in this section.

**Q. Please generally describe the types of transmission activities related to expenses recorded to FERC Accounts listed in Attachment JJC-8.**

A. Summary descriptions for the transmission activities for each of the FERC Accounts for Transmission-related O&M expenses are listed starting on page 5 of Attachment JJC-8. A more detailed description of these FERC accounts can be found at 18 C.F.R. §101 (2020).

**Q. Are the O&M services and associated costs related to the Transmission business area necessary for SPS's operations?**

A. Yes. The O&M services and associated costs are necessary to ensure that the transmission system, which is essential to providing safe and reliable electric service to SPS's customers, is reliably operated and maintained. The Transmission business area provides O&M services required by all utilities, and SPS would not be able to provide electric service to its customers without those O&M services.

**Q. Do SPS's New Mexico retail customers benefit from the O&M services that are provided by the Transmission business area?**

A. Yes. Customers directly benefit from the operation and maintenance of overhead lines and substations. The operation of those lines and substations ensures that customers have access to safe and reliable electric service. The maintenance activities identify and remedy problems on the lines and substations before they cause a problem, helping SPS continue to operate the transmission system in a safe, efficient and reliable manner and to maintain continuity of electric transmission service to SPS's New Mexico retail customers.

**Q. During the fiscal year, does the Transmission business area monitor its actual O&M expenditures versus its O&M budget?**

A. Yes. Actual versus budgeted O&M expenditures are monitored on a monthly basis by management employees of the Transmission business area. Variances from the budget amounts are evaluated each month to ensure that the charges were appropriate. When variances above or below the budgeted amount occur, action plans are developed to manage actual costs back to the budget amount. These action plans may either reduce or delay other expenditures so that overall spending complies with the approved budget.

**Q. Are employees within the Transmission business area held accountable for deviations from the O&M budget?**

A. Yes. All management employees in the Transmission business area have specific monthly budget targets to help ensure adherence to the annual budget. When variances from the budget occur, the employee responsible for that budget is required to develop an action plan to address the monthly variances and to stay on or under budget for the year.

**Q. Is the Test Year level of O&M costs associated with the Transmission business area reasonable and representative of the costs apt to prevail in the future?**

A. Yes. The Test Year level of Transmission business area O&M expenses are reasonable and representative of the costs SPS will experience in the future. As I discussed earlier, SPS provides Transmission business area services efficiently, making all reasonable efforts to manage costs and stay within the approved O&M budget.

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

A. Yes.

**BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION**

| | | |
|---|---|---|
| **IN THE MATTER OF SOUTHWESTERN PUBLIC SERVICE COMPANY'S APPLICATION FOR: (1) REVISION OF ITS RETAIL RATES UNDER ADVICE NOTICE NO. 292; (2) AUTHORIZATION AND APPROVAL TO ABANDON ITS PLANT X UNIT 3 GENERATING STATION; AND (3) OTHER ASSOCIATED RELIEF,** | ) | **CASE NO. 20-00238-UT** |
| **SOUTHWESTERN PUBLIC SERVICE COMPANY,** | ) | |
| **APPLICANT.** | ) | |

## VERIFICATION

On this day, December 24, 2020, I, Jarred J. Cooley, swear and affirm under penalty of perjury under the law of the State of New Mexico, that my testimony contained in Direct Testimony of Jarred J. Cooley is true and correct.

*/s/ Jarred J. Cooley*
JARRED J. COOLEY

**Southwestern Public Service Company**

**Total Company Amounts and Jurisdictional Percentages**

| Line No. | Witness | Description | Page No. | Line No. | Total Company Amount | Number Scale | Allocator (Name) | TY Allocator (%) | NM Amount |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Cooley | Transmission Capital Additions October 1, 2019 through February 28, 2021 | 5 | | $ 441,557,406 | Dollars | (1) | (1) | $ 108,090,476 |
| 2 | Cooley | Transmission Capital Additions October 1, 2019 through September 30, 2020 | 5 | | $ 250,365,409 | Dollars | (1) | (1) | $ 61,259,805 |
| 3 | Cooley | Transmission Capital Additions October 1, 2020 through February 28, 2021 | 5 | | $ 191,191,997 | Dollars | (1) | (1) | $ 46,830,670 |
| 4 | Cooley | Transmission Capital Additions October 1, 2019 through September 30, 2020 | 17 | | $ 250,365,409 | Dollars | (1) | (1) | $ 61,259,805 |
| 5 | Cooley | Transmission Plant Additions October 1, 2019 through September 30, 2020 | 18 | | $ 240,700,716 | Dollars | 12CP-TRAN | 24.24% | $ 58,354,371 |
| 6 | Cooley | General Plant Additions October 1, 2019 through September 30, 2020 | 18 | | $ 9,664,693 | Dollars | LABXAG | 30.06% | $ 2,905,435 |
| 7 | Cooley | Economic ("EC") | 22 | Table JJC-2 | $ 134,453 | Dollars | (1) | (1) | $ 32,596 |
| 8 | Cooley | Generation Interconnection ("GI") | 22 | Table JJC-2 | $ 6,204,773 | Dollars | (1) | (1) | $ 1,488,426 |
| 9 | Cooley | Load Interconnection ("LI") | 22 | Table JJC-2 | $ 8,743,915 | Dollars | (1) | (1) | $ 2,169,487 |
| 10 | Cooley | Reliability ("RE") | 22 | Table JJC-2 | $ 181,250,070 | Dollars | (1) | (1) | $ 43,996,962 |
| 11 | Cooley | System Refurbishment ("SR") | 22 | Table JJC-2 | $ 42,967,221 | Dollars | (1) | (1) | $ 10,458,419 |
| 12 | Cooley | Transmission Interconnection ("TI") | 22 | Table JJC-2 | $ 99,333 | Dollars | (1) | (1) | $ 24,082 |
| 13 | Cooley | Other ("OT") | 22 | Table JJC-2 | $ 10,965,644 | Dollars | (1) | (1) | $ 3,089,832 |
| 14 | Cooley | Total | 22 | Table JJC-2 | $ 250,365,409 | Dollars | (1) | (1) | $ 61,259,804 |
| 15 | Cooley | Economic ("EC") | 23 | | $ 134,453 | Dollars | (1) | (1) | $ 32,596 |
| 16 | Cooley | TUCO Mooreland(Woodward) | 23 | | $ 268,906 | Dollars | 12CP-TRAN | 24.24% | $ 65,192 |
| 17 | Cooley | Generation Interconnection ("GI") | 24 | | $ 6,204,773 | Dollars | (1) | (1) | $ 1,488,426 |
| 18 | Cooley | Gen Upgrade Tolk X Reconductor | 24 | | $ 3,062,770 | Dollars | 12CP-TRAN | 24.24% | $ 742,524 |
| 19 | Cooley | Tuco Intg 345/230kV Auto #1 upgrade | 24 | | $ 2,205,613 | Dollars | (1) | (1) | $ 534,719 |
| 20 | Cooley | Load Interconnection ("LI") | 25 | | $ 8,743,915 | Dollars | (1) | (1) | $ 2,169,487 |
| 21 | Cooley | Western St Sub (TAM) | 26 | | $ 2,772,193 | Dollars | 12CP-TRAN | 24.24% | $ 672,078 |
| 22 | Cooley | OPIE 3 Roadrunner-China Draw 345kV | 26 | | $ 3,530,194 | Dollars | 12CP-TRAN | 24.24% | $ 855,844 |
| 23 | Cooley | OPIE 3 Roadrunner-China Draw 345kV | 26 | | $ 1,765,097 | Dollars | 12CP-TRAN | 24.24% | $ 427,922 |
| 24 | Cooley | Interconnection Milwaukee | 26 | | $ 1,303,535 | Dollars | (1) | (1) | $ 316,051 |
| 25 | Cooley | OPIE 3 Malaga Bend | 26 | | $ 1,076,668 | Dollars | 12CP-TRAN | 24.24% | $ 261,022 |
| 26 | Cooley | Interconnection XTO BEU | 26 | | $ 1,040,502 | Dollars | 12CP-TRAN | 24.24% | $ 252,255 |
| 27 | Cooley | Reliability ("RE") | 27 | | $ 181,250,070 | Dollars | (1) | (1) | $ 43,996,962 |
| 28 | Cooley | OPIE TUCO-Hobbs 345kV_PID 30376 | 27 | | $ 112,467,317 | Dollars | (1) | (1) | $ 27,285,624 |
| 29 | Cooley | Eddy County Dbl Bus Dbl Brker 230kV | 28 | | $ 19,184,296 | Dollars | (1) | (1) | $ 4,640,936 |
| 30 | Cooley | OPIE N Loving-S Loving 115kV | 28 | | $ 8,661,866 | Dollars | 12CP-TRAN | 24.24% | $ 2,099,943 |
| 31 | Cooley | Plant X 115kV BFR | 28 | | $ 8,374,628 | Dollars | (1) | (1) | $ 2,069,076 |
| 32 | Cooley | System Refurbishment ("SR") | 29 | | $ 42,967,221 | Dollars | (1) | (1) | $ 10,458,419 |
| 33 | Cooley | Line ELR SPS | 29 | | $ 12,564,968 | Dollars | 12CP-TRAN | 24.24% | $ 3,046,193 |
| 34 | Cooley | S&E - SPS Line | 29 | | $ 8,710,302 | Dollars | 12CP-TRAN | 24.24% | $ 2,111,685 |
| 35 | Cooley | SPS Switch Replace | 29 | | $ 7,022,489 | Dollars | (1) | (1) | $ 1,705,443 |
| 36 | Cooley | Facility Upgrade Ancillary Equip | 29 | | $ 5,509,643 | Dollars | (1) | (1) | $ 1,355,052 |
| 37 | Cooley | ELR - Breakers - SPS | 30 | | $ 2,904,702 | Dollars | 12CP-TRAN | 24.24% | $ 704,203 |
| 38 | Cooley | Transmission Interconnection ("TI") | 31 | | $ 99,333 | Dollars | 12CP-TRAN | 24.24% | $ 24,082 |
| 39 | Cooley | TUCO Mooreland (Woodward) | 31 | | $ 268,906 | Dollars | 12CP-TRAN | 24.24% | $ 65,192 |
| 40 | Cooley | Other ("OT") | 32 | | $ 10,965,644 | Dollars | (1) | (1) | $ 3,089,832 |
| 41 | Cooley | SPS Sub Communication Network Group 1 | 33 | | $ 2,879,841 | Dollars | (1) | (1) | $ 743,038 |
| 42 | Cooley | Security Access Control System | 33 | | $ 1,964,684 | Dollars | (1) | (1) | $ 590,630 |
| 43 | Cooley | Fault Recorders - SPS | 33 | | $ 1,284,019 | Dollars | (1) | (1) | $ 364,907 |
| 44 | Cooley | Transportation - SPS | 33 | | $ 1,212,038 | Dollars | LABXAG | 30.06% | $ 364,367 |
| 45 | Cooley | TxDot Relocate | 33 | | $ 1,187,912 | Dollars | 12CP-TRAN | 24.24% | $ 287,992 |
| 46 | Cooley | RTU - EMS Upgrade - SPS | 33 | | $ 783,375 | Dollars | LABXAG | 30.06% | $ 235,501 |
| 47 | Cooley | Transmission Capital Additions October 1, 2020 through February 28, 2021 | 34 | | $ 191,191,997 | Dollars | (1) | (1) | $ 46,830,670 |

**Southwestern Public Service Company**

**Total Company Amounts and Jurisdictional Percentages**

| Line No. | Witness | Description | Page No. | Line No. | Total Company Amount | Number Scale | Allocator (Name) | TY Allocator (%) | NM Amount |
|---|---|---|---|---|---|---|---|---|---|
| 48 | Cooley | Transmission Plant Additions October 1, 2020 through February 28, 2021 | 34 | | $ 182,960,688 | Dollars | 12CP-TRAN | 24.24% | $ 44,356,145 |
| 49 | Cooley | General Plant Additions October 1, 2020 through February 28, 2021 | 34 | | $ 8,231,309 | Dollars | LABXAG | 30.06% | $ 2,474,526 |
| 50 | Cooley | Economic ("EC") | 39 | Table JJC-5 | $ (5,172) | Dollars | 12CP-TRAN | 24.24% | $ (1,254) |
| 51 | Cooley | Generation Interconnection ("GI") | 39 | Table JJC-5 | $ 299,166 | Dollars | (1) | (1) | $ 72,272 |
| 52 | Cooley | Load Interconnection ("LI") | 39 | Table JJC-5 | $ 36,350,355 | Dollars | (1) | (1) | $ 8,824,124 |
| 53 | Cooley | Reliability ("RE") | 39 | Table JJC-5 | $ 105,820,289 | Dollars | (1) | (1) | $ 25,726,677 |
| 54 | Cooley | System Refurbishment ("SR") | 39 | Table JJC-5 | $ 34,305,580 | Dollars | (1) | (1) | $ 8,336,670 |
| 55 | Cooley | Transmission Interconnection ("TI") | 39 | Table JJC-5 | $ (5,172) | Dollars | 12CP-TRAN | 24.24% | $ (1,254) |
| 56 | Cooley | Other ("OT") | 39 | Table JJC-5 | $ 14,426,952 | Dollars | (1) | (1) | $ 3,873,435 |
| 57 | Cooley | Total | 39 | Table JJC-5 | $ 191,191,996 | Dollars | (1) | (1) | $ 46,830,670 |
| 58 | Cooley | Economic ("EC") | 39 | | $ (5,172) | Dollars | 12CP-TRAN | 24.24% | $ (1,254) |
| 59 | Cooley | TUCO Mooreland (Woodward) | 40 | | $ 466 | Dollars | 12CP-TRAN | 24.24% | $ 113 |
| 60 | Cooley | Generation Interconnection ("GI") | 41 | | $ 299,166 | Dollars | (1) | (1) | $ 72,272 |
| 61 | Cooley | GEN-2011-025 Fiber Wind | 41 | | $ 315,044 | Dollars | 12CP-TRAN | 24.24% | $ 76,378 |
| 62 | Cooley | Load Interconnection ("LI") | 41 | | $ 36,350,355 | Dollars | (1) | (1) | $ 8,824,124 |
| 63 | Cooley | OPIE 3 Malaga Bend | 42 | | $ 16,707,482 | Dollars | 12CP-TRAN | 24.24% | $ 4,050,485 |
| 64 | Cooley | OPIE 3 Roadrunner-China Draw 345kV | 42 | | $ 13,192,329 | Dollars | (1) | (1) | $ 3,209,796 |
| 65 | Cooley | OPIE 3 W 39 Rebuild | 43 | | $ 6,507,571 | Dollars | 12CP-TRAN | 24.24% | $ 1,577,665 |
| 66 | Cooley | Reliability ("RE") | 43 | | $ 105,820,289 | Dollars | (1) | (1) | $ 25,726,677 |
| 67 | Cooley | OPIE 2 Kiowa-Eddy Co 345kV | 43 | | $ 61,206,127 | Dollars | (1) | (1) | $ 14,847,878 |
| 68 | Cooley | Mustang - Seminole 115kV Ckt1 New Line | 43 | | $ 14,170,333 | Dollars | (1) | (1) | $ 3,438,477 |
| 69 | Cooley | OPIE 3 Roadrunner-China Draw 345kV | 44 | | $ 13,192,329 | Dollars | (1) | (1) | $ 3,209,796 |
| 70 | Cooley | OPIE TUCO-Hobbs 345kV_PID 30376 | 44 | | $ 10,540,539 | Dollars | 12CP-TRAN | 24.24% | $ 2,555,400 |
| 71 | Cooley | System Refurbishment ("SR") | 45 | | $ 34,305,580 | Dollars | (1) | (1) | $ 8,336,670 |
| 72 | Cooley | S&E - SPS Line | 46 | | $ 14,229,570 | Dollars | 12CP-TRAN | 24.24% | $ 3,449,751 |
| 73 | Cooley | ELR - Breakers - SPS | 46 | | $ 3,911,147 | Dollars | 12CP-TRAN | 24.24% | $ 948,200 |
| 74 | Cooley | SPS Group 1 Switch Replacements | 46 | | $ 2,041,069 | Dollars | (1) | (1) | $ 499,543 |
| 75 | Cooley | Spearman Breaker Replacements | 46 | | $ 1,977,257 | Dollars | (1) | (1) | $ 479,379 |
| 76 | Cooley | Tuco SVC Control and Protection Repl | 46 | | $ 1,950,986 | Dollars | (1) | (1) | $ 479,414 |
| 77 | Cooley | Carlisle Cap Bank Rplmt | 47 | | $ 1,860,309 | Dollars | (1) | (1) | $ 451,531 |
| 78 | Cooley | ELR RFL9300 Relays SPS | 47 | | $ 1,663,942 | Dollars | (1) | (1) | $ 405,886 |
| 79 | Cooley | Line ELR SPS | 47 | | $ 1,475,045 | Dollars | 12CP-TRAN | 24.24% | $ 357,603 |
| 80 | Cooley | Transmission Interconnection ("TI") | 48 | | $ (5,172) | Dollars | 12CP-TRAN | 24.24% | $ (1,254) |
| 81 | Cooley | TUCO Mooreland (Woodward) | 48 | | $ 466 | Dollars | 12CP-TRAN | 24.24% | $ 113 |
| 82 | Cooley | Other ("OT") | 49 | | $ 14,426,952 | Dollars | (1) | (1) | $ 3,873,435 |
| 83 | Cooley | SPS Sub Communication Network Group 1 | 49 | | $ 3,919,915 | Dollars | (1) | (1) | $ 985,190 |
| 84 | Cooley | Physical Security | 49 | | $ 2,842,246 | Dollars | (1) | (1) | $ 725,173 |
| 85 | Cooley | Transportation - SPS | 49 | | $ 1,908,569 | Dollars | LABXAG | 30.06% | $ 573,761 |
| 86 | Cooley | TxDot Relocate | 50 | | $ 1,799,734 | Dollars | 12CP-TRAN | 24.24% | $ 436,319 |
| 87 | Cooley | Security Access Control System | 50 | | $ 1,530,771 | Dollars | LABXAG | 30.06% | $ 460,186 |

(1) Transmission plant allocated based on 12CP-TRAN (24.24%). Ending Transmission Plant Balances Assigned According to Radial Line Study. General and Intangible plant allocated based on LABXAG (30.06%).

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) |
|---|---|---|---|---|---|---|---|
| **Line No.** | **Asset Class** | **Witness** | **Project Category** | **WBS Level 2 Number** | **WBS Level 2 Project Description** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail** |
| 1 | Electric Transmission | Cooley | RE | A.0000673.021 | TUCO-Yoakum 345kV Line_UID 504 | $ 110,552,716 | $ 26,801,890 |
| 2 | Electric Transmission | Cooley | RE | A.0000290.001 | Eddy County Dbl Bus Dbl Brkr 230kV | 18,557,112 | 4,498,900 |
| 3 | Electric Transmission | Cooley | GI | A.0000105.001 | R27 Reconductor | 8,400,684 | 2,036,623 |
| 4 | Electric Transmission | Cooley | RE | A.0000842.004 | Plant X Add BFR on All 115 kV | 6,886,105 | 1,669,435 |
| 5 | Electric Transmission | Cooley | RE | A.0002055.001 | W77 Canyon East Tap to Arrowhe | 6,161,479 | 1,493,760 |
| 6 | Electric Transmission | Cooley | RE | A.0000916.004 | Deaf Smith 230kV Breaker ADD S | 5,972,551 | 1,447,958 |
| 7 | Electric Transmission | Cooley | SR | A.0001369.001 | Plant X Rpl Brkr Switch WT Sub | 4,743,970 | 1,150,106 |
| 8 | Electric Transmission | Cooley | RE | A.0000424.122 | N Loving 115kV Bus & S Loving | 4,707,462 | 1,141,255 |
| 9 | Electric Transmission | Cooley | SR | A.0000514.004 | Carlsbad 115kV Switch Replacement | 4,606,689 | 1,116,824 |
| 10 | Electric Transmission | Cooley | SR | A.0000499.015 | SPS 230kV ELR TX 2016 | 4,019,639 | 974,503 |
| 11 | Electric Transmission | Cooley | RE | A.0000635.001 | W-26 Cunningham-Monument Tap wreck | 3,825,158 | 927,354 |
| 12 | Electric Transmission | Cooley | SR | A.0000640.039 | Sundown Bkr/Sw | 2,832,177 | 686,620 |
| 13 | Electric Transmission | Cooley | RE | A.0000424.119 | N Loving-S Loving 115 kV Line | 2,808,839 | 680,962 |
| 14 | Electric Transmission | Cooley | SR | A.0000499.019 | J14 ELR Maintenance | 2,405,377 | 583,148 |
| 15 | Electric Transmission | Cooley | SR | A.0000776.003 | Spare 230 115 250 MVA | 2,349,257 | 569,543 |
| 16 | Electric Transmission | Cooley | GI | A.0000564.002 | Tuco 345 Trsf Rplmnt Sub Portion | 2,205,613 | 534,719 |
| 17 | Electric Transmission | Cooley | SR | A.0000514.002 | Plant X 115kV Switch Replacement | 2,119,676 | 513,884 |
| 18 | Electric Transmission | Cooley | SR | A.0000499.013 | SPS ELR 115kV TX 2016 | 2,055,733 | 498,382 |
| 19 | Electric Transmission | Cooley | RE | A.0000126.005 | Artesia Cty Club Line | 1,929,959 | 467,890 |
| 20 | Electric Transmission | Cooley | RE | A.0001167.004 | TUCO SPE relay Upgrades TX | 1,831,424 | 444,002 |
| 21 | Electric Transmission | Cooley | RE/LI | A.0001189.011 | OPIE China Draw-Phantom 345 ROW | 1,709,591 | 414,465 |
| 22 | Electric Transmission | Cooley | SR | A.0000499.012 | SPS ELR 69kV TX 2016 | 1,635,136 | 396,415 |
| 23 | Electric Transmission | Cooley | SR | A.0000303.045 | SPS S&E 115kV Line TX | 1,521,577 | 368,884 |
| 24 | Electric Transmission | Cooley | RE/LI | A.0001189.009 | OPIE Phantom Roadrunner 345 ROW | 1,470,682 | 356,545 |
| 25 | Electric Transmission | Cooley | LI | A.0001137.003 | Western St Sub U-30 terminal (Coult | 1,384,137 | 335,564 |
| 26 | Electric Transmission | Cooley | GI | A.0000350.001 | Lost Draw Substation | 1,271,601 | 308,281 |
| 27 | Electric Transmission | Cooley | SR | A.0000303.064 | T53 PPR Schld pole Replacement | 1,246,815 | 302,272 |
| 28 | Electric Transmission | Cooley | RE | A.0000424.099 | China Draw-Wood Draw 115kV Lin | 1,198,517 | 290,563 |
| 29 | Electric Transmission | Cooley | OT | A.0001383.002 | TxDot T 37 Relocate ROW | 1,187,912 | 287,992 |
| 30 | Electric Transmission | Cooley | SR | A.0000303.062 | V04 Structure Replacement | 1,092,487 | 264,857 |
| 31 | Electric Transmission | Cooley | RE | A.0000424.121 | S Loving 115kV Conv From 69kV | 1,080,571 | 261,969 |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) |
|---|---|---|---|---|---|---|---|
| **Line No.** | **Asset Class** | **Witness** | **Project Category** | **WBS Level 2 Number** | **WBS Level 2 Project Description** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail** |
| 32 | Electric Transmission | Cooley | LI | A.0001214.005 | U26 LS Malaga 115kV ROW | 1,076,668 | 261,022 |
| 33 | Electric Transmission | Cooley | SR | A.0000220.006 | SPS S&E, Sub | 1,061,530 | 257,352 |
| 34 | Electric Transmission | Cooley | LI | A.0001384.002 | Inst W76 115KV 2-1 Wy Sw_XCEL PORT | 1,040,502 | 252,254 |
| 35 | Electric Transmission | Cooley | RE | A.0001030.002 | Mustang - Seminole ROW | 972,898 | 235,865 |
| 36 | Electric Transmission | Cooley | RE | A.0001044.010 | Tierra Blanca 115kV Sub Land | 930,510 | 225,589 |
| 37 | Electric Transmission | Cooley | OT | A.0000795.001 | SPS Sub Comm Network Group 1 L | 923,507 | 223,891 |
| 38 | Electric Transmission | Cooley | SR | A.0000303.040 | SPS S&E 69kV Line NM | 911,889 | 221,074 |
| 39 | Electric Transmission | Cooley | GI/LI | A.0000888.002 | XTO Tap 3 Way Switch Transmission | 888,603 | 215,429 |
| 40 | Electric Transmission | Cooley | RE | A.0000979.005 | Yoakum Relay upgrade Sub Porti | 869,510 | 210,800 |
| 41 | Electric Transmission | Cooley | RE | A.0001167.034 | Cochran V56 Line SPE Relay Upgrades | 863,980 | 209,459 |
| 42 | Electric Transmission | Cooley | RE | A.0001030.010 | U01 1 U01 14 Circuit DC with U25 | 847,861 | 205,552 |
| 43 | Electric Transmission | Cooley | RE | A.0001167.033 | Indiana V15 SPE Relay Upgrades TX | 804,039 | 194,927 |
| 44 | Electric Transmission | Cooley | RE | A.0001059.004 | Eddy County 4950 Relay Upgrade TPL | 768,978 | 186,427 |
| 45 | Electric Transmission | Cooley | LI | A.0001137.004 | Western St Sub U-31 terminal (S Geo | 745,491 | 180,733 |
| 46 | Electric Transmission | Cooley | SR | A.0000303.067 | K90 Str Rpl PPR | 739,525 | 179,287 |
| 47 | Electric Transmission | Cooley | SR | A.0000499.027 | Y79 ELR Maintanence | 731,850 | 177,426 |
| 48 | Electric Transmission | Cooley | SR | A.0000303.090 | K24 Str Rpl PPR | 693,946 | 168,237 |
| 49 | Electric Transmission | Cooley | RE | A.0000673.031 | Yoakum Sub Xmfr 345kV/230KV_UI | 685,846 | 166,273 |
| 50 | Electric Transmission | Cooley | RE | A.0000290.010 | Eddy County 4K40 ABB Breaker | 679,908 | 164,834 |
| 51 | Electric Transmission | Cooley | SR | A.0000303.092 | K86 Str Rpl PPR | 676,056 | 163,900 |
| 52 | Electric Transmission | Cooley | SR | A.0000499.029 | Z65 ELR Maintenance | 659,860 | 159,973 |
| 53 | Electric Transmission | Cooley | SR | A.0000538.008 | Z18 Tuco-Plainview Line | 650,671 | 157,746 |
| 54 | Electric Transmission | Cooley | SR | A.0000401.050 | East Plant 2K50 Relay Replacement | 648,070 | 157,115 |
| 55 | Electric Transmission | Cooley | RE | A.0000979.008 | Relay Upg - DVCY Shell Term | 619,235 | 150,124 |
| 56 | Electric Transmission | Cooley | RE | A.0000781.013 | Bushland Relay | 595,157 | 144,287 |
| 57 | Electric Transmission | Cooley | RE | A.0000673.040 | Terry Co Sub Repeater | 576,452 | 139,752 |
| 58 | Electric Transmission | Cooley | OT | A.0000795.002 | SPS Sub Comm Network Group 1 S | 537,859 | 130,396 |
| 59 | Electric Transmission | Cooley | LI | A.0001079.002 | Inst 115kV Quincy Sw Station Xcel P | 526,776 | 127,709 |
| 60 | Electric Transmission | Cooley | LI | A.0001024.009 | Outpost PLC Removal | 512,435 | 124,232 |
| 61 | Electric Transmission | Cooley | LI | A.0001079.011 | Quincy Land | 508,551 | 123,291 |
| 62 | Electric Transmission | Cooley | RE | A.0000842.002 | Hale Co Relay Upgrade for Plan | 505,818 | 122,628 |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) |
|---|---|---|---|---|---|---|---|
| **Line No.** | **Asset Class** | **Witness** | **Project Category** | **WBS Level 2 Number** | **WBS Level 2 Project Description** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail** |
| 63 | Electric Transmission | Cooley | SR | A.0000499.052 | T52 Str Rpl | 488,864 | 118,518 |
| 64 | Electric Transmission | Cooley | SR | A.0000401.030 | Harrington 230kV K44 (FK40)Sub | 486,495 | 117,944 |
| 65 | Electric Transmission | Cooley | SR | A.0000220.018 | SPS NM S&E, Sub | 458,937 | 111,263 |
| 66 | Electric Transmission | Cooley | SR | A.0001273.005 | Facil UpgSub Ancillary Eq2016 | 447,447 | 108,477 |
| 67 | Electric Transmission | Cooley | OT | A.0000795.010 | Kirby Jericho T-52 115kV Line | 445,493 | 108,003 |
| 68 | Electric Transmission | Cooley | LI | A.0001221.002 | INST Switch Xcel Portion | 416,687 | 101,020 |
| 69 | Electric Transmission | Cooley | GI | A.0001359.001 | Castro Co Terminal Orion Wind | 400,402 | 97,072 |
| 70 | Electric Transmission | Cooley | SR | A.0000499.033 | T78 Str Rpl | 371,587 | 90,086 |
| 71 | Electric Transmission | Cooley | OT | A.0000556.016 | Oasis 230 115kV Fault Recorder | 362,600 | 87,907 |
| 72 | Electric Transmission | Cooley | RE | A.0001244.001 | Terry Co Sub V24 Term Upgrade | 356,236 | 86,364 |
| 73 | Electric Transmission | Cooley | RE | A.0001147.002 | V55 Terry Co Terminal | 351,384 | 85,188 |
| 74 | Electric Transmission | Cooley | RE | A.0000646.002 | Perryton Substation Sub | 324,133 | 78,581 |
| 75 | Electric Transmission | Cooley | RE | A.0000424.136 | Monument-Byrd 115kvRecond Line | 313,842 | 76,086 |
| 76 | Electric Transmission | Cooley | SR | A.0000303.057 | SPS Priority Defects 115kV Line TX | 302,810 | 73,412 |
| 77 | Electric Transmission | Cooley | SR | A.0000303.053 | SPS Priority Defects 69kV Line TX | 302,140 | 73,249 |
| 78 | Electric Transmission | Cooley | RE/LI | A.0001189.007 | OPIE Phantom Sub Land | 296,449 | 71,870 |
| 79 | Electric Transmission | Cooley | RE | A.0000635.002 | Cunningham W-26 line terminal upgra | 293,852 | 71,240 |
| 80 | Electric Transmission | Cooley | SR | A.0000499.031 | T68 ELR Maintenance | 288,284 | 69,890 |
| 81 | Electric Transmission | Cooley | RE | A.0000673.023 | Yoakum-TX/NM Border 345kV Line | 271,866 | 65,910 |
| 82 | Electric Transmission | Cooley | GI | A.0000350.002 | Lost Draw TOIF | 271,299 | 65,773 |
| 83 | Electric Transmission | Cooley | LI | A.0001079.001 | Inst 115kV Quincy Sw Station TOIF P | 267,103 | 64,755 |
| 84 | Electric Transmission | Cooley | EC/TI | A.0000665.005 | TUCO  Mooreland Woodward TX RO | 258,822 | 62,748 |
| 85 | Electric Transmission | Cooley | RE | A.0001054.001 | Coulter Switch Replacemnts | 256,159 | 62,102 |
| 86 | Electric Transmission | Cooley | LI | A.0001126.001 | Inst Temp Switch Reimb TOIF | 248,449 | 60,233 |
| 87 | Electric Transmission | Cooley | SR | A.0000514.006 | Pecos Sub Relay Upg-Carlsbad | 245,510 | 59,520 |
| 88 | Electric Transmission | Cooley | SR | A.0000286.005 | Horz Cap and Pin Replacement TX | 240,244 | 58,244 |
| 89 | Electric Transmission | Cooley | RE | A.0000424.242 | J14 Eddy Reterm Line | 228,887 | 55,490 |
| 90 | Electric Transmission | Cooley | RE | A.0000424.037 | OPIE 3_Hobbs-Kiowa 345kV Line_ | 222,377 | 53,912 |
| 91 | Electric Transmission | Cooley | SR | A.0001267.001 | 345/115kV 448MVA XfmrspareSub | 212,904 | 51,616 |
| 92 | Electric Transmission | Cooley | LI | A.0001137.001 | U-31 reterm Western St Sub | 212,890 | 51,612 |
| 93 | Electric Transmission | Cooley | SR | A.0000640.033 | Eddy Co 4K80 Bkr Replace | 202,200 | 49,020 |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) |
|---|---|---|---|---|---|---|---|
| **Line No.** | **Asset Class** | **Witness** | **Project Category** | **WBS Level 2 Number** | **WBS Level 2 Project Description** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail** |
| 94 | Electric Transmission | Cooley | OT | A.0000795.009 | Kirby Fiber Ring Sub | 201,982 | 48,968 |
| 95 | Electric Transmission | Cooley | SR | A.0000303.061 | 345 kV Emergency H Frame Structures | 199,248 | 48,305 |
| 96 | Electric Transmission | Cooley | RE | A.0000424.150 | OPIE PTJU Intrepid Term Sub | 187,333 | 45,416 |
| 97 | Electric Transmission | Cooley | RE | A.0001244.003 | V24 T Line | 183,185 | 44,411 |
| 98 | Electric Transmission | Cooley | SR | A.0000303.044 | SPS S&E 69kV Line TX | 174,521 | 42,310 |
| 99 | Electric Transmission | Cooley | LI | A.0001137.002 | U-30 reterm Western St Sub | 170,828 | 41,415 |
| 100 | Electric Transmission | Cooley | SR | A.0000303.083 | T79 Str Rpl PPR | 165,915 | 40,224 |
| 101 | Electric Transmission | Cooley | RE | A.0000424.274 | K23 Term Str Replacement | 165,201 | 40,051 |
| 102 | Electric Transmission | Cooley | LI | A.0001137.006 | CLTR, U-30 terminal | 151,751 | 36,790 |
| 103 | Electric Transmission | Cooley | RE | A.0002055.003 | Wreckout and Rebuild ROW | 143,862 | 34,877 |
| 104 | Electric Transmission | Cooley | SR | A.0000303.063 | V04 Structure Replacement ROW | 142,396 | 34,522 |
| 105 | Electric Transmission | Cooley | RE | A.0001042.002 | T30 Structure Replacement | 140,280 | 34,009 |
| 106 | Electric Transmission | Cooley | SR | A.0000303.041 | SPS S&E 115kV Line NM | 131,850 | 31,965 |
| 107 | Electric Transmission | Cooley | RE | A.0001319.009 | Canyon West Sub W40 Term Upgr | 131,498 | 31,880 |
| 108 | Electric Transmission | Cooley | RE | A.0000781.014 | Coulter Relay | 127,528 | 30,917 |
| 109 | Electric Transmission | Cooley | SR | A.0000303.027 | SPS 2019 S&E B 230KV Line | 121,695 | 29,503 |
| 110 | Electric Transmission | Cooley | RE | A.0001041.009 | K53 Term Upgrade Grapevine Nichols | 111,186 | 26,956 |
| 111 | Electric Transmission | Cooley | SR | A.0000303.069 | W07 Str Rpl PPR | 110,362 | 26,756 |
| 112 | Electric Transmission | Cooley | RE | A.0000842.008 | Plant X-Bailey Carrier Equipment | 109,000 | 26,426 |
| 113 | Electric Transmission | Cooley | RE | A.0001285.001 | NEF-Targa Reconductor | 108,144 | 26,218 |
| 114 | Electric Transmission | Cooley | RE | A.0000842.006 | Plant X-Lamton Carrier Equipment | 107,338 | 26,023 |
| 115 | Electric Transmission | Cooley | LI | A.0001137.005 | SOGE, U-31 terminal | 107,098 | 25,964 |
| 116 | Electric Transmission | Cooley | RE | A.0000290.005 | Cunningham Intg, Upgrade Eddy 230kV | 105,304 | 25,529 |
| 117 | Electric Transmission | Cooley | LI | A.0001399.001 | Yuma CT/PT Metering | 102,505 | 24,851 |
| 118 | Electric Transmission | Cooley | SR | A.0000499.030 | Z36 ELR Maintenance | 101,113 | 24,513 |
| 119 | Electric Transmission | Cooley | RE | A.0000842.007 | Plant X-Castro Carrier Equipment | 100,076 | 24,262 |
| 120 | Electric Transmission | Cooley | RE | A.0000663.001 | Sundown Sub, Amoco Terminal | 97,570 | 23,654 |
| 121 | Electric Transmission | Cooley | RE | A.0000424.095 | Road Runner Sub Xfmr 345kV_UID | 91,110 | 22,088 |
| 122 | Electric Transmission | Cooley | LI | A.0000424.237 | Roadrunner 115kV Bus Expansion | 89,592 | 21,720 |
| 123 | Electric Transmission | Cooley | SR | A.0000303.046 | SPS S&E 345kV Line TX | 88,741 | 21,514 |
| 124 | Electric Transmission | Cooley | RE | A.0001041.008 | K73 Terminal Upgrade Grapevine | 87,283 | 21,160 |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) |
|---|---|---|---|---|---|---|---|
| **Line No.** | **Asset Class** | **Witness** | **Project Category** | **WBS Level 2 Number** | **WBS Level 2 Project Description** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail** |
| 125 | Electric Transmission | Cooley | SR | A.0000220.007 | SPS 2017 S&E Sub | 86,930 | 21,075 |
| 126 | Electric Transmission | Cooley | RE | A.0001028.001 | Upgr Nichols 230kV (K62) Term to Am | 85,726 | 20,783 |
| 127 | Electric Transmission | Cooley | RE | A.0000481.001 | ink basin substation | 80,485 | 19,512 |
| 128 | Electric Transmission | Cooley | RE | A.0001042.004 | T30 Structures RPLMT Full Cond TX | 73,575 | 17,837 |
| 129 | Electric Transmission | Cooley | LI | A.0001227.001 | NW LCEC 115kV Term JODW | 71,180 | 17,257 |
| 130 | Electric Transmission | Cooley | RE | A.0000494.002 | Seminole Xfmr 2 | 67,452 | 16,353 |
| 131 | Electric Transmission | Cooley | RE | A.0000424.257 | W 72 U 18 Common Structure | 58,765 | 14,247 |
| 132 | Electric Transmission | Cooley | RE | A.0000663.002 | Amoco Sub, Sundown Terminal | 57,605 | 13,966 |
| 133 | Electric Transmission | Cooley | RE | A.0000424.085 | Kiowa-North Loving 345kV Line_ | 55,165 | 13,374 |
| 134 | Electric Transmission | Cooley | RE | A.0000616.001 | Soncy Dist. Transformer Conv. | 53,053 | 12,862 |
| 135 | Electric Transmission | Cooley | RE/LI | A.0001189.026 | China Draw Land | 52,372 | 12,697 |
| 136 | Electric Transmission | Cooley | SR | A.0000303.059 | SPS Priority Defects 230kV Line TX | 47,211 | 11,446 |
| 137 | Electric Transmission | Cooley | SR | A.0000303.056 | SPS Priority Defects 115kV Line NM | 46,105 | 11,178 |
| 138 | Electric Transmission | Cooley | SR | A.0000401.033 | Potash Junction 115kV 4920 | 46,018 | 11,156 |
| 139 | Electric Transmission | Cooley | SR | A.0001078.001 | Yoakum UPLC Upgrade | 42,858 | 10,390 |
| 140 | Electric Transmission | Cooley | RE | A.0000194.001 | Cochran 115 Cap Bank | 41,501 | 10,061 |
| 141 | Electric Transmission | Cooley | LI | A.0001227.002 | NW LCEC 115kV TERM JODW TOIF | 41,221 | 9,993 |
| 142 | Electric Transmission | Cooley | RE | A.0000511.021 | Carl-Wolf Sundown Relay at Wo | 40,468 | 9,811 |
| 143 | Electric Transmission | Cooley | SR | A.0000303.055 | SPS Priority Defects 69kV Line NM | 39,929 | 9,680 |
| 144 | Electric Transmission | Cooley | RE | A.0000979.010 | Shell Substation Sub Portion | 36,476 | 8,843 |
| 145 | Electric Transmission | Cooley | RE | A.0000424.165 | N Loving Sub Xfmr 345kV/115kV_ | 35,882 | 8,699 |
| 146 | Electric Transmission | Cooley | RE | A.0000424.231 | W87 China Draw Chevron Tap 115kV Li | 35,325 | 8,564 |
| 147 | Electric Transmission | Cooley | SR | A.0000401.047 | Hale Co 3911 Relay Replacement | 33,483 | 8,118 |
| 148 | Electric Transmission | Cooley | SR | A.0000427.016 | W14 Y98 Clearance Violations | 32,669 | 7,920 |
| 149 | Electric Transmission | Cooley | RE | A.0000481.002 | New Ink Basin 230/115kV Transformer | 31,868 | 7,726 |
| 150 | Electric Transmission | Cooley | RE | A.0000424.143 | IMC1-Intrepid West 115kv Recd | 31,716 | 7,689 |
| 151 | Electric Transmission | Cooley | RE | A.0000673.026 | TX/NM Border-Hobbs 345kV ROW_U | 30,217 | 7,326 |
| 152 | Electric Transmission | Cooley | RE | A.0000519.001 | Roosevelt County Substation | 29,652 | 7,189 |
| 153 | Electric Transmission | Cooley | RE | A.0000481.012 | New 230/115kV Transformer | 28,520 | 6,914 |
| 154 | Electric Transmission | Cooley | RE | A.0000979.007 | Mustang Sub Sub Portion Sub | 28,043 | 6,799 |
| 155 | Electric Transmission | Cooley | SR | A.0000220.038 | PCA Land Lease | 25,986 | 6,300 |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020**

| Line No. | (A) Asset Class | (B) Witness | (C) Project Category | (D) WBS Level 2 Number | (E) WBS Level 2 Project Description | (F) Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company | (G) Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail |
|---|---|---|---|---|---|---|---|
| 156 | Electric Transmission | Cooley | RE | A.0000673.039 | Hobbs Sub 345kV Yoakum Reator | 24,773 | 6,006 |
| 157 | Electric Transmission | Cooley | SR | A.0000401.048 | TUCO N912 Relay Replacement | 24,755 | 6,001 |
| 158 | Electric Transmission | Cooley | RE | A.0000424.087 | N Loving-China Draw 345kV Line | 23,587 | 5,718 |
| 159 | Electric Transmission | Cooley | RE | A.0000484.002 | Allen Sub, Lubbock S. Term | 23,311 | 5,651 |
| 160 | Electric Transmission | Cooley | LI | A.0001008.002 | Inst 230kV Sw Station XcelPortion | 22,293 | 5,405 |
| 161 | Electric Transmission | Cooley | RE | A.0000424.044 | Hobbs Sub Xfmr 345kV/230kV_UID | 22,058 | 5,348 |
| 162 | Electric Transmission | Cooley | GI | A.0000736.001 | Needmore Substation TOIF | 21,613 | 5,240 |
| 163 | Electric Transmission | Cooley | RE | A.0000424.145 | Potash-Intrepid West 115kvRecd | 21,547 | 5,224 |
| 164 | Electric Transmission | Cooley | RE | A.0001041.007 | T71 Terminal upgrade Yuma | 21,015 | 5,095 |
| 165 | Electric Transmission | Cooley | SR | A.0001421.004 | Spearman Land | 20,660 | 5,009 |
| 166 | Electric Transmission | Cooley | RE | A.0000484.001 | Lubbock S. Sub, Allen Term | 20,087 | 4,870 |
| 167 | Electric Transmission | Cooley | SR | A.0000303.007 | SPS S&E B 230kV, Line | 19,668 | 4,768 |
| 168 | Electric Transmission | Cooley | SR | A.0000303.058 | SPS Priority Defects 230kV Line NM | 19,565 | 4,743 |
| 169 | Electric Transmission | Cooley | OT | A.0000710.003 | SPS Physical Security Sub Infrastru | 19,414 | 4,707 |
| 170 | Electric Transmission | Cooley | RE | A.0000540.001 | Atoka-Eagle Creek 115 kV Line | 18,749 | 4,545 |
| 171 | Electric Transmission | Cooley | RE | A.0000290.003 | K23 Retermination, Eddy Co Sub | 18,578 | 4,504 |
| 172 | Electric Transmission | Cooley | OT | A.0001003.001 | Lighthouse Switch Install Transmiss | 17,139 | 4,155 |
| 173 | Electric Transmission | Cooley | SR | A.0000401.022 | Blackhawk 115kV T48 (1H70)Sub | 16,464 | 3,991 |
| 174 | Electric Transmission | Cooley | RE | A.0000424.093 | Road Runner Sub 345kV Conv_UID | 15,906 | 3,856 |
| 175 | Electric Transmission | Cooley | RE | A.0001271.004 | Cardinal-Teague Recond 115kV | 15,349 | 3,721 |
| 176 | Electric Transmission | Cooley | SR | A.0000220.024 | SPS 2015 KS SE Sub | 13,394 | 3,247 |
| 177 | Electric Transmission | Cooley | RE | A.0001284.001 | Lynn Co 115/69 Xfmr #1 Upgrade | 13,287 | 3,221 |
| 178 | Electric Transmission | Cooley | RE | A.0000673.022 | TUCO-Yoakum 345kV ROW_UID 5044 | 10,740 | 2,604 |
| 179 | Electric Transmission | Cooley | EC/TI | A.0000417.015 | TUCO-Mooreland Woodward TX ROW 2017 | 10,084 | 2,445 |
| 180 | Electric Transmission | Cooley | SR | A.0000401.032 | Hutchinson 115kV T48 (1936)Sub | 9,825 | 2,382 |
| 181 | Electric Transmission | Cooley | RE | A.0000424.033 | ChinaDraw 115kV Sub Y Hill Ter | 9,396 | 2,278 |
| 182 | Electric Transmission | Cooley | SR | A.0001273.008 | V40 Switches and Jumpers at Carlisl | 9,073 | 2,200 |
| 183 | Electric Transmission | Cooley | RE | A.0000463.001 | Portales 115kV Loop Line | 8,663 | 2,100 |
| 184 | Electric Transmission | Cooley | RE | A.0000860.003 | Curry Co Dist Xfmr Conversion | 8,386 | 2,033 |
| 185 | Electric Transmission | Cooley | RE | A.0000663.005 | K03 Structure Upgrade | 8,315 | 2,016 |
| 186 | Electric Transmission | Cooley | RE | A.0000424.058 | T38 Potash Re-Term_UID 50924 | 8,129 | 1,971 |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) |
|---|---|---|---|---|---|---|---|
| **Line No.** | **Asset Class** | **Witness** | **Project Category** | **WBS Level 2 Number** | **WBS Level 2 Project Description** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail** |
| 187 | Electric Transmission | Cooley | LI | A.0001156.001 | Int 1 Way 115kV Switch Tap | 7,996 | 1,939 |
| 188 | Electric Transmission | Cooley | LI | A.0001024.008 | U24 Reterm Hillside | 7,937 | 1,924 |
| 189 | Electric Transmission | Cooley | RE | A.0001059.005 | Roswell 4910 Relay Upgrade TPL | 7,581 | 1,838 |
| 190 | Electric Transmission | Cooley | LI | A.0000175.001 | Install 3 Way Switch_Chevron_Trans | 6,883 | 1,669 |
| 191 | Electric Transmission | Cooley | RE | A.0000296.005 | NE Hereford to New Center St. | 6,833 | 1,657 |
| 192 | Electric Transmission | Cooley | RE | A.0000673.030 | Yoakum 345kV Sub Reactor/Hobbs | 6,755 | 1,638 |
| 193 | Electric Transmission | Cooley | RE | A.0000424.120 | N Loving-S Loving 115 kVROW | 6,228 | 1,510 |
| 194 | Electric Transmission | Cooley | SR | A.0000640.021 | W07 Tx Cty SS Fr DCB to DCUB Rpl SE | 5,955 | 1,444 |
| 195 | Electric Transmission | Cooley | RE | A.0000616.006 | 69kV Line Tap to Soncy Line | 5,932 | 1,438 |
| 196 | Electric Transmission | Cooley | RE | A.0000424.029 | V21_Quahada 115kV Reconductor | 5,799 | 1,406 |
| 197 | Electric Transmission | Cooley | LI | A.0001002.001 | 115kV N loving Sub TOIF Lucid Porti | 5,083 | 1,232 |
| 198 | Electric Transmission | Cooley | RE | A.0000424.088 | Kiowa-Road Runner 345kV Line_U | 4,984 | 1,208 |
| 199 | Electric Transmission | Cooley | RE | A.0000296.008 | NE Hereford Sub | 4,882 | 1,184 |
| 200 | Electric Transmission | Cooley | LI | A.0001008.001 | Inst 230kV Sw Station TOIFPortion | 4,867 | 1,180 |
| 201 | Electric Transmission | Cooley | RE | A.0000635.004 | W26 Cunningham Monument Tap ROW | 4,480 | 1,086 |
| 202 | Electric Transmission | Cooley | RE | A.0001300.013 | Roswell Intg 115KVBkr One Half | 4,016 | 974 |
| 203 | Electric Transmission | Cooley | RE | A.0000511.020 | Carl-Wolf Lubbock S Relay at | 3,945 | 956 |
| 204 | Electric Transmission | Cooley | SR | A.0000427.001 | SPS Line Capacity Line | 3,752 | 910 |
| 205 | Electric Transmission | Cooley | RE | A.0001325.007 | W77 Reconductor Arrowhead to Randal | 3,578 | 867 |
| 206 | Electric Transmission | Cooley | RE | A.0000513.005 | Denver City Breaker W900 Replacemen | 3,414 | 828 |
| 207 | Electric Transmission | Cooley | RE | A.0000424.110 | Eddy Co 345kV Sub Land | 3,386 | 821 |
| 208 | Electric Transmission | Cooley | SR | A.0000427.014 | K21 Clearance Violations | 3,268 | 792 |
| 209 | Electric Transmission | Cooley | LI | A.0001024.001 | Hillside, high side | 3,140 | 761 |
| 210 | Electric Transmission | Cooley | GI | A.0000537.001 | Novus Wind IV - Hitchland Sub | 2,818 | 683 |
| 211 | Electric Transmission | Cooley | RE | A.0000767.008 | East Plant Relay Sub | 2,718 | 659 |
| 212 | Electric Transmission | Cooley | RE | A.0001310.003 | Walkemeyer 345/115 Sub | 2,544 | 617 |
| 213 | Electric Transmission | Cooley | GI | A.0001183.002 | Less Terminal Upgrade Sub | 2,520 | 611 |
| 214 | Electric Transmission | Cooley | RE | A.0000424.109 | Kiowa-Eddy Co 345kV ROW | 2,417 | 586 |
| 215 | Electric Transmission | Cooley | GI | A.0000621.005 | Lubbock So-Repl Switches 6951& | 1,987 | 482 |
| 216 | Electric Transmission | Cooley | RE | A.0001300.024 | Z09 Removal from S Main St to RIAC | 1,884 | 457 |
| 217 | Electric Transmission | Cooley | RE | A.0000482.001 | k32 terminal upgrades potter & harr | 1,675 | 406 |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) |
|---|---|---|---|---|---|---|---|
| **Line No.** | **Asset Class** | **Witness** | **Project Category** | **WBS Level 2 Number** | **WBS Level 2 Project Description** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail** |
| 218 | Electric Transmission | Cooley | RE | A.0000511.026 | K39 LPL Line Reterm at Carlisle | 1,496 | 363 |
| 219 | Electric Transmission | Cooley | RE | A.0000511.004 | Carlisle to Wofforth Wolfforth | 1,463 | 355 |
| 220 | Electric Transmission | Cooley | SR | A.0000286.015 | Tuco Replace 69kV Cap and Pin Switc | 1,411 | 342 |
| 221 | Electric Transmission | Cooley | LI | A.0001002.002 | 115kV N loving Sub Ter Upg Xcel Por | 1,384 | 336 |
| 222 | Electric Transmission | Cooley | RE | A.0000481.005 | V-80 Reterm Out, Line | 1,292 | 313 |
| 223 | Electric Transmission | Cooley | LI | A.0001061.009 | XIT 115kV Sub TOIF | 1,237 | 300 |
| 224 | Electric Transmission | Cooley | LI | A.0001008.009 | R11 230kV BRU Mahoney TLINE | 1,156 | 280 |
| 225 | Electric Transmission | Cooley | RE | A.0000781.015 | Modify V44 at Colter for SL335 | 1,116 | 270 |
| 226 | Electric Transmission | Cooley | RE/LI | A.0001189.005 | OPIE PhantomU28retermROW Phan to Re | 1,101 | 267 |
| 227 | Electric Transmission | Cooley | RE | A.0001316.001 | TUCO S. 230/115 Xfmr Upgrade | 1,080 | 262 |
| 228 | Electric Transmission | Cooley | LI | A.0001079.010 | U22 FRFD QUIN 115kV Line | 1,009 | 245 |
| 229 | Electric Transmission | Cooley | SR | A.0000499.011 | SPS ELR 115kV NM 2016 | 838 | 203 |
| 230 | Electric Transmission | Cooley | SR | A.0000640.035 | Spearman Int Breaker 1H08 Replaceme | 816 | 198 |
| 231 | Electric Transmission | Cooley | RE | A.0000646.020 | Perryton South Sub Removal | 785 | 190 |
| 232 | Electric Transmission | Cooley | OT | A.0001390.001 | Z08 Line CVEC Mobile Connect TOIF | 476 | 115 |
| 233 | Electric Transmission | Cooley | SR | A.0000220.026 | SPS 2015 OK SE Sub | 390 | 94 |
| 234 | Electric Transmission | Cooley | LI | A.0001079.009 | U21 MURP QUIN 115kV Line | 369 | 89 |
| 235 | Electric Transmission | Cooley | RE | A.0000846.001 | Denver City 115 kV Breaker Add | 321 | 78 |
| 236 | Electric Transmission | Cooley | RE | A.0001050.003 | Upgr Etter Rural 115kV (V63) Term t | 275 | 67 |
| 237 | Electric Transmission | Cooley | LI | A.0000553.001 | Diamondback Lyntegar TerminalS | 261 | 63 |
| 238 | Electric Transmission | Cooley | SR | A.0000996.004 | SPS SPIRe | 255 | 62 |
| 239 | Electric Transmission | Cooley | RE | A.0000290.006 | Seven Rivers Intg, Upgrade Eddy 230 | 251 | 61 |
| 240 | Electric Transmission | Cooley | SR | A.0000499.026 | Z50.1 Retire | 162 | 39 |
| 241 | Electric Transmission | Cooley | RE | A.0000463.015 | Market St.-South Portales ROW | 144 | 35 |
| 242 | Electric Transmission | Cooley | SR | A.0001273.016 | Tolk Ground Grid Testing | 96 | 23 |
| 243 | Electric Transmission | Cooley | GI | A.0000094.001 | Noble Substation 345kV | 84 | 20 |
| 244 | Electric Transmission | Cooley | SR | A.0000640.020 | Texas Co Rpl Breakers 800, 804 | 70 | 17 |
| 245 | Electric Transmission | Cooley | SR | A.0000514.008 | Denver City Sw W932/982/991/992 | 29 | 7 |
| 246 | Electric Transmission | Cooley | RE | A.0000866.027 | V13 Tap to W Littlefield ROW | (1) | (0) |
| 247 | Electric Transmission | Cooley | RE | A.0001283.004 | Lea Plains Metering | (130) | (31) |
| 248 | Electric Transmission | Cooley | GI | A.0000768.001 | GEN-2011-025 Fiber Wind Blanco | (195) | (47) |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) |
|---|---|---|---|---|---|---|---|
| **Line No.** | **Asset Class** | **Witness** | **Project Category** | **WBS Level 2 Number** | **WBS Level 2 Project Description** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail** |
| 249 | Electric Transmission | Cooley | SR | A.0000401.039 | Wipp Cap Bank Volt Diff NM | (222) | (54) |
| 250 | Electric Transmission | Cooley | RE | A.0000513.004 | Denver City Breaker W970 Replacemen | (253) | (61) |
| 251 | Electric Transmission | Cooley | SR | A.0000153.006 | V02 Switch 2915 Replacement | (276) | (67) |
| 252 | Electric Transmission | Cooley | RE | A.0000866.001 | Bailey County-New Amherst 115k | (454) | (110) |
| 253 | Electric Transmission | Cooley | RE | A.0000481.006 | K-93 Reterm In, Line | (570) | (138) |
| 254 | Electric Transmission | Cooley | SR | A.0001067.004 | Lubbock South K64 Relay Upgrade | (714) | (173) |
| 255 | Electric Transmission | Cooley | LI | A.0001079.006 | Murphy Substation Relay Replacement | (760) | (184) |
| 256 | Electric Transmission | Cooley | RE | A.0001272.001 | Cargill 14.4 Mvar Cap Bank | (887) | (215) |
| 257 | Electric Transmission | Cooley | RE | A.0001300.009 | Reterm 115KV Roswell City | (1,131) | (274) |
| 258 | Electric Transmission | Cooley | LI | A.0001008.006 | BRU Relay Upgrade Sub | (1,168) | (283) |
| 259 | Electric Transmission | Cooley | RE | A.0000424.163 | N Loving Sub Kiowa/C Draw Term | (1,312) | (318) |
| 260 | Electric Transmission | Cooley | SR | A.0000303.047 | SPS S&E 115kV Line OK | (1,875) | (455) |
| 261 | Electric Transmission | Cooley | RE | A.0001300.025 | Wreckout Rebuild Z09 Dble Ckt | (1,883) | (457) |
| 262 | Electric Transmission | Cooley | RE | A.0000424.068 | L Ridge Sub 115kV Conv/S Brush | (1,963) | (476) |
| 263 | Electric Transmission | Cooley | RE | A.0000481.010 | Yoakum Co Intg, K-93 Terminal Upgra | (2,429) | (589) |
| 264 | Electric Transmission | Cooley | RE | A.0000616.002 | 115kV Line Tap to Soncy Line | (2,820) | (684) |
| 265 | Electric Transmission | Cooley | RE | A.0000489.003 | Install Capacitor Bank at Kiser Sub | (3,326) | (806) |
| 266 | Electric Transmission | Cooley | RE | A.0001041.006 | T71 Terminal upgrade Carlisle | (3,473) | (842) |
| 267 | Electric Transmission | Cooley | LI | A.0001076.002 | Sendero Install TOIF | (3,532) | (856) |
| 268 | Electric Transmission | Cooley | RE | A.0000482.002 | Potter Co, K32 Terminal Upgrade to | (3,873) | (939) |
| 269 | Electric Transmission | Cooley | RE | A.0001319.011 | Deaf Smith W40 Term Upgr | (4,185) | (1,015) |
| 270 | Electric Transmission | Cooley | RE | A.0000290.004 | K38 Retermination, Eddy Co Sub | (4,716) | (1,143) |
| 271 | Electric Transmission | Cooley | RE | A.0001300.022 | Relay Upgr Roswell City Rosw Intg | (4,919) | (1,193) |
| 272 | Electric Transmission | Cooley | RE | A.0001300.014 | Wreckout Rebuild 115KV LineT24 | (5,589) | (1,355) |
| 273 | Electric Transmission | Cooley | RE | A.0001326.001 | Yoakum 230/115 Xfmr 1 Upgrade | (6,708) | (1,626) |
| 274 | Electric Transmission | Cooley | SR | A.0000640.023 | AMOCO Breaker Rplmnt | (7,090) | (1,719) |
| 275 | Electric Transmission | Cooley | RE | A.0000424.144 | OPIE Potash-Livingston Ridge | (7,669) | (1,859) |
| 276 | Electric Transmission | Cooley | SR | A.0000287.035 | Potash 4920 Breaker Rplmnt | (7,918) | (1,920) |
| 277 | Electric Transmission | Cooley | RE | A.0000424.040 | Kiowa 345kV Sub H Term/Reactor | (8,046) | (1,951) |
| 278 | Electric Transmission | Cooley | SR | A.0000401.049 | Seven Rivers BPRO Upgrade | (8,193) | (1,986) |
| 279 | Electric Transmission | Cooley | RE | A.0000424.265 | K23 Structure Raise | (8,679) | (2,104) |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020**

| Line No. | (A) Asset Class | (B) Witness | (C) Project Category | (D) WBS Level 2 Number | (E) WBS Level 2 Project Description | (F) Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company | (G) Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail |
|---|---|---|---|---|---|---|---|
| 280 | Electric Transmission | Cooley | RE | A.0001283.001 | Lea Co. Plains Sw. Cap Bank | (8,820) | (2,138) |
| 281 | Electric Transmission | Cooley | OT | A.0001403.001 | Y 92 Replace Stub Pole | (10,654) | (2,583) |
| 282 | Electric Transmission | Cooley | LI | A.0000175.003 | Chevron S Eddy Fields 115kV TOIF | (14,557) | (3,529) |
| 283 | Electric Transmission | Cooley | RE | A.0000916.010 | Plant X 230kV LRU to Deaf Smith | (19,932) | (4,832) |
| 284 | Electric Transmission | Cooley | RE | A.0000979.003 | Yoakum-Shell Reterm Tran Porti | (20,789) | (5,040) |
| 285 | Electric Transmission | Cooley | RE | A.0000979.002 | Denver City -Shell Reterm Tran | (22,908) | (5,554) |
| 286 | Electric Transmission | Cooley | SR | A.0001273.015 | Deaf Smith Breaker 2K20 Replacement | (22,959) | (5,566) |
| 287 | Electric Transmission | Cooley | RE | A.0000463.011 | Kilgore-South Portales ROW | (23,342) | (5,659) |
| 288 | Electric Transmission | Cooley | RE | A.0000424.070 | Potash Sub Rly Mods Livingston | (23,497) | (5,697) |
| 289 | Electric Transmission | Cooley | GI | A.0000736.002 | Needmore Substation | (23,614) | (5,725) |
| 290 | Electric Transmission | Cooley | SR | A.0000589.011 | Roswell Int 115kV Buss Diff | (24,837) | (6,021) |
| 291 | Electric Transmission | Cooley | RE | A.0000481.008 | Denver City Sub, V-80 Terminal Upgr | (25,002) | (6,061) |
| 292 | Electric Transmission | Cooley | RE | A.0000673.025 | TX/NM Border-Hobbs 345kV Line_ | (28,305) | (6,862) |
| 293 | Electric Transmission | Cooley | RE | A.0000481.004 | V-80 Reterm In, Line | (32,165) | (7,798) |
| 294 | Electric Transmission | Cooley | RE | A.0000194.005 | Cochran Z26 Terminal | (34,959) | (8,475) |
| 295 | Electric Transmission | Cooley | TI | A.0000974.012 | Optima Land | (35,120) | (8,514) |
| 296 | Electric Transmission | Cooley | RE | A.0001325.011 | K62 Line crossing Upgrade | (37,942) | (9,199) |
| 297 | Electric Transmission | Cooley | RE | A.0000979.001 | 115Line Mustang-Shell Trans Po | (40,912) | (9,919) |
| 298 | Electric Transmission | Cooley | OT | A.0000886.008 | Asset Sale to Oncor | (41,883) | (10,154) |
| 299 | Electric Transmission | Cooley | RE | A.0000481.009 | Hobbs Generating Sub, K-93 Terminal | (44,467) | (10,780) |
| 300 | Electric Transmission | Cooley | RE | A.0000658.001 | Yoakum | (48,109) | (11,663) |
| 301 | Electric Transmission | Cooley | RE | A.0000296.006 | New Centre St 115kV Sub | (54,330) | (13,171) |
| 302 | Electric Transmission | Cooley | LI | A.0001126.002 | Inst 3 1 Way 115kV Switch | (61,667) | (14,950) |
| 303 | Electric Transmission | Cooley | RE | A.0000866.033 | Lamb County Land | (62,143) | (15,066) |
| 304 | Electric Transmission | Cooley | GI | A.0000902.001 | Hale Co Wind 230kV Terminal at | (64,371) | (15,606) |
| 305 | Electric Transmission | Cooley | RE | A.0000194.008 | Cochran Whiteface Z26 Rebuild | (77,253) | (18,729) |
| 306 | Electric Transmission | Cooley | GI | A.0000736.005 | Tolk Needmore Retermination | (81,847) | (19,843) |
| 307 | Electric Transmission | Cooley | SR | A.0000303.043 | SPS S&E 345kV Line NM | (82,273) | (19,946) |
| 308 | Electric Transmission | Cooley | RE | A.0000481.007 | K-93 Reterm Out, Line | (85,467) | (20,720) |
| 309 | Electric Transmission | Cooley | OT | A.0001106.001 | WIPP W38 Structure Relocate | (91,591) | (22,205) |
| 310 | Electric Transmission | Cooley | SR | A.0000469.015 | SPS Major Line Refurb 69kV TX | (118,900) | (28,826) |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) |
|---|---|---|---|---|---|---|---|
| **Line No.** | **Asset Class** | **Witness** | **Project Category** | **WBS Level 2 Number** | **WBS Level 2 Project Description** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail** |
| 311 | Electric Transmission | Cooley | LI | A.0001221.001 | INST 3 1 Way SW KEMP | (120,341) | (29,175) |
| 312 | Electric Transmission | Cooley | SR | A.0000640.008 | Tolk-Repl Bkrs TK12TK39TK43TK5 | (129,426) | (31,377) |
| 313 | Electric Transmission | Cooley | RE | A.0002049.001 | Potash Sub 115 kV Terminal Sub | (140,208) | (33,991) |
| 314 | Electric Transmission | Cooley | RE | A.0001310.002 | Reterm 345KV Line Old J7 | (143,802) | (34,863) |
| 315 | Electric Transmission | Cooley | RE | A.0001325.006 | W77-T75Recond ArrowheadRandall | (151,006) | (36,609) |
| 316 | Electric Transmission | Cooley | SR | A.0000499.020 | Z05 ELR Maintenance | (193,476) | (46,905) |
| 317 | Electric Transmission | Cooley | GI | A.0000350.008 | Lea County Plains 115kV Sub Term Up | (205,283) | (49,768) |
| 318 | Electric Transmission | Cooley | GI | A.0000105.005 | Tolk Terminal Upgrades | (235,662) | (57,133) |
| 319 | Electric Transmission | Cooley | GI | A.0000768.002 | Crosby-Blanco Retermination-11 | (261,400) | (63,373) |
| 320 | Electric Transmission | Cooley | GI | A.0000350.006 | Lost Draw to Lea Co Plains Retermin | (273,592) | (66,328) |
| 321 | Electric Transmission | Cooley | GI | A.0000350.005 | Lost Draw to Cochran Retermination | (297,876) | (72,216) |
| 322 | Electric Transmission | Cooley | SR | A.0000798.012 | Cole Rpl Breaker 0845 | (387,136) | (93,855) |
| 323 | Electric Transmission | Cooley | RE | A.0001326.003 | Yoakum 230/115 Transformer 2 Upgrad | (395,023) | (95,767) |
| 324 | Electric Transmission | Cooley | LI | A.0001061.008 | Purnell Sub | (871,832) | (211,363) |
| 325 | Electric Transmission | Cooley | LI | A.0001215.001 | Inst W39 Switch Poker Cowboy Temp | (982,424) | (238,174) |
| 326 | Electric Transmission | Cooley | RE | A.0000424.137 | Monument-Byrd ROW | (1,005,341) | (243,730) |
| 327 | Electric Transmission | Cooley | GI | A.0000105.007 | Plant X Terminal Upgrades TX | (1,115,579) | (270,456) |
| 328 | Electric Transmission | Cooley | GI | A.0000105.008 | K45 Reconductor Transmission Portio | (3,986,673) | (966,511) |
| 329 | **Electric Transmission Total** | | | | | **$ 240,700,716** | **$ 58,354,370** |
| 330 | Electric General | Cooley | OT | A.0001118.006 | Lock and Key System TX | $ 1,418,859 | $ 426,543 |
| 331 | Electric General | Cooley | OT | A.0006056.224 | Fleet New Unit El Trans TX | 1,103,388 | 331,704 |
| 332 | Electric General | Cooley | LI | A.0001061.003 | Purnell 115kV Sub | 845,034 | 254,037 |
| 333 | Electric General | Cooley | OT | A.0000795.003 | SPS Sub Comm Network Group 1 C | 770,999 | 231,781 |
| 334 | Electric General | Cooley | RE | A.0000842.001 | Plant X BFR RTU | 649,400 | 195,225 |
| 335 | Electric General | Cooley | OT | A.0000588.031 | Eddy County RTU | 554,773 | 166,778 |
| 336 | Electric General | Cooley | OT | A.0001118.007 | Lock and Key System NM | 531,727 | 159,850 |
| 337 | Electric General | Cooley | OT | A.0006059.063 | SPS Sub Comm Tool Blanket | 397,452 | 119,484 |
| 338 | Electric General | Cooley | RE | A.0000673.032 | Yoakum 345kV Sub Comms_UID 504 | 336,259 | 101,087 |
| 339 | Electric General | Cooley | SR | A.0001273.014 | Coulter RTU Replacement | 332,015 | 99,812 |
| 340 | Electric General | Cooley | OT | A.0000556.020 | Tuco A&B DFR | 330,059 | 99,223 |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) |
|---|---|---|---|---|---|---|---|
| **Line No.** | **Asset Class** | **Witness** | **Project Category** | **WBS Level 2 Number** | **WBS Level 2 Project Description** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail** |
| 341 | Electric General | Cooley | OT | A.0000556.022 | Eddy County 115kV DFR NM | 304,721 | 91,606 |
| 342 | Electric General | Cooley | OT | A.0000556.017 | Jones #1 DFR | 286,639 | 86,170 |
| 343 | Electric General | Cooley | OT | A.0006059.432 | Tool Blanket TX Line | 262,746 | 78,988 |
| 344 | Electric General | Cooley | OT | A.0006059.100 | Tools Blanket TX Subs | 250,919 | 75,432 |
| 345 | Electric General | Cooley | SR | A.0000220.032 | Taylor Switching Station RTU Comm N | 233,511 | 70,199 |
| 346 | Electric General | Cooley | OT | A.0000588.033 | Seven Rivers RTU Rplcmnt | 114,623 | 34,459 |
| 347 | Electric General | Cooley | OT | A.0006059.088 | SPS Sys Protect Comm Eng Testing Eq | 111,981 | 33,664 |
| 348 | Electric General | Cooley | OT | A.0006056.223 | Fleet New Units  El Trans NM | 108,650 | 32,663 |
| 349 | Electric General | Cooley | OT | A.0006059.168 | SPS Transmission Tool Blanket | 107,957 | 32,454 |
| 350 | Electric General | Cooley | OT | A.0000588.032 | Cunningham Station RTU Rplcmnt | 98,316 | 29,556 |
| 351 | Electric General | Cooley | OT | A.0006059.258 | SPS Training Center Equipment | 85,776 | 25,786 |
| 352 | Electric General | Cooley | OT | A.0006059.246 | Tools Training Center SPS | 83,567 | 25,122 |
| 353 | Electric General | Cooley | OT | A.0006059.436 | SPS Ops Engineering Tools | 83,387 | 25,068 |
| 354 | Electric General | Cooley | OT | A.0006059.434 | SPS Training Center Tools | 62,186 | 18,695 |
| 355 | Electric General | Cooley | RE | A.0000194.006 | Cochran RTU, Comm | 56,301 | 16,925 |
| 356 | Electric General | Cooley | SR | A.0000514.007 | Carlsbad Comm Replacement | 50,586 | 15,207 |
| 357 | Electric General | Cooley | SR | A.0000153.003 | SPS Trans Switch Comm | 49,164 | 14,780 |
| 358 | Electric General | Cooley | OT | A.0001218.008 | Bowers Com Checkpoint FW TX | 48,607 | 14,612 |
| 359 | Electric General | Cooley | RE | A.0000424.094 | Road Runner 345kV Sub Comms_UI | 41,475 | 12,468 |
| 360 | Electric General | Cooley | RE | A.0000979.009 | Shell Sub Comm Sub Portion S | 31,441 | 9,452 |
| 361 | Electric General | Cooley | OT | A.0001063.003 | TX Synchrophasors | 30,396 | 9,138 |
| 362 | Electric General | Cooley | SR | A.0000401.051 | East Plt 2K50 Relay Rplmnt Comm | 29,482 | 8,863 |
| 363 | Electric General | Cooley | OT | A.0001218.003 | Pecos Com Checkpoint FW NM | 22,999 | 6,914 |
| 364 | Electric General | Cooley | OT | A.0001218.005 | Carlsbad Intg Com Checkpoint FW NM | 22,834 | 6,865 |
| 365 | Electric General | Cooley | OT | A.0001218.019 | Happy Interchange Comm Checkpoint F | 22,294 | 6,702 |
| 366 | Electric General | Cooley | OT | A.0001218.010 | Cox Com Checkpoint FW TX | 21,583 | 6,488 |
| 367 | Electric General | Cooley | OT | A.0001218.012 | Hastings Com Checkpoint FW TX | 19,696 | 5,921 |
| 368 | Electric General | Cooley | OT | A.0001218.013 | Hereford Com Checkpoint FW TX | 19,141 | 5,754 |
| 369 | Electric General | Cooley | OT | A.0001063.002 | NM Synchrophasors | 18,760 | 5,640 |
| 370 | Electric General | Cooley | OT | A.0001218.018 | Lamton Comm Checkpoint FW TX | 17,975 | 5,404 |
| 371 | Electric General | Cooley | RE | A.0000842.005 | Plant X Hale Co Relaying Comm | 16,891 | 5,078 |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) |
|---|---|---|---|---|---|---|---|
| **Line No.** | **Asset Class** | **Witness** | **Project Category** | **WBS Level 2 Number** | **WBS Level 2 Project Description** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail** |
| 372 | Electric General | Cooley | OT | A.0000588.011 | Moore Co 115kV RTU Rplmnt | 15,662 | 4,708 |
| 373 | Electric General | Cooley | OT | A.0006059.509 | Cell Phone Boosters SPS | 14,527 | 4,367 |
| 374 | Electric General | Cooley | OT | A.0001218.001 | Red Bluff Com Checkpoint Firewall N | 14,169 | 4,260 |
| 375 | Electric General | Cooley | OT | A.0001118.009 | Lock and Key System OK | 14,098 | 4,238 |
| 376 | Electric General | Cooley | SR | A.0000401.053 | Blackhawk 1H70 Relay Upg COMM | 12,945 | 3,892 |
| 377 | Electric General | Cooley | OT | A.0001218.004 | Maddox Com Checkpoint FW NM | 12,917 | 3,883 |
| 378 | Electric General | Cooley | RE | A.0000916.008 | Bushland Comm | 11,592 | 3,485 |
| 379 | Electric General | Cooley | OT | A.0001218.002 | Pleasant Hill Com Checkpoint FW NM | 9,360 | 2,814 |
| 380 | Electric General | Cooley | RE | A.0000194.007 | Cochran Comm Equiup | 8,632 | 2,595 |
| 381 | Electric General | Cooley | OT | A.0001218.016 | Muleshoe Valley Com Checkpoint FW T | 7,901 | 2,375 |
| 382 | Electric General | Cooley | LI | A.0001008.004 | Inst 230kV Sw Station Comm | 7,798 | 2,344 |
| 383 | Electric General | Cooley | OT | A.0000710.008 | SPS Physical Security Comm | 6,971 | 2,096 |
| 384 | Electric General | Cooley | OT | A.0001218.014 | Kress Com Checkpoint FW TX | 6,932 | 2,084 |
| 385 | Electric General | Cooley | OT | A.0005014.084 | New Mexico Substation Furnitur | 6,792 | 2,042 |
| 386 | Electric General | Cooley | OT | A.0000710.007 | NM Physical Security Comm | 4,642 | 1,395 |
| 387 | Electric General | Cooley | OT | A.0006059.506 | SPS Training Center Equipmen | 4,435 | 1,333 |
| 388 | Electric General | Cooley | SR | A.0000153.016 | U12 SCHLD REPL CTRL BRD SW 4J194 | 3,519 | 1,058 |
| 389 | Electric General | Cooley | OT | A.0005014.109 | Gen Plt Ofc Furn TX | 3,465 | 1,042 |
| 390 | Electric General | Cooley | SR | A.0000153.015 | T131 SCHLD MOD REPL SOLAR AT STR 11 | 3,447 | 1,036 |
| 391 | Electric General | Cooley | RE | A.0000481.003 | New Ink Basin 230/115kV Substation | 2,701 | 812 |
| 392 | Electric General | Cooley | OT | A.0001063.004 | Yoakum Synchrophasers | 1,535 | 461 |
| 393 | Electric General | Cooley | SR | A.0000153.018 | Z052 SCHLD REPL BATT SW 4794 STR 2 | 842 | 253 |
| 394 | Electric General | Cooley | LI | A.0001079.008 | Quincy Substation Communication | 456 | 137 |
| 395 | Electric General | Cooley | RE | A.0001300.020 | Roswell Intg New 115kV Terminal Com | 290 | 87 |
| 396 | Electric General | Cooley | SR | A.0001067.003 | Lubbock East Communication | 179 | 54 |
| 397 | Electric General | Cooley | RE | A.0000574.007 | Coulter Relay Mod, Sub, COMM | 102 | 31 |
| 398 | Electric General | Cooley | LI | A.0001079.007 | Frankford Substation Communication | 31 | 9 |
| 399 | Electric General | Cooley | RE | A.0000424.168 | China Draw 345kV Sub Comms_UID | 23 | 7 |
| 400 | Electric General | Cooley | RE | A.0000781.019 | Outpost Comm | 10 | 3 |
| 401 | Electric General | Cooley | RE | A.0001310.009 | Finney J 25 Terminal UPLC | (22) | (7) |
| 402 | Electric General | Cooley | RE | A.0000658.007 | Seagraves Comm | (471) | (142) |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020**

| Line No. | (A) Asset Class | (B) Witness | (C) Project Category | (D) WBS Level 2 Number | (E) WBS Level 2 Project Description | (F) Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company | (G) Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail |
|---|---|---|---|---|---|---|---|
| 403 | Electric General | Cooley | RE | A.0001310.008 | Walkemeyer 345/115 Sub Comm | (496) | (149) |
| 404 | Electric General | Cooley | OT | A.0001218.017 | Swisher Com Checkpoint FW TX | (697) | (209) |
| 405 | Electric General | Cooley | RE | A.0000296.009 | NE Hereford Comm | (1,474) | (443) |
| 406 | Electric General | Cooley | RE | A.0000540.017 | Atoka Comm Sub Portion Comm | (3,502) | (1,053) |
| 407 | Electric General | Cooley | OT | A.0001218.006 | Atoka Com Checkpoint FW NM | (3,751) | (1,128) |
| 408 | Electric General | Cooley | RE | A.0000424.222 | Quahada Communication | (5,002) | (1,504) |
| 409 | Electric General | Cooley | GI | A.0000706.002 | Hitchland Firewheel Comm | (5,067) | (1,523) |
| 410 | Electric General | Cooley | OT | A.0000948.004 | TX Frame Relay Comm | (5,765) | (1,733) |
| 411 | Electric General | Cooley | OT | A.0000948.003 | NM Frame Relay Comm | (12,809) | (3,851) |
| 412 | Electric General | Cooley | RE | A.0000979.006 | Mustang Communications Sub Por | (17,661) | (5,309) |
| 413 | Electric General | Cooley | RE | A.0000290.008 | Cunningham Intg Upgr Eddy Term Comm | (59,828) | (17,986) |
| 414 | Electric General | Cooley | RE | A.0000290.009 | Seven Rivers Upgr Eddy Term COMM | (112,313) | (33,764) |
| 415 | Electric General | Cooley | GI | A.0000902.002 | TUCO RTU Addition Comm | (115,625) | (34,759) |
| 416 | Electric General | Cooley | GI | A.0000350.004 | Lost Draw Comm | (151,366) | (45,504) |
| 417 | **Electric General Total** | | | | | **$ 9,664,693** | **$ 2,905,435** |
| 418 | **Grand Total** | | | | | **$ 250,365,409** | **$ 61,259,805** |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020 - Summary of Projects**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) | (H) | (I) |
|---|---|---|---|---|---|---|---|---|---|
| **Line No.** | **Asset Class** | **WBS Level 1 Project Group Name** | **WBS Level 2 Number** | **WBS Level 2 Description** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail** | **WBS Level 1 Project Group Description** | **Cost Recovery** | **Project Category** |
| 1 | Electric Transmission | 345 115kV 448MVA Xfmr spare Sub | A.0001267.001 | 345/115kV 448MVA XfmrspareSub | 212,904 | 51,616 | | | |
| 2 | Electric Transmission | **345 115kV 448MVA Xfmr spare Sub Total** | | | **212,904** | **51,616** | This project purchased a spare 345/115-kV, 448 MVA transformer to provide a reserve unit in the event of a failure of one of the numerous similar transformers in service in the SPS service area. | SPS Zonal | SR |
| 3 | Electric Transmission | Agreement Lighthouse Bill of Sale | A.0001003.001 | Lighthouse Switch Install Transmiss | 17,139 | 4,155 | | | |
| 4 | Electric Transmission | **Agreement Lighthouse Bill of Sale Total** | | | **17,139** | **4,155** | This project installed a single transmission line switch on line Y-96 to provide an isolation point between SPS and Lighthouse Electric Cooperative's South Plains Substation per an agreement with Lighthouse Electric as a condition for SPS to purchase a 69-kV line segment from Lighthouse Electric. | SPS Zonal | OT |
| 5 | Electric Transmission | Agreement Rogers Elementary | A.0001403.001 | Y 92 Replace Stub Pole | (10,654) | (2,583) | | | |
| 6 | Electric Transmission | **Agreement Rogers Elementary Total** | | | **(10,654)** | **(2,583)** | This project replaced a transmission structure at Rogers Elementary to accommodate a new parking lot arrangement at the school. The school district reimbursed SPS 100% of the cost of this work. | Customer Funded | OT |
| 7 | Electric Transmission | Amarillo West Upgrade | A.0000781.013 | Bushland Relay | 595,157 | 144,287 | | | |
| 8 | Electric Transmission | Amarillo West Upgrade | A.0000781.014 | Coulter Relay | 127,528 | 30,917 | | | |
| 9 | Electric Transmission | Amarillo West Upgrade | A.0000781.015 | Modify V44 at Colter for SL335 | 1,116 | 270 | | | |
| 10 | Electric Transmission | **Amarillo West Upgrade Total** | | | **723,801** | **175,475** | This project provided for new infrastructure to provide service for Amarillo's expansion to the west. | SPS Zonal | RE |
| 11 | Electric Transmission | Artesia Country Club 115kV conversion | A.0000126.005 | Artesia Cty Club Line | 1,929,959 | 467,890 | | | |
| 12 | Electric Transmission | **Artesia Country Club 115kV conversion Total** | | | **1,929,959** | **467,890** | This project tapped the W92 line and built approximately three miles of new 115-kV line to the Artesia Country Club Substation. It also converted two SPS distribution substations from 69-kV to 115-kV operation. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 13 | Electric Transmission | Atoka-Eagle Creek | A.0000540.001 | Atoka-Eagle Creek 115 kV Line | 18,749 | 4,545 | | | |
| 14 | Electric Transmission | **Atoka-Eagle Creek Total** | | | **18,749** | **4,545** | This project constructed a 115-kV transmission line between the Atoka and Eagle Creek Substations near Artesia, New Mexico. The project is needed to address low voltages in the area. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 15 | Electric Transmission | Bailey Cty-New Amherst-Lamb Cty | A.0000866.001 | Bailey County-New Amherst 115k | (454) | (110) | | | |
| 16 | Electric Transmission | Bailey Cty-New Amherst-Lamb Cty | A.0000866.027 | V13 Tap to W Littlefield ROW | (1) | (0) | | | |
| 17 | Electric Transmission | Bailey Cty-New Amherst-Lamb Cty | A.0000866.033 | Lamb County Land | (62,143) | (15,066) | | | |
| 18 | Electric Transmission | **Bailey Cty-New Amherst-Lamb Cty Total** | | | **(62,598)** | **(15,176)** | This project was initially approved by SPP to mitigate system issues caused by a forecasted increase in electric cooperative load. SPP issued SPS an NTC for this project. The load did not materialize and SPS requested that SPP re-evaluate the need for this project. SPP re-evaluated the project and agreed that it was no longer needed. This project has been cancelled and the charges are in the process of being zeroed out. | SPP Base Plan | RE |
| 19 | Electric Transmission | Cardinal Teague Recond 115kV Line | A.0001271.004 | Cardinal-Teague Recond 115kV | 15,349 | 3,721 | | | |
| 20 | Electric Transmission | **Cardinal Teague Recond 115kV Line Total** | | | **15,349** | **3,721** | This project installed taller transmission line structures where identified to provide the necessary ground clearance to allow the existing conductors to be loaded to their full amperage rating. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 21 | Electric Transmission | Cargill 14.4 Mvar Cap Bank | A.0001272.001 | Cargill 14.4 Mvar Cap Bank | (887) | (215) | | | |
| 22 | Electric Transmission | **Cargill 14.4 Mvar Cap Bank Total** | | | **(887)** | **(215)** | This project installed a 14.4 MVAr capacitor bank on the 115-kV bus at Cargill Substation. The new capacitor bank will provide voltage support in the south central part of the Texas panhandle and the eastern part of New Mexico. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 23 | Electric Transmission | Carlisle to Wolfforth | A.0000511.004 | Carlisle to Wofforth Wolfforth | 1,463 | 355 | | | |
| 24 | Electric Transmission | Carlisle to Wolfforth | A.0000511.020 | Carl-Wolf Lubbock S Relay at | 3,945 | 956 | | | |
| 25 | Electric Transmission | Carlisle to Wolfforth | A.0000511.021 | Carl-Wolf Sundown Relay at Wo | 40,468 | 9,811 | | | |
| 26 | Electric Transmission | Carlisle to Wolfforth | A.0000511.026 | K39 LPL Line Reterm at Carlisle | 1,496 | 363 | | | |
| 27 | Electric Transmission | **Carlisle to Wolfforth Total** | | | **47,372** | **11,485** | This project constructed a new 230-kV line between the Carlisle and Wolfforth substations and substation line terminals to accommodate the new transmission line. This project was needed for reliability and load growth in the surrounding area. SPP issued SPS an NTC for the project. | SPP Base Plan | RE |
| 28 | Electric Transmission | Chevron South Eddy Fields Load Addition | A.0000175.001 | Install 3 Way Switch Chevron Trans | 6,883 | 1,669 | | | |
| 29 | Electric Transmission | Chevron South Eddy Fields Load Addition | A.0000175.003 | Chevron S Eddy Fields 115kV TOIF | (14,557) | (3,529) | | | |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020 - Summary of Projects**

| Line No. | (A) Asset Class | (B) WBS Level 1 Project Group Name | (C) WBS Level 2 Number | (D) WBS Level 2 Description | (E) Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company | (F) Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail | (G) WBS Level 1 Project Group Description | (H) Cost Recovery | (I) Project Category |
|---|---|---|---|---|---|---|---|---|---|
| 30 | Electric Transmission | **Chevron South Eddy Fields Load Addition Total** | | | **(7,674)** | **(1,860)** | This project installed a three-way 115-kV switch on transmission line W-87 west of China Draw substation to provide a new 115-kV service point for a new substation owned by Chevron. | SPS Zonal | LI |
| 31 | Electric Transmission | Cochran Co - Whiteface 115kv | A.0000194.001 | Cochran 115 Cap Bank | 41,501 | 10,061 | | | |
| 32 | Electric Transmission | Cochran Co - Whiteface 115kv | A.0000194.005 | Cochran Z26 Terminal | (34,959) | (8,475) | | | |
| 33 | Electric Transmission | Cochran Co - Whiteface 115kv | A.0000194.008 | Cochran Whiteface Z26 Rebuild | (77,253) | (18,729) | | | |
| 34 | Electric Transmission | **Cochran Co - Whiteface 115kv Total** | | | **(70,710)** | **(17,143)** | This project reconductored the 4.4 mile segment of the 69-kV transmission line from Cochran County Substation to structure number 55 at Whiteface Tap. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 35 | Electric Transmission | Cochran Plains Line Ratings | A.0001183.002 | Less Terminal Upgrade Sub | 2,520 | 611 | | | |
| 36 | Electric Transmission | **Cochran Plains Line Ratings Total** | | | **2,520** | **611** | This project increased the line and substation terminal ratings of the 115-kV lines U-19 and U-20 between Cochran Co. Interchange and Lea County Plains Switching Station. This project was needed to provide the capacity to accommodate the new 350 MW Wildcat Ranch wind farm generation connected at Lost Draw Switching Station. | Customer Funded | GI |
| 37 | Electric Transmission | Curry Co. Dist. Xfmr Conversion | A.0000860.003 | Curry Co Dist Xfmr Conversion | 8,386 | 2,033 | | | |
| 38 | Electric Transmission | **Curry Co. Dist. Xfmr Conversion Total** | | | **8,386** | **2,033** | This project replaced the existing 69/23-kV distribution transformer with a 115/23-kV distribution transformer. This conversion from 69-kV to 115-kV was needed to prevent the overloading of the 115/69-kV transformers located at Curry Co. Interchange. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 39 | Electric Transmission | CVA Mitigation | A.0000286.005 | Horz Cap and Pin Replacement TX | 240,244 | 58,244 | | | |
| 40 | Electric Transmission | CVA Mitigation | A.0000286.015 | Tuco Replace 69kV Cap and Pin Switc | 1,411 | 342 | | | |
| 41 | Electric Transmission | **CVA Mitigation Total** | | | **241,656** | **58,586** | This project replaced various pieces of equipment that were identified by the Common Vulnerability Assessment (CVA) program. The CVA program identifies specific pieces of equipment that have a history of failing across all of the Xcel Energy transmission systems and works to proactively replace the remaining pieces of equipment still in service before they fail. | SPS Zonal | SR |
| 42 | Electric Transmission | Deaf Smith 230kV Breaker Add | A.0000916.004 | Deaf Smith 230kV Breaker ADD S | 5,972,551 | 1,447,958 | | | |
| 43 | Electric Transmission | Deaf Smith 230kV Breaker Add | A.0000916.010 | Plant X 230kV LRU to Deaf Smith | (19,932) | (4,832) | | | |
| 44 | Electric Transmission | **Deaf Smith 230kV Breaker Add Total** | | | **5,952,619** | **1,443,126** | This project created a ring bus on the 230-kV side of the Deaf Smith Substation. | SPS Zonal | RE |
| 45 | Electric Transmission | Denver City In-Line 115 kV Bkr | A.0000846.001 | Denver City 115 kV Breaker Add | 321 | 78 | | | |
| 46 | Electric Transmission | **Denver City In-Line 115 kV Bkr Total** | | | **321** | **78** | This project installed breaker failure relays on all 115-kV breakers at Denver City Interchange. | SPS Zonal | RE |
| 47 | Electric Transmission | Diamondback Lyntegar Terminal | A.0000553.001 | Diamondback Lyntegar TerminalS | 261 | 63 | | | |
| 48 | Electric Transmission | **Diamondback Lyntegar Terminal Total** | | | **261** | **63** | This project connected a new line built by Lyntegar Rural Electric Cooperative to the new Diamondback Substation for service to their customers in the southeast part of the SPS transmission system. | Customer Funded | LI |
| 49 | Electric Transmission | Eddy County Dbl Bus Dbl Brker 230kV | A.0000290.001 | Eddy County Dbl Bus Dbl Brkr 230kV | 18,557,112 | 4,498,900 | | | |
| 50 | Electric Transmission | Eddy County Dbl Bus Dbl Brker 230kV | A.0000290.003 | K23 Retermination, Eddy Co Sub | 18,578 | 4,504 | | | |
| 51 | Electric Transmission | Eddy County Dbl Bus Dbl Brker 230kV | A.0000290.004 | K38 Retermination, Eddy Co Sub | (4,716) | (1,143) | | | |
| 52 | Electric Transmission | Eddy County Dbl Bus Dbl Brker 230kV | A.0000290.005 | Cunningham Intg, Upgrade Eddy 230kV | 105,304 | 25,529 | | | |
| 53 | Electric Transmission | Eddy County Dbl Bus Dbl Brker 230kV | A.0000290.006 | Seven Rivers Intg, Upgrade Eddy 230 | 251 | 61 | | | |
| 54 | Electric Transmission | Eddy County Dbl Bus Dbl Brker 230kV | A.0000290.010 | Eddy County 4K40 ABB Breaker | 679,908 | 164,834 | | | |
| 55 | Electric Transmission | **Eddy County Dbl Bus Dbl Brker 230kV Total** | | | **19,356,437** | **4,692,685** | This project reconfigured the existing Eddy County Interchange 230-kV bus from a main and transfer bus design to a double bus-double breaker arrangement. This project was required to meet long-term firm transmission service requests in the SPP Aggregate Facility Study SPP-2013-AG3-AFS-6. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 56 | Electric Transmission | ELR - Breakers - SPS | A.0000640.008 | Tolk-Repl Bkrs TK12TK39TK43TK5 | (129,426) | (31,377) | | | |
| 57 | Electric Transmission | ELR - Breakers - SPS | A.0000640.020 | Texas Co Rpl Breakers 800, 804 | 70 | 17 | | | |
| 58 | Electric Transmission | ELR - Breakers - SPS | A.0000640.021 | W07 Tx Cty SS Fr DCB to DCUB Rpl SE | 5,955 | 1,444 | | | |
| 59 | Electric Transmission | ELR - Breakers - SPS | A.0000640.023 | AMOCO Breaker Rplmnt | (7,090) | (1,719) | | | |
| 60 | Electric Transmission | ELR - Breakers - SPS | A.0000640.033 | Eddy Co 4K80 Bkr Replace | 202,200 | 49,020 | | | |
| 61 | Electric Transmission | ELR - Breakers - SPS | A.0000640.035 | Spearman Int Breaker 1H08 Replaceme | 816 | 198 | | | |
| 62 | Electric Transmission | ELR - Breakers - SPS | A.0000640.039 | Sundown Bkr/Sw | 2,832,177 | 686,620 | | | |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020 - Summary of Projects**

| Line No. | (A) Asset Class | (B) WBS Level 1 Project Group Name | (C) WBS Level 2 Number | (D) WBS Level 2 Description | (E) Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company | (F) Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail | (G) WBS Level 1 Project Group Description | (H) Cost Recovery | (I) Project Category |
|---|---|---|---|---|---|---|---|---|---|
| 63 | Electric Transmission | **ELR - Breakers - SPS Total** | | | **2,904,702** | **704,203** | The term "ELR" stands for End of Life Replacement. This project replaced circuit breakers that had reached the end of their useful life. This work was done at several substations as part of a multi-year program to replace breakers that are obsolete, for which parts are no longer available, or require significant operations and maintenance spend to keep them in service. | SPS Zonal | SR |
| 64 | Electric Transmission | ELR - Relay - SPS | A.0000401.022 | Blackhawk 115kV T48 (1H70)Sub | 16,464 | 3,991 | | | |
| 65 | Electric Transmission | ELR - Relay - SPS | A.0000401.030 | Harrington 230kV K44 (FK40)Sub | 486,495 | 117,944 | | | |
| 66 | Electric Transmission | ELR - Relay - SPS | A.0000401.032 | Hutchinson 115kV T48 (1936)Sub | 9,825 | 2,382 | | | |
| 67 | Electric Transmission | ELR - Relay - SPS | A.0000401.033 | Potash Junction 115kV 4920 | 46,018 | 11,156 | | | |
| 68 | Electric Transmission | ELR - Relay - SPS | A.0000401.039 | Wipp Cap Bank Volt Diff NM | (222) | (54) | | | |
| 69 | Electric Transmission | ELR - Relay - SPS | A.0000401.047 | Hale Co 3911 Relay Replacement | 33,483 | 8,118 | | | |
| 70 | Electric Transmission | ELR - Relay - SPS | A.0000401.048 | TUCO N912 Relay Replacement | 24,755 | 6,001 | | | |
| 71 | Electric Transmission | ELR - Relay - SPS | A.0000401.049 | Seven Rivers BPRO Upgrade | (8,193) | (1,986) | | | |
| 72 | Electric Transmission | ELR - Relay - SPS | A.0000401.050 | East Plant 2K50 Relay Replacement | 648,070 | 157,115 | | | |
| 73 | Electric Transmission | **ELR - Relay - SPS Total** | | | **1,256,694** | **304,667** | The term "ELR" stands for End of Life Replacement. This project replaced protective relays that had reached the end of their useful life. This work was done at several substations as part of a multi-year program to replace relays that are obsolete, for which parts are no longer available and require significant operations and maintenance spend to keep them in service. | SPS Zonal | SR |
| 74 | Electric Transmission | Facility Upgrade Ancillary Equip | A.0001273.005 | Facil UpgSub Ancillary Eq2016 | 447,447 | 108,477 | | | |
| 75 | Electric Transmission | Facility Upgrade Ancillary Equip | A.0001273.008 | V40 Switches and Jumpers at Carlisl | 9,073 | 2,200 | | | |
| 76 | Electric Transmission | Facility Upgrade Ancillary Equip | A.0001273.015 | Deaf Smith Breaker 2K20 Replacement | (22,959) | (5,566) | | | |
| 77 | Electric Transmission | Facility Upgrade Ancillary Equip | A.0001273.016 | Tolk Ground Grid Testing | 96 | 23 | | | |
| 78 | Electric Transmission | Facility Upgrade Ancillary Equip | A.0001369.001 | Plant X Rpl Brkr Switch WT Sub | 4,743,970 | 1,150,106 | | | |
| 79 | Electric Transmission | **Facility Upgrade Ancillary Equip Total** | | | **5,177,627** | **1,255,240** | This project provided for the replacement of failing switches, jumpers and other ancillary equipment. This work was done at several substations as part of a multi-year program to replace equipment that is obsolete, for which parts are no longer available, or require significant operations and maintenance spend to keep it in service. | SPS Zonal | SR |
| 80 | Electric Transmission | Fault Recorders - SPS | A.0000556.016 | Oasis 230 115kV Fault Recorder | 362,600 | 87,907 | | | |
| 81 | Electric Transmission | **Fault Recorders - SPS Total** | | | **362,600** | **87,907** | This project installed fault recorders for disturbance monitoring at substations. | SPS Zonal | OT |
| 82 | Electric Transmission | GEN 2010-14 Novus Wind IV, 358.8 MW | A.0000537.001 | Novus Wind IV - Hitchland Sub | 2,818 | 683 | | | |
| 83 | Electric Transmission | **GEN 2010-14 Novus Wind IV, 358.8 MW Total** | | | **2,818** | **683** | This project added a 345-kV terminal to the 345-kV bus at Hitchland Interchange to provide an interconnection point for the Novus Wind IV wind farm transmission line. The wind farm has a net capacity of 358.8 MW. | Customer Funded | GI |
| 84 | Electric Transmission | GEN 2012-020 Hale Co Wind, 478MW | A.0000902.001 | Hale Co Wind 230kV Terminal at | (64,371) | (15,606) | | | |
| 85 | Electric Transmission | **GEN 2012-020 Hale Co Wind, 478MW Total** | | | **(64,371)** | **(15,606)** | This project constructed a new 230-kV terminal at TUCO Interchange for the interconnection of the Hale County wind farm. | Customer Funded | GI |
| 86 | Electric Transmission | GEN 2013 027 Blue Cloud Wind | A.0000736.001 | Needmore Substation TOIF | 21,613 | 5,240 | | | |
| 87 | Electric Transmission | GEN 2013 027 Blue Cloud Wind | A.0000736.002 | Needmore Substation | (23,614) | (5,725) | | | |
| 88 | Electric Transmission | GEN 2013 027 Blue Cloud Wind | A.0000736.005 | Tolk Needmore Retermination | (81,847) | (19,843) | | | |
| 89 | Electric Transmission | **GEN 2013 027 Blue Cloud Wind Total** | | | **(83,848)** | **(20,328)** | This project constructed the new 230-kV Needmore Switching Station to accommodate the new wind generation from Blue Cloud Wind. | Customer Funded | GI |
| 90 | Electric Transmission | GEN 2014 040 Orion Wind | A.0001359.001 | Castro Co Terminal Orion Wind | 400,402 | 97,072 | | | |
| 91 | Electric Transmission | **GEN 2014 040 Orion Wind Total** | | | **400,402** | **97,072** | This project added a new 115-kV terminal for a wind farm interconnection. | Customer Funded | GI |
| 92 | Electric Transmission | Gen Upgrade Tolk X Reconductor | A.0000105.001 | R27 Reconductor | 8,400,684 | 2,036,623 | | | |
| 93 | Electric Transmission | Gen Upgrade Tolk X Reconductor | A.0000105.005 | Tolk Terminal Upgrades | (235,662) | (57,133) | | | |
| 94 | Electric Transmission | Gen Upgrade Tolk X Reconductor | A.0000105.007 | Plant X Terminal Upgrades TX | (1,115,579) | (270,456) | | | |
| 95 | Electric Transmission | Gen Upgrade Tolk X Reconductor | A.0000105.008 | K45 Reconductor Transmission Portio | (3,986,673) | (966,511) | | | |
| 96 | Electric Transmission | **Gen Upgrade Tolk X Reconductor Total** | | | **3,062,770** | **742,524** | This project upgraded the two 230-kV lines K-27 and K-45 and the associated line terminals at Tolk Substation and Plant X Substation. These upgrades were shared network upgrade projects identified in SPP's DISIS 2014-002 study to accommodate new generation being added. | Customer Funded | GI |
| 97 | Electric Transmission | GEN-2011-025 Fiber Wind | A.0000768.001 | GEN-2011-025 Fiber Wind Blanco | (195) | (47) | | | |
| 98 | Electric Transmission | GEN-2011-025 Fiber Wind | A.0000768.002 | Crosby-Blanco Retermination-11 | (261,400) | (63,373) | | | |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020 - Summary of Projects**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) | (H) | (I) |
|---|---|---|---|---|---|---|---|---|---|
| Line No. | Asset Class | WBS Level 1 Project Group Name | WBS Level 2 Number | WBS Level 2 Description | Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company | Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail | WBS Level 1 Project Group Description | Cost Recovery | Project Category |
| 99 | Electric Transmission | **GEN-2011-025 Fiber Wind Total** | | | **(261,595)** | **(63,420)** | This project provided a 115-kV interconnection for Fiber Wind LLC's 80 MW wind energy facility located in Crosby County, Texas. | Customer Funded | GI |
| 100 | Electric Transmission | GEN-2015-014 Lost Draw Substation | A.0000350.001 | Lost Draw Substation | 1,271,601 | 308,281 | | | |
| 101 | Electric Transmission | GEN-2015-014 Lost Draw Substation | A.0000350.002 | Lost Draw TOIF | 271,299 | 65,773 | | | |
| 102 | Electric Transmission | GEN-2015-014 Lost Draw Substation | A.0000350.005 | Lost Draw to Cochran Retermination | (297,876) | (72,216) | | | |
| 103 | Electric Transmission | GEN-2015-014 Lost Draw Substation | A.0000350.006 | Lost Draw to Lea Co Plains Retermin | (273,592) | (66,328) | | | |
| 104 | Electric Transmission | GEN-2015-014 Lost Draw Substation | A.0000350.008 | Lea County Plains 115kV Sub Term Up | (205,283) | (49,768) | | | |
| 105 | Electric Transmission | **GEN-2015-014 Lost Draw Substation Total** | | | **766,150** | **185,742** | This project constructed the new Lost Draw Switching Station to provide a 115-kV interconnection point for the Wildcat Ranch wind farm. | Customer Funded | GI |
| 106 | Electric Transmission | Hillside - 2nd DCP 28MVA XFMR | A.0001024.001 | Hillside, high side | 3,140 | 761 | | | |
| 107 | Electric Transmission | Hillside - 2nd DCP 28MVA XFMR | A.0001024.008 | U24 Reterm Hillside | 7,937 | 1,924 | | | |
| 108 | Electric Transmission | Hillside - 2nd DCP 28MVA XFMR | A.0001024.009 | Outpost PLC Removal | 512,435 | 124,232 | | | |
| 109 | Electric Transmission | **Hillside - 2nd DCP 28MVA XFMR Total** | | | **523,511** | **126,918** | This project reconfigured the 115-kV bus from a radial tap to an in-and-out arrangement and provided the 115-kV equipment to add a second 115/13.2-kV 28 MVA distribution transformer. This work was needed to provide addition capacity to serve new distribution loads in the southwest Amarillo area. | SPS Zonal | LI |
| 110 | Electric Transmission | Hitchland II (Optima) | A.0000974.012 | Optima Land | (35,120) | (8,514) | | | |
| 111 | Electric Transmission | **Hitchland II (Optima) Total** | | | **(35,120)** | **(8,514)** | This project was to construct a 345-kV switching station in Texas County, Oklahoma, to provide a point of interconnection for a proposed large wind farm in the area. However, the wind farm failed to materialize, so the switching station was not needed. This project has been cancelled and the charges are in the process of being zeroed out. | Customer Funded | TI |
| 112 | Electric Transmission | Ink Basin Substation | A.0000481.001 | ink basin substation | 80,485 | 19,512 | | | |
| 113 | Electric Transmission | Ink Basin Substation | A.0000481.002 | New Ink Basin 230/115kV Transformer | 31,868 | 7,726 | | | |
| 114 | Electric Transmission | Ink Basin Substation | A.0000481.004 | V-80 Reterm In, Line | (32,165) | (7,798) | | | |
| 115 | Electric Transmission | Ink Basin Substation | A.0000481.005 | V-80 Reterm Out, Line | 1,292 | 313 | | | |
| 116 | Electric Transmission | Ink Basin Substation | A.0000481.006 | K-93 Reterm In, Line | (570) | (138) | | | |
| 117 | Electric Transmission | Ink Basin Substation | A.0000481.007 | K-93 Reterm Out, Line | (85,467) | (20,720) | | | |
| 118 | Electric Transmission | Ink Basin Substation | A.0000481.008 | Denver City Sub, V-80 Terminal Upgr | (25,002) | (6,061) | | | |
| 119 | Electric Transmission | Ink Basin Substation | A.0000481.009 | Hobbs Generating Sub, K-93 Terminal | (44,467) | (10,780) | | | |
| 120 | Electric Transmission | Ink Basin Substation | A.0000481.010 | Yoakum Co Intg, K-93 Terminal Upgra | (2,429) | (589) | | | |
| 121 | Electric Transmission | Ink Basin Substation | A.0000481.012 | New 230/115kV Transformer | 28,520 | 6,914 | | | |
| 122 | Electric Transmission | **Ink Basin Substation Total** | | | **(47,935)** | **(11,621)** | This project constructed a new 230/115-kV, three breaker ring bus interchange in the south-central part of Yoakum County, Texas. Existing transmission circuits 115-kV V80 and 230-kV K93 were routed in to and out of the new interchange. A new 230/115-kV, 250 MVA, transformer provides a new source of power for the 115-kV. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 123 | Electric Transmission | Interconnection CVEC Mobile | A.0001390.001 | Z08 Line CVEC Mobile Connect TOIF | 476 | 115 | | | |
| 124 | Electric Transmission | **Interconnection CVEC Mobile Total** | | | **476** | **115** | This project constructed facilities to connect Central Valley Electric Co-op's (CVEC) mobile substation to the SPS transmission line Z08 at their Dexter substation. This project allowed CVEC to maintain service to their customers while they performed work on their substation. CVEC will reimburse SPS 100% of the cost of this work. | Customer Funded | OT |
| 125 | Electric Transmission | Interconnection Kemp GSEC RBEC | A.0001221.001 | INST 3 1 Way SW KEMP | (120,341) | (29,175) | | | |
| 126 | Electric Transmission | Interconnection Kemp GSEC RBEC | A.0001221.002 | INST Switch Xcel Portion | 416,687 | 101,020 | | | |
| 127 | Electric Transmission | **Interconnection Kemp GSEC RBEC Total** | | | **296,345** | **71,845** | This project installed three new 115-kV switches on SPS's transmission line T-47 to provide 115-kV service to Rita Blanca Electric Cooperative's new Kemp delivery point. | SPS Zonal/Customer Funded | LI |
| 128 | Electric Transmission | Interconnection Lucid RR Plant | A.0001002.001 | 115kV N loving Sub TOIF Lucid Porti | 5,083 | 1,232 | | | |
| 129 | Electric Transmission | Interconnection Lucid RR Plant | A.0001002.002 | 115kV N loving Sub Ter Upg Xcel Por | 1,384 | 336 | | | |
| 130 | Electric Transmission | **Interconnection Lucid RR Plant Total** | | | **6,467** | **1,568** | This project constructed a new 115-kV terminal at North Loving Substation to provide an interconnection point for a new customer-owned line to serve their 40 MW load. | SPS Zonal/Customer Funded | LI |
| 131 | Electric Transmission | Interconnection Matador | A.0001156.001 | Int 1 Way 115kV Switch Tap | 7,996 | 1,939 | | | |
| 132 | Electric Transmission | **Interconnection Matador Total** | | | **7,996** | **1,939** | This project provided a 115-kV service point to the Matador natural gas processing plant located near Loving, New Mexico. | SPS Zonal | LI |
| 133 | Electric Transmission | Interconnection Milwaukee | A.0001079.001 | Inst 115kV Quincy Sw Station TOIF P | 267,103 | 64,755 | | | |
| 134 | Electric Transmission | Interconnection Milwaukee | A.0001079.002 | Inst 115kV Quincy Sw Station Xcel P | 526,776 | 127,709 | | | |
| 135 | Electric Transmission | Interconnection Milwaukee | A.0001079.006 | Murphy Substation Relay Replacement | (760) | (184) | | | |
| 136 | Electric Transmission | Interconnection Milwaukee | A.0001079.009 | U21 MURP QUIN 115kV Line | 369 | 89 | | | |
| 137 | Electric Transmission | Interconnection Milwaukee | A.0001079.010 | U22 FRFD QUIN 115kV Line | 1,009 | 245 | | | |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020 - Summary of Projects**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) | (H) | (I) |
|---|---|---|---|---|---|---|---|---|---|
| **Line No.** | **Asset Class** | **WBS Level 1 Project Group Name** | **WBS Level 2 Number** | **WBS Level 2 Description** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail** | **WBS Level 1 Project Group Description** | **Cost Recovery** | **Project Category** |
| 138 | Electric Transmission | Interconnection Milwaukee | A.0001079.011 | Quincy Land | 508,551 | 123,291 | | | |
| 139 | Electric Transmission | **Interconnection Milwaukee Total** | | | **1,303,048** | **315,905** | This project installed the new SPS Quincy Switching Station to provide 115-kV service to South Plains Electric Cooperative to serve new load from their new Milwaukee Substation. | SPS Zonal | LI |
| 140 | Electric Transmission | Interconnection Sendero | A.0001076.002 | Sendero Install TOIF | (3,532) | (856) | | | |
| 141 | Electric Transmission | **Interconnection Sendero Total** | | | **(3,532)** | **(856)** | This project installed a three-way switch to provide a 115-kV service point to the Sendero natural gas processing plant located near Loving, New Mexico. | SPS Zonal | LI |
| 142 | Electric Transmission | Interconnection Tall Cotton Johnson Draw | A.0001227.001 | NW LCEC 115kV Term JODW | 71,180 | 17,257 | | | |
| 143 | Electric Transmission | Interconnection Tall Cotton Johnson Draw | A.0001227.002 | NW LCEC 115kV TERM JODW TOIF | 41,221 | 9,993 | | | |
| 144 | Electric Transmission | **Interconnection Tall Cotton Johnson Draw Total** | | | **112,401** | **27,250** | This project installed a new 115-kV breaker and associated equipment at SPS's Johnson Draw Substation to provide service to Lea County Electric Cooperative's (LCEC) new Tall Cotton Substation. LCEC paid for a portion of this project. | SPS Zonal/Customer Funded | LI |
| 145 | Electric Transmission | Interconnection WIPP | A.0001106.001 | WIPP W38 Structure Relocate | (91,591) | (22,205) | | | |
| 146 | Electric Transmission | **Interconnection WIPP Total** | | | **(91,591)** | **(22,205)** | This project reconfigured the 115-kV lines coming into the WIPP Substation serving the Waste Isolation Pilot Project (WIPP) facility located east of Carlsbad, New Mexico. The customer paid to reconfigure these lines to allow for an expansion of the WIPP facility. | Customer Funded | OT |
| 147 | Electric Transmission | Interconnection XTO BEU | A.0001384.002 | Inst W76 115KV 2-1 Wy Sw XCEL PORT | 1,040,502 | 252,254 | | | |
| 148 | Electric Transmission | **Interconnection XTO BEU Total** | | | **1,040,502** | **252,254** | This project installed two new 115-kV service points for this customer from SPS transmission line W76. This project was required to provide service to new customer load. The customer paid for a portion of this project. | SPS Zonal/Customer Funded | LI |
| 149 | Electric Transmission | Interconnection XTO Cornell | A.0000888.002 | XTO Tap 3 Way Switch Transmission | 888,603 | 215,429 | | | |
| 150 | Electric Transmission | **Interconnection XTO Cornell Total** | | | **888,603** | **215,429** | This project installed a new 115-kV service point for XTO's Cornell Substation from SPS transmission line U14. This project was required to provide service to new customer load and to a generator being installed by the customer. The customer paid for a portion of this project. | SPS Zonal/Customer Funded | GI/LI |
| 151 | Electric Transmission | Interconnection XTO DI#9 | A.0001126.001 | Inst Temp Switch Reimb TOIF | 248,449 | 60,233 | | | |
| 152 | Electric Transmission | Interconnection XTO DI#9 | A.0001126.002 | Inst 3 1 Way 115kV Switch | (61,667) | (14,950) | | | |
| 153 | Electric Transmission | **Interconnection XTO DI#9 Total** | | | **186,782** | **45,283** | This project installed three, one-way switches on transmission line U08 to provide a new 115-kV service point to XTO Energy located east of Loving, New Mexico. The customer paid for a portion of this project. | SPS Zonal/Customer Funded | LI |
| 154 | Electric Transmission | Interconnection XTO Mahoney | A.0001008.001 | Inst 230kV Sw Station TOIFPortion | 4,867 | 1,180 | | | |
| 155 | Electric Transmission | Interconnection XTO Mahoney | A.0001008.002 | Inst 230kV Sw Station XcelPortion | 22,293 | 5,405 | | | |
| 156 | Electric Transmission | Interconnection XTO Mahoney | A.0001008.006 | BRU Relay Upgrade Sub | (1,168) | (283) | | | |
| 157 | Electric Transmission | Interconnection XTO Mahoney | A.0001008.009 | R11 230kV BRU Mahoney TLINE | 1,156 | 280 | | | |
| 158 | Electric Transmission | **Interconnection XTO Mahoney Total** | | | **27,148** | **6,582** | This project installed the new Mahoney Switching Station to provide a new 230-kV service point to XTO. The customer paid for a portion of this project. | SPS Zonal/Customer Funded | LI |
| 159 | Electric Transmission | Interconnection XTO Poker Cowboy Phase 1 | A.0001215.001 | Inst W39 Switch Poker Cowboy Temp | (982,424) | (238,174) | | | |
| 160 | Electric Transmission | **Interconnection XTO Poker Cowboy Phase 1 Total** | | | **(982,424)** | **(238,174)** | This project installed two new 115-kV switches on SPS's transmission line W-39 to provide 115-kV service to XTO to serve their new loads in the area. | Customer Funded | LI |
| 161 | Electric Transmission | Interconnection Yuma | A.0001399.001 | Yuma CT/PT Metering | 102,505 | 24,851 | | | |
| 162 | Electric Transmission | **Interconnection Yuma Total** | | | **102,505** | **24,851** | This project installed 115-kV metering equipment, protective relaying and associated equipment at Yuma Interchange to accommodate the addition of a second South Plains Electric Cooperative 115/69-kV transformer at this station. | SPS Zonal | LI |
| 163 | Electric Transmission | Jones 4 Mustang 6-Quay IA | A.0000621.005 | Lubbock So-Repl Switches 6951& | 1,987 | 482 | | | |
| 164 | Electric Transmission | **Jones 4 Mustang 6-Quay IA Total** | | | **1,987** | **482** | This project constructed various network upgrades for interconnection that were required in the respective interconnection agreements for these generators. | Customer Funded | GI |
| 165 | Electric Transmission | K32 Terminal Upgrades Potter & Harrington | A.0000482.001 | k32 terminal upgrades potter & harr | 1,675 | 406 | | | |
| 166 | Electric Transmission | K32 Terminal Upgrades Potter & Harrington | A.0000482.002 | Potter Co, K32 Terminal Upgrade to | (3,873) | (939) | | | |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020 - Summary of Projects**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) | (H) | (I) |
|---|---|---|---|---|---|---|---|---|---|
| Line No. | Asset Class | WBS Level 1 Project Group Name | WBS Level 2 Number | WBS Level 2 Description | Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company | Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail | WBS Level 1 Project Group Description | Cost Recovery | Project Category |
| 167 | Electric Transmission | **K32 Terminal Upgrades Potter & Harrington Total** | | | **(2,198)** | **(533)** | This project replaced the line terminal equipment for 230-kV line K-32 at Harrington Station and Potter County Interchange. This work was needed to comply with an NTC from SPP requiring a minimum summer emergency rating of 547 MVA for the line and terminals. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 168 | Electric Transmission | K62 Nichols - Amarillo South Terminal Upgrade | A.0001028.001 | Upgr Nichols 230kV (K62) Term to Am | 85,726 | 20,783 | | | |
| 169 | Electric Transmission | **K62 Nichols - Amarillo South Terminal Upgrade Total** | | | **85,726** | **20,783** | This project upgraded the existing K62 substation terminal elements at Nichols Station to achieve a summer emergency rating of 547 MVA per SPP. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 170 | Electric Transmission | Lea Co Plains Sw Cap Bank | A.0001283.001 | Lea Co. Plains Sw. Cap Bank | (8,820) | (2,138) | | | |
| 171 | Electric Transmission | Lea Co Plains Sw Cap Bank | A.0001283.004 | Lea Plains Metering | (130) | (31) | | | |
| 172 | Electric Transmission | **Lea Co Plains Sw Cap Bank Total** | | | **(8,950)** | **(2,170)** | This project installed a 14.4 MVAr capacitor bank. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 173 | Electric Transmission | Line ELR SPS | A.0000499.011 | SPS ELR 115kV NM 2016 | 838 | 203 | | | |
| 174 | Electric Transmission | Line ELR SPS | A.0000499.012 | SPS ELR 69kV TX 2016 | 1,635,136 | 396,415 | | | |
| 175 | Electric Transmission | Line ELR SPS | A.0000499.013 | SPS ELR 115kV TX 2016 | 2,055,733 | 498,382 | | | |
| 176 | Electric Transmission | Line ELR SPS | A.0000499.015 | SPS 230kV ELR TX 2016 | 4,019,639 | 974,503 | | | |
| 177 | Electric Transmission | Line ELR SPS | A.0000499.019 | J14 ELR Maintenance | 2,405,377 | 583,148 | | | |
| 178 | Electric Transmission | Line ELR SPS | A.0000499.020 | Z05 ELR Maintenance | (193,476) | (46,905) | | | |
| 179 | Electric Transmission | Line ELR SPS | A.0000499.026 | Z50.1 Retire | 162 | 39 | | | |
| 180 | Electric Transmission | Line ELR SPS | A.0000499.027 | Y79 ELR Maintanence | 731,850 | 177,426 | | | |
| 181 | Electric Transmission | Line ELR SPS | A.0000499.029 | Z65 ELR Maintenance | 659,860 | 159,973 | | | |
| 182 | Electric Transmission | Line ELR SPS | A.0000499.030 | Z36 ELR Maintenance | 101,113 | 24,513 | | | |
| 183 | Electric Transmission | Line ELR SPS | A.0000499.031 | T68 ELR Maintenance | 288,284 | 69,890 | | | |
| 184 | Electric Transmission | Line ELR SPS | A.0000499.033 | T78 Str Rpl | 371,587 | 90,086 | | | |
| 185 | Electric Transmission | Line ELR SPS | A.0000499.052 | T52 Str Rpl | 488,864 | 118,518 | | | |
| 186 | Electric Transmission | **Line ELR SPS Total** | | | **12,564,968** | **3,046,193** | The term "ELR" stands for End of Life Replacement. This project provided for improvement work on transmission lines to address high priority capital defects, such as defective wood poles and cross arms, that were discovered through line inspections. Work in this ELR group included emergent work, planned usually 12 to 18 months in advance of the work being performed. This work was done on several transmission lines as part of a multi-year program to replace capital property units on a like-for-like basis and return the transmission lines to overall good health. | SPS Zonal | SR |
| 187 | Electric Transmission | LP L Relay Upgrades | A.0001067.004 | Lubbock South K64 Relay Upgrade | (714) | (173) | | | |
| 188 | Electric Transmission | **LP L Relay Upgrades Total** | | | **(714)** | **(173)** | This project upgraded the line protection relays, breaker controls and communication architecture at SPS's Lubbock East and Lubbock South Interchanges on the terminals providing 230-kV service to Lubbock Power and Light (LP&L). | SPS Zonal | SR |
| 189 | Electric Transmission | Lubbock S.-Allen Terminal Upgrades | A.0000484.001 | Lubbock S. Sub, Allen Term | 20,087 | 4,870 | | | |
| 190 | Electric Transmission | Lubbock S.-Allen Terminal Upgrades | A.0000484.002 | Allen Sub, Lubbock S. Term | 23,311 | 5,651 | | | |
| 191 | Electric Transmission | **Lubbock S.-Allen Terminal Upgrades Total** | | | **43,398** | **10,521** | This project upgraded the limiting equipment on the 115-kV line and related substation terminals from Lubbock South Interchange to Allen Substation. The SPP NTC required a minimum summer emergency rating of 174 MVA for this line and the substation terminals. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 192 | Electric Transmission | Lynn Co. 115/69 Xfmr #1 Upgrade | A.0001284.001 | Lynn Co 115/69 Xfmr #1 Upgrade | 13,287 | 3,221 | | | |
| 193 | Electric Transmission | **Lynn Co. 115/69 Xfmr #1 Upgrade Total** | | | **13,287** | **3,221** | This project replaced the 40 MVA, 115/69-kV transformer at Lynn County substation with a 84 MVA unit. This project was needed to address the overload of the Lynn County Interchange 115/69-kV circuit 1 transformer for the loss of Lynn County Interchange 115/69-kV circuit 2 transformer. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 194 | Electric Transmission | Mustang - Seminole 115kV Ckt1 New Line | A.0001030.002 | Mustang - Seminole ROW | 972,898 | 235,865 | | | |
| 195 | Electric Transmission | Mustang - Seminole 115kV Ckt1 New Line | A.0001030.010 | U01 1 U01 14 Circuit DC with U25 | 847,861 | 205,552 | | | |
| 196 | Electric Transmission | **Mustang - Seminole 115kV Ckt1 New Line Total** | | | **1,820,759** | **441,416** | This project installed a 17-mile, 115-kV line and new substation terminals at Mustang Station and Seminole Interchange. The SPP NTC required a minimum summer emergency rating of 240 MVA for the line. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 197 | Electric Transmission | Mustang-Shell CO2 115kV Line | A.0000979.001 | 115Line Mustang-Shell Trans Po | (40,912) | (9,919) | | | |
| 198 | Electric Transmission | Mustang-Shell CO2 115kV Line | A.0000979.002 | Denver City -Shell Reterm Tran | (22,908) | (5,554) | | | |
| 199 | Electric Transmission | Mustang-Shell CO2 115kV Line | A.0000979.003 | Yoakum-Shell Reterm Tran Porti | (20,789) | (5,040) | | | |
| 200 | Electric Transmission | Mustang-Shell CO2 115kV Line | A.0000979.005 | Yoakum Relay upgrade Sub Porti | 869,510 | 210,800 | | | |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020 - Summary of Projects**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) | (H) | (I) |
|---|---|---|---|---|---|---|---|---|---|
| Line No. | Asset Class | WBS Level 1 Project Group Name | WBS Level 2 Number | WBS Level 2 Description | Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company | Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail | WBS Level 1 Project Group Description | Cost Recovery | Project Category |
| 201 | Electric Transmission | Mustang-Shell CO2 115kV Line | A.0000979.007 | Mustang Sub Sub Portion Sub | 28,043 | 6,799 | | | |
| 202 | Electric Transmission | Mustang-Shell CO2 115kV Line | A.0000979.008 | Relay Upg - DVCY Shell Term | 619,235 | 150,124 | | | |
| 203 | Electric Transmission | Mustang-Shell CO2 115kV Line | A.0000979.010 | Shell Substation Sub Portion | 36,476 | 8,843 | | | |
| 204 | Electric Transmission | **Mustang-Shell CO2 115kV Line Total** | | | **1,468,655** | **356,054** | This project constructed a new 115-kV transmission line between the Mustang and Shell CO2 substations. The project was needed to address overloads in the area. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 205 | Electric Transmission | NE Hereford to New Center St. 115 kV Line | A.0000296.005 | NE Hereford to New Center St. | 6,833 | 1,657 | | | |
| 206 | Electric Transmission | NE Hereford to New Center St. 115 kV Line | A.0000296.006 | New Centre St 115kV Sub | (54,330) | (13,171) | | | |
| 207 | Electric Transmission | NE Hereford to New Center St. 115 kV Line | A.0000296.008 | NE Hereford Sub | 4,882 | 1,184 | | | |
| 208 | Electric Transmission | **NE Hereford to New Center St. 115 kV Line Total** | | | **(42,615)** | **(10,331)** | This project constructed a new 115-kV line from Northeast Hereford Interchange to a new distribution substation named New Center St. (La Plata) to allow the 69-kV substation to be removed from the 69-kV Hereford Loop. This allowed the Hereford Interchange and the Northeast Hereford Interchange 115/69-kV transformers to stay under their ratings. This project was needed for system reliability. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 209 | Electric Transmission | Needmore UPLC Upgrades | A.0001078.001 | Yoakum UPLC Upgrade | 42,858 | 10,390 | | | |
| 210 | Electric Transmission | **Needmore UPLC Upgrades Total** | | | **42,858** | **10,390** | This project replaced the Under frequency Protective Line Carrier (UPLC) systems at Needmore, Yoakum, and Tolk substations to the current standard for this relay communication system. | SPS Zonal | SR |
| 211 | Electric Transmission | NEF Targa Reconductor | A.0001285.001 | NEF-Targa Reconductor | 108,144 | 26,218 | | | |
| 212 | Electric Transmission | **NEF Targa Reconductor Total** | | | **108,144** | **26,218** | This project re-conductored the 6.6-mile, 115-kV transmission circuit running from NEF Substation to the Targa Substation tap. This project was needed to eliminate the overloading of this segment during certain system conditions. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 213 | Electric Transmission | NERC TPL Relay Improvements | A.0001059.004 | Eddy County 4950 Relay Upgrade TPL | 768,978 | 186,427 | | | |
| 214 | Electric Transmission | NERC TPL Relay Improvements | A.0001059.005 | Roswell 4910 Relay Upgrade TPL | 7,581 | 1,838 | | | |
| 215 | Electric Transmission | **NERC TPL Relay Improvements Total** | | | **776,558** | **188,265** | This project installed and replaced relays to comply with the North American Electric Reliability Corporation (NERC) Transmission Planning (TPL) standards at a number of identified substations. | SPS Zonal | RE |
| 216 | Electric Transmission | OPIE 2 China Draw-Wood Draw 115kV_PID 30825 | A.0000424.099 | China Draw-Wood Draw 115kV Lin | 1,198,517 | 290,563 | | | |
| 217 | Electric Transmission | **OPIE 2 China Draw-Wood Draw 115kV_PID 30825 Total** | | | **1,198,517** | **290,563** | This project constructed a 115-kV line between China Draw and Wood Draw to loop the 115-kV transmission system. This line is south of Carlsbad, New Mexico. This project was needed for system reliability and SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 218 | Electric Transmission | OPIE 2 China Draw-Yeso Hills 115kV_PID 30675 | A.0000424.033 | ChinaDraw 115kV Sub Y Hill Ter | 9,396 | 2,278 | | | |
| 219 | Electric Transmission | OPIE 2 China Draw-Yeso Hills 115kV_PID 30675 | A.0000424.231 | W87 China Draw Chevron Tap 115kV Li | 35,325 | 8,564 | | | |
| 220 | Electric Transmission | **OPIE 2 China Draw-Yeso Hills 115kV_PID 30675 Total** | | | **44,721** | **10,842** | When approved, this project was to construct a 19-mile, radial 115-kV line from China Draw sub to the new Yeso Hills substation west of China Draw for service to developing loads. SPP issued SPS an NTC for that project. However, restrictions on the development in this area were discovered, making oil and gas development in this area not feasible at this time. Also during this time, a customer requested 115-kV service from this line for a new load. The final project scope constructed four miles of 115-kV line to provide service to the customer and the remaining line and substation are not planned to be built. | SPP Base Plan | RE |
| 221 | Electric Transmission | OPIE 2 Kiowa-Eddy Co 345kV | A.0000424.109 | Kiowa-Eddy Co 345kV ROW | 2,417 | 586 | | | |
| 222 | Electric Transmission | OPIE 2 Kiowa-Eddy Co 345kV | A.0000424.110 | Eddy Co 345kV Sub Land | 3,386 | 821 | | | |
| 223 | Electric Transmission | OPIE 2 Kiowa-Eddy Co 345kV | A.0000424.242 | J14 Eddy Reterm Line | 228,887 | 55,490 | | | |
| 224 | Electric Transmission | OPIE 2 Kiowa-Eddy Co 345kV | A.0000424.265 | K23 Structure Raise | (8,679) | (2,104) | | | |
| 225 | Electric Transmission | OPIE 2 Kiowa-Eddy Co 345kV | A.0000424.274 | K23 Term Str Replacement | 165,201 | 40,051 | | | |
| 226 | Electric Transmission | **OPIE 2 Kiowa-Eddy Co 345kV Total** | | | **391,213** | **94,844** | This project constructed a new 34-mile, 345-kV transmission line between Eddy County and Kiowa Interchanges. This project also installed a 345-kV ring bus at Eddy County Interchange and a new 345-kV terminal at Kiowa Interchange. The project was identified by SPP as needed for reliability. SPP issued SPS an NTC for this project. | SPS Zonal | RE |
| 227 | Electric Transmission | OPIE 2 Kiowa-Road Runner 345kV Conv_PID 30639 | A.0000424.088 | Kiowa-Road Runner 345kV Line_U | 4,984 | 1,208 | | | |
| 228 | Electric Transmission | OPIE 2 Kiowa-Road Runner 345kV Conv_PID 30639 | A.0000424.093 | Road Runner Sub 345kV Conv_UID | 15,906 | 3,856 | | | |
| 229 | Electric Transmission | OPIE 2 Kiowa-Road Runner 345kV Conv_PID 30639 | A.0000424.095 | Road Runner Sub Xfmr 345kV_UID | 91,110 | 22,088 | | | |
| 230 | Electric Transmission | OPIE 2 Kiowa-Road Runner 345kV Conv_PID 30639 | A.0002049.001 | Potash Sub 115 kV Terminal Sub | (140,208) | (33,991) | | | |

**Southwestern Public Service Company**

**Transmission Capital Additions**
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| | (A) | (B) | (C) | (D) | (E) | (F) | (G) | (H) | (I) |
|---|---|---|---|---|---|---|---|---|---|
| Line No. | Asset Class | WBS Level 1 Project Group Name | WBS Level 2 Number | WBS Level 2 Description | Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company | Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail | WBS Level 1 Project Group Description | Cost Recovery | Project Category |
| 231 | Electric Transmission | **OPIE 2 Kiowa-Road Runner 345kV Conv_PID 30639 Total** | | | **(28,208)** | **(6,839)** | This project installed new 345/115-kV transformers at the Kiowa and Roadrunner substations, and constructed a new 345/115-kV double circuit transmission line between the Kiowa and Potash Junction substations. The project was needed for reliability reasons and SPP issued SPS an NTC for the project. | SPP Base Plan | RE |
| 232 | Electric Transmission | OPIE 2 Livingston Ridge-Cardinal 115kV_PID 30695 | A.0000424.058 | T38 Potash Re-Term_UID 50924 | 8,129 | 1,971 | | | |
| 233 | Electric Transmission | OPIE 2 Livingston Ridge-Cardinal 115kV_PID 30695 | A.0000424.068 | L Ridge Sub 115kV Conv/S Brush | (1,963) | (476) | | | |
| 234 | Electric Transmission | OPIE 2 Livingston Ridge-Cardinal 115kV_PID 30695 | A.0000424.070 | Potash Sub Rly Mods Livingston | (23,497) | (5,697) | | | |
| 235 | Electric Transmission | **OPIE 2 Livingston Ridge-Cardinal 115kV_PID 30695 Total** | | | **(17,332)** | **(4,202)** | This project upgraded the 69-kV bus to 115-kV at the Livingston Ridge Substation near Carlsbad, New Mexico, constructed the new Sage Brush Substation near Hobbs, New Mexico, constructed the new Cardinal Substation near Hobbs, New Mexico, and constructed a new 115-kV transmission line between the Livingston Ridge, Sage Brush, and Cardinal Substations. The project was identified by SPP in the High Priority Incremental Load Study ("HPILS"). SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 236 | Electric Transmission | OPIE 3 Kiowa-China Draw 345kV_PID 30638 | A.0000424.085 | Kiowa-North Loving 345kV Line | 55,165 | 13,374 | | | |
| 237 | Electric Transmission | OPIE 3 Kiowa-China Draw 345kV_PID 30638 | A.0000424.087 | N Loving-China Draw 345kV Line | 23,587 | 5,718 | | | |
| 238 | Electric Transmission | OPIE 3 Kiowa-China Draw 345kV_PID 30638 | A.0000424.163 | N Loving Sub Kiowa/C Draw Term | (1,312) | (318) | | | |
| 239 | Electric Transmission | OPIE 3 Kiowa-China Draw 345kV_PID 30638 | A.0000424.165 | N Loving Sub Xfmr 345kV/115kV | 35,882 | 8,699 | | | |
| 240 | Electric Transmission | **OPIE 3 Kiowa-China Draw 345kV_PID 30638 Total** | | | **113,322** | **27,473** | This project installed new 345/115-kV transformers at North Loving and China Draw substations. It also constructed a new 345-kV transmission line from Kiowa to North Loving to China Draw substation. The project was needed for reliability and SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 241 | Electric Transmission | OPIE 3 Malaga Bend | A.0001214.005 | U26 LS Malaga 115kV ROW | 1,076,668 | 261,022 | | | |
| 242 | Electric Transmission | **OPIE 3 Malaga Bend Total** | | | **1,076,668** | **261,022** | This project installed a new 115-kV distribution substation called Malaga Bend as well as two new 115-kV transmission lines, a line approximately 11 miles in length from Malaga Bend Substation to Loving South Substation and a line approximately 10 miles in length from Malaga Bend Substation to Phantom Interchange. This substation was needed to serve the rapidly increasing new distribution loads in the surrounding area. | SPS Zonal | LI |
| 243 | Electric Transmission | OPIE 3 Roadrunner 115/25kV Expansion | A.0000424.237 | Roadrunner 115kV Bus Expansion | 89,592 | 21,720 | | | |
| 244 | Electric Transmission | **OPIE 3 Roadrunner 115/25kV Expansion Total** | | | **89,592** | **21,720** | This project expanded the 115-kV bus at Roadrunner Interchange to provide a 115-kV connection point for the new 115/22.86-kV distribution transformer being installed. This new distribution transformer was needed to serve the rapidly expanding distribution load in the area. | SPS Zonal | LI |
| 245 | Electric Transmission | OPIE 3 Roadrunner-China Draw 345kV | A.0001189.005 | OPIE PhantomU28retermROW Phan to Re | 1,101 | 267 | | | |
| 246 | Electric Transmission | OPIE 3 Roadrunner-China Draw 345kV | A.0001189.007 | OPIE Phantom Sub Land | 296,449 | 71,870 | | | |
| 247 | Electric Transmission | OPIE 3 Roadrunner-China Draw 345kV | A.0001189.009 | OPIE Phantom Roadrunner 345 ROW | 1,470,682 | 356,545 | | | |
| 248 | Electric Transmission | OPIE 3 Roadrunner-China Draw 345kV | A.0001189.011 | OPIE China Draw-Phantom 345 ROW | 1,709,591 | 414,465 | | | |
| 249 | Electric Transmission | OPIE 3 Roadrunner-China Draw 345kV | A.0001189.026 | China Draw Land | 52,372 | 12,697 | | | |
| 250 | Electric Transmission | **OPIE 3 Roadrunner-China Draw 345kV Total** | | | **3,530,194** | **855,844** | This project installed the new 345/115-kV Phantom Substation as well as two new 345-kV transmission lines, a line approximately 20 miles in length from Phantom Substation to China Draw Substation and a line approximately 21 miles in length from Phantom Substation to Roadrunner Substation. The Phantom Substation was needed to serve the rapidly increasing new transmission loads in the surrounding area and the looped 345-kV lines were needed to provide the needed reliability to these new loads and to the existing transmission system in the area. SPP issued SPS an NTC for this project. | SPP Base Plan | RE/LI |
| 251 | Electric Transmission | OPIE Hobbs-Kiowa 345kV_PID 30637 | A.0000424.037 | OPIE 3_Hobbs-Kiowa 345kV Line | 222,377 | 53,912 | | | |
| 252 | Electric Transmission | OPIE Hobbs-Kiowa 345kV_PID 30637 | A.0000424.040 | Kiowa 345kV Sub H Term/Reactor | (8,046) | (1,951) | | | |
| 253 | Electric Transmission | OPIE Hobbs-Kiowa 345kV_PID 30637 | A.0000424.044 | Hobbs Sub Xfmr 345kV/230kV_UID | 22,058 | 5,348 | | | |
| 254 | Electric Transmission | **OPIE Hobbs-Kiowa 345kV_PID 30637 Total** | | | **236,389** | **57,309** | This project installed new 345/115-kV transformers at the Hobbs Generating Plant and Kiowa interchanges. It also constructed a new 345-kV transmission line between Hobbs Generating Plant and Kiowa substations. The project was needed for reliability and SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 255 | Electric Transmission | OPIE Monument-Byrd Reconductor | A.0000424.136 | Monument-Byrd 115kvRecond Line | 313,842 | 76,086 | | | |
| 256 | Electric Transmission | OPIE Monument-Byrd Reconductor | A.0000424.137 | Monument-Byrd ROW | (1,005,341) | (243,730) | | | |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020 - Summary of Projects**

| Line No. | (A) Asset Class | (B) WBS Level 1 Project Group Name | (C) WBS Level 2 Number | (D) WBS Level 2 Description | (E) Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company | (F) Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail | (G) WBS Level 1 Project Group Description | (H) Cost Recovery | (I) Project Category |
|---|---|---|---|---|---|---|---|---|---|
| 257 | Electric Transmission | **OPIE Monument-Byrd Reconductor Total** | | | **(691,499)** | **(167,644)** | This project rebuilt four miles of 115-kV line between Monument and Byrd substations. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 258 | Electric Transmission | OPIE N Loving-S Loving 115kV | A.0000424.119 | N Loving-S Loving 115 kV Line | 2,808,839 | 680,962 | | | |
| 259 | Electric Transmission | OPIE N Loving-S Loving 115kV | A.0000424.120 | N Loving-S Loving 115 kVROW | 6,228 | 1,510 | | | |
| 260 | Electric Transmission | OPIE N Loving-S Loving 115kV | A.0000424.121 | S Loving 115kV Conv From 69kV | 1,080,571 | 261,969 | | | |
| 261 | Electric Transmission | OPIE N Loving-S Loving 115kV | A.0000424.122 | N Loving 115kV Bus & S Loving | 4,707,462 | 1,141,255 | | | |
| 262 | Electric Transmission | OPIE N Loving-S Loving 115kV | A.0000424.257 | W 72 U 18 Common Structure | 58,765 | 14,247 | | | |
| 263 | Electric Transmission | **OPIE N Loving-S Loving 115kV Total** | | | **8,661,866** | **2,099,943** | This project constructed approximately 3 miles of 115-kV transmission line from North Loving Substation to Loving South Substation and converted Loving South Substation from 69-kV to 115-kV operation. This upgrade was needed to reduce the 69-kV loading on the 115/69-kV transformers at Carlsbad Plant Interchange. | SPS Zonal | RE |
| 264 | Electric Transmission | OPIE Potash-Livingston Ridge Recond | A.0000424.143 | IMC1-Intrepid West 115kv Recd | 31,716 | 7,689 | | | |
| 265 | Electric Transmission | OPIE Potash-Livingston Ridge Recond | A.0000424.144 | OPIE Potash-Livingston Ridge | (7,669) | (1,859) | | | |
| 266 | Electric Transmission | OPIE Potash-Livingston Ridge Recond | A.0000424.145 | Potash-Intrepid West 115kvRecd | 21,547 | 5,224 | | | |
| 267 | Electric Transmission | OPIE Potash-Livingston Ridge Recond | A.0000424.150 | OPIE PTJU Intrepid Term Sub | 187,333 | 45,416 | | | |
| 268 | Electric Transmission | **OPIE Potash-Livingston Ridge Recond Total** | | | **232,927** | **56,470** | This project rebuilt 13.5 miles of 115-kV line between Potash Junction and Livingston Ridge substations. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 269 | Electric Transmission | OPIE Reconductor PCA-Quahada | A.0000424.029 | V21 Quahada 115kV Reconductor | 5,799 | 1,406 | | | |
| 270 | Electric Transmission | **OPIE Reconductor_PCA-Quahada Total** | | | **5,799** | **1,406** | This project wrecked out and rebuilt the 115-kV line between the PCA and Quahada substations near Carlsbad, New Mexico. This project was needed to address overloads in the area. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 271 | Electric Transmission | OPIE TUCO-Hobbs 345kV_PID 30376 | A.0000673.021 | TUCO-Yoakum 345kV Line_UID 504 | 110,552,716 | 26,801,890 | | | |
| 272 | Electric Transmission | OPIE TUCO-Hobbs 345kV_PID 30376 | A.0000673.022 | TUCO-Yoakum 345kV ROW_UID 5044 | 10,740 | 2,604 | | | |
| 273 | Electric Transmission | OPIE TUCO-Hobbs 345kV_PID 30376 | A.0000673.023 | Yoakum-TX/NM Border 345kV Line | 271,866 | 65,910 | | | |
| 274 | Electric Transmission | OPIE TUCO-Hobbs 345kV_PID 30376 | A.0000673.025 | TX/NM Border-Hobbs 345kV Line | (28,305) | (6,862) | | | |
| 275 | Electric Transmission | OPIE TUCO-Hobbs 345kV_PID 30376 | A.0000673.026 | TX/NM Border-Hobbs 345kV ROW_U | 30,217 | 7,326 | | | |
| 276 | Electric Transmission | OPIE TUCO-Hobbs 345kV_PID 30376 | A.0000673.030 | Yoakum 345kV Sub Reactor/Hobbs | 6,755 | 1,638 | | | |
| 277 | Electric Transmission | OPIE TUCO-Hobbs 345kV_PID 30376 | A.0000673.031 | Yoakum Sub Xmfr 345kV/230KV_UI | 685,846 | 166,273 | | | |
| 278 | Electric Transmission | OPIE TUCO-Hobbs 345kV_PID 30376 | A.0000673.039 | Hobbs Sub 345kV Yoakum Reator | 24,773 | 6,006 | | | |
| 279 | Electric Transmission | OPIE TUCO-Hobbs 345kV_PID 30376 | A.0000673.040 | Terry Co Sub Repeater | 576,452 | 139,752 | | | |
| 280 | Electric Transmission | **OPIE TUCO-Hobbs 345kV_PID 30376 Total** | | | **112,131,059** | **27,184,536** | This project constructed a single-circuit 345-kV transmission line between the TUCO Substation, near Lubbock, Texas, the Yoakum Substation in Texas, and the Hobbs Generating Substation near Hobbs, New Mexico. The project was evaluated and identified in the 2013 SPP High Priority Incremental Load Study ("HPILS") as needed for reliability to alleviate loading violations on the underlying network and voltage violations due to insufficient power supply to network load additions. In addition to its reliability benefits, the project was also identified by SPP as providing significant economic benefits. In 2016, SPP issued its Integrated Transmission Planning Near-Term study which identified the TUCO to Yoakum portion of the project as needed as soon as 2017 to mitigate voltage issues in that area. SPP issued SPS NTCs for this project. | SPP Base Plan | RE |
| 281 | Electric Transmission | Osage Re-termination Project | A.0000767.008 | East Plant Relay Sub | 2,718 | 659 | | | |
| 282 | Electric Transmission | **Osage Re-termination Project Total** | | | **2,718** | **659** | This project upgraded the 115-kV bus at the Randall County Substation. The project was needed to address overloads at the Osage Substation. SPP issued SPS an NTC for the project. | SPP Base Plan | RE |
| 283 | Electric Transmission | Physical Security | A.0000710.003 | SPS Physical Security Sub Infrastru | 19,414 | 4,707 | | | |
| 284 | Electric Transmission | **Physical Security Total** | | | **19,414** | **4,707** | This project installed Physical Security Upgrades affecting SPS substation protection with specific work varying by substation location, current layout, and threat history. Typical security measures included the installation of equipment such as cameras and motion sensors at substations. | SPS Zonal | OT |
| 285 | Electric Transmission | Plainview City Sub Removal | A.0000489.003 | Install Capacitor Bank at Kiser Sub | (3,326) | (806) | | | |
| 286 | Electric Transmission | **Plainview City Sub Removal Total** | | | **(3,326)** | **(806)** | This project removed the 69-kV bus and associated equipment at Plainview City Substation and removed the 69-kV transmission line Z-84 that connected Kiser Substation to Plainview City Substation. The Kiser Substation replaced the Plainview City Substation. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020 - Summary of Projects**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) | (H) | (I) |
|---|---|---|---|---|---|---|---|---|---|
| **Line No.** | **Asset Class** | **WBS Level 1 Project Group Name** | **WBS Level 2 Number** | **WBS Level 2 Description** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail** | **WBS Level 1 Project Group Description** | **Cost Recovery** | **Project Category** |
| 287 | Electric Transmission | Plant X 115kV BFR | A.0000842.002 | Hale Co Relay Upgrade for Plan | 505,818 | 122,628 | | | |
| 288 | Electric Transmission | Plant X 115kV BFR | A.0000842.004 | Plant X Add BFR on All 115 kV | 6,886,105 | 1,669,435 | | | |
| 289 | Electric Transmission | Plant X 115kV BFR | A.0000842.006 | Plant X-Lamton Carrier Equipment | 107,338 | 26,023 | | | |
| 290 | Electric Transmission | Plant X 115kV BFR | A.0000842.007 | Plant X-Castro Carrier Equipment | 100,076 | 24,262 | | | |
| 291 | Electric Transmission | Plant X 115kV BFR | A.0000842.008 | Plant X-Bailey Carrier Equipment | 109,000 | 26,426 | | | |
| 292 | Electric Transmission | **Plant X 115kV BFR Total** | | | **7,708,337** | **1,868,774** | This project added breaker failure relaying to the 115-kV breakers at the Plant X Substation. This project was needed to address NERC compliance requirements as well as to mitigate stability and reliability issues on the transmission system. | SPS Zonal | RE |
| 293 | Electric Transmission | Portales 115 kV Loop | A.0000463.001 | Portales 115kV Loop Line | 8,663 | 2,100 | | | |
| 294 | Electric Transmission | Portales 115 kV Loop | A.0000463.011 | Kilgore-South Portales ROW | (23,342) | (5,659) | | | |
| 295 | Electric Transmission | Portales 115 kV Loop | A.0000463.015 | Market St.-South Portales ROW | 144 | 35 | | | |
| 296 | Electric Transmission | **Portales 115 kV Loop Total** | | | **(14,535)** | **(3,524)** | This project constructed a 115-kV loop around the City of Portales, New Mexico and converted the South Portales and Market Street substations to 115-kV to provide additional load serving capability and eliminate the overloads of the 115/69-kV transformers at Portales Interchange. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 297 | Electric Transmission | RB - Purnell Sub | A.0001061.008 | Purnell Sub | (871,832) | (211,363) | | | |
| 298 | Electric Transmission | RB - Purnell Sub | A.0001061.009 | XIT 115kV Sub TOIF | 1,237 | 300 | | | |
| 299 | Electric Transmission | **RB - Purnell Sub Total** | | | **(870,595)** | **(211,063)** | This project installed a new 115-kV terminal at SPS's XIT Substation to provide 115-kV service to Rita Blanca Electric Cooperative to serve new load from its new Wolves Substation. | SPS Zonal/Customer Funded | LI |
| 300 | Electric Transmission | Roosevelt Cty 230 Brkr 1/2 | A.0000519.001 | Roosevelt County Substation | 29,652 | 7,189 | | | |
| 301 | Electric Transmission | **Roosevelt Cty 230 Brkr 1/2 Total** | | | **29,652** | **7,189** | The project re-configured the Roosevelt County Substation 230-kV bus to a double-bus, double breaker configuration to accommodate the addition of the Pleasant Hill 230-kV line terminal. The upgraded configuration improves reliability and mitigates long-term outages in the event of a breaker that fails to open. | SPS Zonal | RE |
| 302 | Electric Transmission | S&E - SPS Line | A.0000303.007 | SPS S&E B 230kV, Line | 19,668 | 4,768 | | | |
| 303 | Electric Transmission | S&E - SPS Line | A.0000303.027 | SPS 2019 S&E B 230KV Line | 121,695 | 29,503 | | | |
| 304 | Electric Transmission | S&E - SPS Line | A.0000303.040 | SPS S&E 69kV Line NM | 911,889 | 221,074 | | | |
| 305 | Electric Transmission | S&E - SPS Line | A.0000303.041 | SPS S&E 115kV Line NM | 131,850 | 31,965 | | | |
| 306 | Electric Transmission | S&E - SPS Line | A.0000303.043 | SPS S&E 345kV Line NM | (82,273) | (19,946) | | | |
| 307 | Electric Transmission | S&E - SPS Line | A.0000303.044 | SPS S&E 69kV Line TX | 174,521 | 42,310 | | | |
| 308 | Electric Transmission | S&E - SPS Line | A.0000303.045 | SPS S&E 115kV Line TX | 1,521,577 | 368,884 | | | |
| 309 | Electric Transmission | S&E - SPS Line | A.0000303.046 | SPS S&E 345kV Line TX | 88,741 | 21,514 | | | |
| 310 | Electric Transmission | S&E - SPS Line | A.0000303.047 | SPS S&E 115kV Line OK | (1,875) | (455) | | | |
| 311 | Electric Transmission | S&E - SPS Line | A.0000303.053 | SPS Priority Defects 69kV Line TX | 302,140 | 73,249 | | | |
| 312 | Electric Transmission | S&E - SPS Line | A.0000303.055 | SPS Priority Defects 69kV Line NM | 39,929 | 9,680 | | | |
| 313 | Electric Transmission | S&E - SPS Line | A.0000303.056 | SPS Priority Defects 115kV Line NM | 46,105 | 11,178 | | | |
| 314 | Electric Transmission | S&E - SPS Line | A.0000303.057 | SPS Priority Defects 115kV Line TX | 302,810 | 73,412 | | | |
| 315 | Electric Transmission | S&E - SPS Line | A.0000303.058 | SPS Priority Defects 230kV Line NM | 19,565 | 4,743 | | | |
| 316 | Electric Transmission | S&E - SPS Line | A.0000303.059 | SPS Priority Defects 230kV Line TX | 47,211 | 11,446 | | | |
| 317 | Electric Transmission | S&E - SPS Line | A.0000303.061 | 345 kV Emergency H Frame Structures | 199,248 | 48,305 | | | |
| 318 | Electric Transmission | S&E - SPS Line | A.0000303.062 | V04 Structure Replacement | 1,092,487 | 264,857 | | | |
| 319 | Electric Transmission | S&E - SPS Line | A.0000303.063 | V04 Structure Replacement ROW | 142,396 | 34,522 | | | |
| 320 | Electric Transmission | S&E - SPS Line | A.0000303.064 | T53 PPR Schld pole Replacement | 1,246,815 | 302,272 | | | |
| 321 | Electric Transmission | S&E - SPS Line | A.0000303.067 | K90 Str Rpl PPR | 739,525 | 179,287 | | | |
| 322 | Electric Transmission | S&E - SPS Line | A.0000303.069 | W07 Str Rpl PPR | 110,362 | 26,756 | | | |
| 323 | Electric Transmission | S&E - SPS Line | A.0000303.083 | T79 Str Rpl PPR | 165,915 | 40,224 | | | |
| 324 | Electric Transmission | S&E - SPS Line | A.0000303.090 | K24 Str Rpl PPR | 693,946 | 168,237 | | | |
| 325 | Electric Transmission | S&E - SPS Line | A.0000303.092 | K86 Str Rpl PPR | 676,056 | 163,900 | | | |
| 326 | Electric Transmission | **S&E - SPS Line Total** | | | **8,710,302** | **2,111,685** | These projects provided for the storm and emergency work orders for the replacement or capital repair of transmission line facilities damaged by inclement weather or natural disasters. | SPS Zonal | SR |
| 327 | Electric Transmission | S&E - SPS Sub | A.0000220.006 | SPS S&E, Sub | 1,061,530 | 257,352 | | | |
| 328 | Electric Transmission | S&E - SPS Sub | A.0000220.007 | SPS 2017 S&E Sub | 86,930 | 21,075 | | | |
| 329 | Electric Transmission | S&E - SPS Sub | A.0000220.018 | SPS NM S&E, Sub | 458,937 | 111,263 | | | |
| 330 | Electric Transmission | S&E - SPS Sub | A.0000220.024 | SPS 2015 KS SE Sub | 13,394 | 3,247 | | | |
| 331 | Electric Transmission | S&E - SPS Sub | A.0000220.026 | SPS 2015 OK SE Sub | 390 | 94 | | | |
| 332 | Electric Transmission | S&E - SPS Sub | A.0000220.038 | PCA Land Lease | 25,986 | 6,300 | | | |
| 333 | Electric Transmission | **S&E - SPS Sub Total** | | | **1,647,166** | **399,331** | These projects provided for the storm and emergency work orders that repaired substation facilities damaged by inclement weather and natural disasters. | SPS Zonal | SR |
| 334 | Electric Transmission | seminole intg 230/115kV xfmr #1 & #2 upgrades | A.0000494.002 | Seminole Xfmr 2 | 67,452 | 16,353 | | | |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020 - Summary of Projects**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) | (H) | (I) |
|---|---|---|---|---|---|---|---|---|---|
| Line No. | Asset Class | WBS Level 1 Project Group Name | WBS Level 2 Number | WBS Level 2 Description | Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company | Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail | WBS Level 1 Project Group Description | Cost Recovery | Project Category |
| 335 | Electric Transmission | **seminole intg 230/115kV xfmr #1 & #2 upgrades Total** | | | **67,452** | **16,353** | This project replaced the two 230/115-kV transformers at Seminole Interchange with two 246/283 MVA units. This project was needed for regional reliability to address the overload of the Seminole 230/115-kV transformers for the outage of the parallel Seminole 230/115-kV transformer. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 336 | Electric Transmission | Short Circuit Interrupting Duty 2016 | A.0000513.004 | Denver City Breaker W970 Replacemen | (253) | (61) | | | |
| 337 | Electric Transmission | Short Circuit Interrupting Duty 2016 | A.0000513.005 | Denver City Breaker W900 Replacemen | 3,414 | 828 | | | |
| 338 | Electric Transmission | **Short Circuit Interrupting Duty 2016 Total** | | | **3,162** | **767** | This project replaced various transmission circuit breakers where the transmission system had a higher available fault current than the interrupting rating of these particular circuit breakers. | SPS Zonal | RE |
| 339 | Electric Transmission | Sierra Substation (RIAC Conversion) | A.0001300.009 | Reterm 115KV Roswell City | (1,131) | (274) | | | |
| 340 | Electric Transmission | Sierra Substation (RIAC Conversion) | A.0001300.013 | Roswell Intg 115KVBkr One Half | 4,016 | 974 | | | |
| 341 | Electric Transmission | Sierra Substation (RIAC Conversion) | A.0001300.014 | Wreckout Rebuild 115KV LineT24 | (5,589) | (1,355) | | | |
| 342 | Electric Transmission | Sierra Substation (RIAC Conversion) | A.0001300.022 | Relay Upgr Roswell City Rosw Intg | (4,919) | (1,193) | | | |
| 343 | Electric Transmission | Sierra Substation (RIAC Conversion) | A.0001300.024 | Z09 Removal from S Main St to RIAC | 1,884 | 457 | | | |
| 344 | Electric Transmission | Sierra Substation (RIAC Conversion) | A.0001300.025 | Wreckout Rebuild Z09 Dble Ckt | (1,883) | (457) | | | |
| 345 | Electric Transmission | **Sierra Substation (RIAC Conversion) Total** | | | **(7,622)** | **(1,848)** | This project constructed a new 115-kV distribution substation and the conversion of a 2-mile, 69-kV transmission line to 115-kV operation. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 346 | Electric Transmission | Soncy Dist. Transformer Conv. | A.0000616.001 | Soncy Dist. Transformer Conv. | 53,053 | 12,862 | | | |
| 347 | Electric Transmission | Soncy Dist. Transformer Conv. | A.0000616.002 | 115kV Line Tap to Soncy Line | (2,820) | (684) | | | |
| 348 | Electric Transmission | Soncy Dist. Transformer Conv. | A.0000616.006 | 69kV Line Tap to Soncy Line | 5,932 | 1,438 | | | |
| 349 | Electric Transmission | **Soncy Dist. Transformer Conv. Total** | | | **56,165** | **13,616** | This project converted the 69-kV Soncy Substation and transmission line to 115-kV operation. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 350 | Electric Transmission | Spearman Breaker Replacements | A.0001421.004 | Spearman Land | 20,660 | 5,009 | | | |
| 351 | Electric Transmission | **Spearman Breaker Replacements Total** | | | **20,660** | **5,009** | This project replaced two 69-kV circuit breakers, protective relay systems, communications systems, and associated equipment at Spearman Interchange. Some of this equipment had failed and the rest of the equipment was at the end of its useful life. North Plains Electric Cooperative was financially responsible for the replacement of one of the 69-kV breakers and paid for its replacement. | SPS Zonal/Customer Funded | SR |
| 352 | Electric Transmission | SPIRe | A.0000996.004 | SPS SPIRe | 255 | 62 | | | |
| 353 | Electric Transmission | **SPIRe Total** | | | **255** | **62** | SPS's System Protection Infrastructure Replacement (SPIRe) program sponsors projects that provide compliance with NERC Standard PRC-005 requirements. This project upgraded the 230/115-kV transformer differential relaying and associated equipment at the East Plant Substation. This project is one part of an effort to modernize the relaying systems that protect SPS's Bulk Electric System (BES). | SPS Zonal | SR |
| 354 | Electric Transmission | SPS Asset Sales | A.0000886.008 | Asset Sale to Oncor | (41,883) | (10,154) | | | |
| 355 | Electric Transmission | **SPS Asset Sales Total** | | | **(41,883)** | **(10,154)** | This project sold SPS assets to Sharyland Utilities and sold a 69-kV line to Lea County Electric Cooperative. | SPS Zonal | OT |
| 356 | Electric Transmission | SPS Facility Rating Mitigation | A.0001041.006 | T71 Terminal upgrade Carlisle | (3,473) | (842) | | | |
| 357 | Electric Transmission | SPS Facility Rating Mitigation | A.0001041.007 | T71 Terminal upgrade Yuma | 21,015 | 5,095 | | | |
| 358 | Electric Transmission | SPS Facility Rating Mitigation | A.0001041.008 | K73 Terminal Upgrade Grapevine | 87,283 | 21,160 | | | |
| 359 | Electric Transmission | SPS Facility Rating Mitigation | A.0001041.009 | K53 Term Upgrade Grapevine Nichols | 111,186 | 26,956 | | | |
| 360 | Electric Transmission | **SPS Facility Rating Mitigation Total** | | | **216,011** | **52,369** | This project upgraded the terminal equipment at various substations so that their ratings match or exceed the ratings of the terminal's associated transmission line. This project was needed to prevent the operational issues caused when the loading on these substation terminals exceeded their rating, requiring the transmission system to be reconfigured to shift load to other transmission lines. This caused sub-optimal operation of the transmission system and increased costs to deliver energy to customers. | SPS Zonal | RE |
| 361 | Electric Transmission | SPS Group 1 Switch Replacements | A.0000153.006 | V02 Switch 2915 Replacement | (276) | (67) | | | |
| 362 | Electric Transmission | **SPS Group 1 Switch Replacements Total** | | | **(276)** | **(67)** | These projects replaced old high-maintenance or broken switches with new switches. | SPS Zonal | SR |
| 363 | Electric Transmission | SPS Line Capacity | A.0000427.001 | SPS Line Capacity Line | 3,752 | 910 | | | |
| 364 | Electric Transmission | SPS Line Capacity | A.0000427.014 | K21 Clearance Violations | 3,268 | 792 | | | |
| 365 | Electric Transmission | SPS Line Capacity | A.0000427.016 | W14 Y98 Clearance Violations | 32,669 | 7,920 | | | |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020 - Summary of Projects**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) | (H) | (I) |
|---|---|---|---|---|---|---|---|---|---|
| Line No. | Asset Class | WBS Level 1 Project Group Name | WBS Level 2 Number | WBS Level 2 Description | Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company | Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail | WBS Level 1 Project Group Description | Cost Recovery | Project Category |
| 366 | Electric Transmission | **SPS Line Capacity Total** | | | **39,689** | **9,622** | This project surveyed and verified the line ratings of the SPS transmission system for lines above 100-kV. This project is a required response to a North American Electric Reliability Corporation ("NERC") Facility Ratings Alert, issued October 7, 2010 and updated on November 30, 2010, requiring transmission owners to verify that transmission line ratings are based on actual field conditions and, if not, perform necessary activities to base ratings on actual field conditions. The survey was done using Light Detection And Ranging ("LiDAR") technology that uses a laser to make highly accurate distance measurements. This project provided for the survey work and any mitigations that were needed to raise the facility capacity ratings if the field results were less than expected. | SPS Zonal | SR |
| 367 | Electric Transmission | SPS Major Line Refurbishment | A.0000469.015 | SPS Major Line Refurb 69kV TX | (118,900) | (28,826) | | | |
| 368 | Electric Transmission | **SPS Major Line Refurbishment Total** | | | **(118,900)** | **(28,826)** | This project funds major transmission line refurbishments which include projects with a large quantity of end of life replacements of defective transmission line components, predominately crossarm and pole/structure replacements. These "defective" components are identified as showing signs of deterioration where failure is likely in a minor or major storm. Major line refurbishment projects also include any major projects that do not involve complete rebuilds of sections of lines, including reconductor projects, re-insulation projects, complete structure replacements (without reconductoring), and so forth. This work was done on several transmission lines as part of a multi-year program. | SPS Zonal | SR |
| 369 | Electric Transmission | SPS SPE Fault Clearing Relay Rplmnts | A.0001167.004 | TUCO SPE relay Upgrades TX | 1,831,424 | 444,002 | | | |
| 370 | Electric Transmission | SPS SPE Fault Clearing Relay Rplmnts | A.0001167.033 | Indiana V15 SPE Relay Upgrades TX | 804,039 | 194,927 | | | |
| 371 | Electric Transmission | SPS SPE Fault Clearing Relay Rplmnts | A.0001167.034 | Cochran V56 Line SPE Relay Upgrades | 863,980 | 209,459 | | | |
| 372 | Electric Transmission | **SPS SPE Fault Clearing Relay Rplmnts Total** | | | **3,499,443** | **848,389** | This project replaced existing protective relaying systems to eliminate long clearing times inherent in these existing relaying systems. Replacement of these relaying systems addresses the compliance requirements of NERC TPL-001-4 and will eliminate the long clearing times, increasing the reliability of the system, increasing crew safety during hot line clearances, and preventing possible damage to equipment. | SPS Zonal | RE |
| 373 | Electric Transmission | SPS Sub Communication Network Group 1 | A.0000795.001 | SPS Sub Comm Network Group 1 L | 923,507 | 223,891 | | | |
| 374 | Electric Transmission | SPS Sub Communication Network Group 1 | A.0000795.002 | SPS Sub Comm Network Group 1 S | 537,859 | 130,396 | | | |
| 375 | Electric Transmission | SPS Sub Communication Network Group 1 | A.0000795.009 | Kirby Fiber Ring Sub | 201,982 | 48,968 | | | |
| 376 | Electric Transmission | SPS Sub Communication Network Group 1 | A.0000795.010 | Kirby Jericho T-52 115kV Line | 445,493 | 108,003 | | | |
| 377 | Electric Transmission | **SPS Sub Communication Network Group 1 Total** | | | **2,108,841** | **511,258** | These projects provided for the construction of a fiber optics communication infrastructure within the SPS region. The first leg of a multi-year effort started in the Amarillo area by installing Optical Ground Wire ("OPGW") in the static position on selected transmission lines to create a redundant fiber optic communication ring with access to the Amarillo Transmission Operations Center. This ring provides redundant protection paths for the line sections on which the OPGW is installed as well as provides redundant paths for the Supervisory Control And Data Acquisition ("SCADA") system. | SPS Zonal | OT |
| 378 | Electric Transmission | SPS Switch Replace | A.0000514.002 | Plant X 115kV Switch Replacement | 2,119,676 | 513,884 | | | |
| 379 | Electric Transmission | SPS Switch Replace | A.0000514.004 | Carlsbad 115kV Switch Replacement | 4,606,689 | 1,116,824 | | | |
| 380 | Electric Transmission | SPS Switch Replace | A.0000514.006 | Pecos Sub Relay Upg-Carlsbad | 245,510 | 59,520 | | | |
| 381 | Electric Transmission | SPS Switch Replace | A.0000514.008 | Denver City Sw W932/982/991/992 | 29 | 7 | | | |
| 382 | Electric Transmission | **SPS Switch Replace Total** | | | **6,971,903** | **1,690,236** | This project replaced switches with cap and pin insulators because these cap and pin insulators have a long history of high failure rates. The new switches installed use a better design of insulator and will provide much improved reliability over the switches they replaced. | SPS Zonal | SR |
| 383 | Electric Transmission | SPS Trench CT/PT Replacement | A.0000094.001 | Noble Substation 345kV | 84 | 20 | | | |
| 384 | Electric Transmission | **SPS Trench CT/PT Replacement Total** | | | **84** | **20** | This project replaced the current transformers and potential transformers for metering for a new wind farm that did not materialize. The charges for this work were moved from the capital work order to an expense account; however, an excess of $84.03 more than the actual charges was moved to the expense account. This capital addition amount will zero out the negative balance in the capital account. | SPS Zonal | GI |
| 385 | Electric Transmission | SPS Walkemeyer 345 115 280 MVA SUB | A.0001310.002 | Reterm 345KV Line Old J7 | (143,802) | (34,863) | | | |
| 386 | Electric Transmission | SPS Walkemeyer 345 115 280 MVA SUB | A.0001310.003 | Walkemeyer 345/115 Sub | 2,544 | 617 | | | |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020 - Summary of Projects**

| | (A) | (B) | (C) | (D) | (E) | (F) | (G) | (H) | (I) |
|---|---|---|---|---|---|---|---|---|---|
| **Line No.** | **Asset Class** | **WBS Level 1 Project Group Name** | **WBS Level 2 Number** | **WBS Level 2 Description** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company** | **Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail** | **WBS Level 1 Project Group Description** | **Cost Recovery** | **Project Category** |
| 387 | Electric Transmission | **SPS Walkemeyer 345 115 280 MVA SUB Total** | | | **(141,258)** | **(34,246)** | This project constructed the new Carpenter Switching Station (formerly Stevens County) which is located on the 345-kV line from Hitchland Interchange to Finney Switching Station. This project was needed to address low voltages in the area. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 388 | Electric Transmission | sundown-amoco switch 230kV terminals | A.0000663.001 | Sundown Sub, Amoco Terminal | 97,570 | 23,654 | | | |
| 389 | Electric Transmission | sundown-amoco switch 230kV terminals | A.0000663.002 | Amoco Sub, Sundown Terminal | 57,605 | 13,966 | | | |
| 390 | Electric Transmission | sundown-amoco switch 230kV terminals | A.0000663.005 | K03 Structure Upgrade | 8,315 | 2,016 | | | |
| 391 | Electric Transmission | **sundown-amoco switch 230kV terminals Total** | | | **163,490** | **39,636** | This project upgraded the 230-kV Sundown and Amoco station line terminals and increased the transmission line clearance of the 230-kV line from Amoco to Sundown to provide a summer emergency rating of 547 MVA for this line segment. The system limitation caused by this line was identified in SPP's 2016 Near Term study. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 392 | Electric Transmission | T-30 Terminal Upgrades | A.0001042.002 | T30 Structure Replacement | 140,280 | 34,009 | | | |
| 393 | Electric Transmission | T-30 Terminal Upgrades | A.0001042.004 | T30 Structures RPLMT Full Cond TX | 73,575 | 17,837 | | | |
| 394 | Electric Transmission | **T-30 Terminal Upgrades Total** | | | **213,854** | **51,846** | This project upgraded the existing T30 substation terminal elements at Hockley County Interchange and replaced eight transmission structures on the Hockley County Interchange to Lamb County Interchange line T30 to achieve a summer emergency rating of 143 MVA per SPP. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 395 | Electric Transmission | Tierra Blanca 115kV Substation | A.0001044.010 | Tierra Blanca 115kV Sub Land | 930,510 | 225,589 | | | |
| 396 | Electric Transmission | **Tierra Blanca 115kV Substation Total** | | | **930,510** | **225,589** | This project installed a new 115-kV substation named Tierra Blanca located approximately one-half mile south of Deaf Smith County Interchange and replaced the relay packages on the remote end line terminals of Deaf Smith Interchange, Hereford Interchange, Northeast Hereford Substation, Castro County Interchange and Canyon West Substation. This substation will address reliability concerns if specific identified contingencies were to occur and will provide additional capacity for future load growth in the area. | SPS Zonal | RE |
| 397 | Electric Transmission | Tuco Intg 345/230kV Auto #1 upgrade | A.0000564.002 | Tuco 345 Trsf Rplmnt Sub Portion | 2,205,613 | 534,719 | | | |
| 398 | Electric Transmission | **Tuco Intg 345/230kV Auto #1 upgrade Total** | | | **2,205,613** | **534,719** | This project upgraded the 345/230-kV transformer at TUCO Interchange. This project was one of the shared network upgrades required for the connection of generation projects approved by SPP in their DISIS 2014-002 study. | Customer Funded | GI |
| 399 | Electric Transmission | TUCO Mooreland (Woodward) | A.0000417.015 | TUCO-Mooreland Woodward TX ROW 2017 | 10,084 | 2,445 | | | |
| 400 | Electric Transmission | TUCO Mooreland (Woodward) | A.0000665.005 | TUCO Mooreland Woodward TX RO | 258,822 | 62,748 | | | |
| 401 | Electric Transmission | **TUCO Mooreland (Woodward) Total** | | | **268,906** | **65,192** | This project constructed a single-circuit 345-kV transmission line between the TUCO Substation, near Lubbock, Texas, and Oklahoma Gas & Electric's ("OG&E") Woodward Substation near Woodward, Oklahoma. SPS constructed the line between the TUCO Substation and OG&E's Border Substation near the Texas and Oklahoma border and OG&E constructed the line from the Border Substation to the Woodward Substation. This project was identified in the SPP's Balanced Portfolio Economic Studies. SPP issued SPS an NTC for this project. | SPP Balanced Portfolio | EC/TI |
| 402 | Electric Transmission | TUCO S 230 115 Xfmr Upgrade | A.0001316.001 | TUCO S. 230/115 Xfmr Upgrade | 1,080 | 262 | | | |
| 403 | Electric Transmission | **TUCO S 230 115 Xfmr Upgrade Total** | | | **1,080** | **262** | This project replaced the existing 230/115-kV, 250 MVA circuit 1 autotransformer at TUCO Substation with a new 284 MVA autotransformer. This project was needed to achieve a minimum emergency rating of 273 MVA for both the circuit 1 and circuit 2, 230/115-kV autotransformers at TUCO Substation. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 404 | Electric Transmission | TxDot Relocate | A.0001383.002 | TxDot T 37 Relocate ROW | 1,187,912 | 287,992 | | | |
| 405 | Electric Transmission | **TxDot Relocate Total** | | | **1,187,912** | **287,992** | This project replaced transmission structures on several transmission lines to clear the right of way for a Texas Department of Transportation (TxDOT) project to construct Loop 335 on the west side of Amarillo, Texas. SPS was obligated to clear the new right of way for this state highway project. TxDOT will reimburse SPS for a portion of the project costs. | SPS Zonal/Customer Funded | OT |
| 406 | Electric Transmission | Unserviceable - Breakers - SPS | A.0000287.035 | Potash 4920 Breaker Rplmnt | (7,918) | (1,920) | | | |
| 407 | Electric Transmission | Unserviceable - Breakers - SPS | A.0000798.012 | Cole Rpl Breaker 0845 | (387,136) | (93,855) | | | |

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**Transmission Capital Additions**
**October 1, 2019 through September 30, 2020 - Summary of Projects**

| Line No. | (A) Asset Class | (B) WBS Level 1 Project Group Name | (C) WBS Level 2 Number | (D) WBS Level 2 Description | (E) Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company | (F) Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail | (G) WBS Level 1 Project Group Description | (H) Cost Recovery | (I) Project Category |
|---|---|---|---|---|---|---|---|---|---|
| 408 | Electric Transmission | **Unserviceable - Breakers - SPS Total** | | | **(395,054)** | **(95,775)** | This project replaced circuit breakers that failed tests and were not performing correctly or had become under-rated due to transmission or generation additions. This work was done at multiple substations as part of a multi-year program. | SPS Zonal | SR |
| 409 | Electric Transmission | Unserviceable - Relays - SPS | A.0000589.011 | Roswell Int 115kV Buss Diff | (24,837) | (6,021) | | | |
| 410 | Electric Transmission | **Unserviceable - Relays - SPS Total** | | | **(24,837)** | **(6,021)** | This project replaced relays determined to be unserviceable during maintenance or testing activities. This work was done at multiple substations as part of a multi-year program. | SPS Zonal | SR |
| 411 | Electric Transmission | V24 Terry & Wolfforth Terminal Upgrades | A.0001244.001 | Terry Co Sub V24 Term Upgrade | 356,236 | 86,364 | | | |
| 412 | Electric Transmission | V24 Terry & Wolfforth Terminal Upgrades | A.0001244.003 | V24 T Line | 183,185 | 44,411 | | | |
| 413 | Electric Transmission | **V24 Terry & Wolfforth Terminal Upgrades Total** | | | **539,421** | **130,775** | This project upgraded the existing V24 substation terminal elements at both Wolfforth Interchange and Terry County Interchange and replaced five transmission structures to achieve a summer emergency rating of 230 MVA per SPP. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 414 | Electric Transmission | V55 Terminal Upgrades | A.0001147.002 | V55 Terry Co Terminal | 351,384 | 85,188 | | | |
| 415 | Electric Transmission | **V55 Terminal Upgrades Total** | | | **351,384** | **85,188** | This project upgraded the existing V55 substation terminal elements at Terry County Interchange to achieve a summer emergency rating of 175 MVA per SPP. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 416 | Electric Transmission | V63 Reconductor Etter Rural - Moore Co 115kV Line | A.0001050.003 | Upgr Etter Rural 115kV (V63) Term t | 275 | 67 | | | |
| 417 | Electric Transmission | **V63 Reconductor Etter Rural - Moore Co 115kV Line Total** | | | **275** | **67** | This project replaced the small conductor on a 2 mile segment of transmission line V63 and replaced 5 line structures in that same two mile line segment to achieve a minimum summer emergency rating of 240 MVA for transmission line V63 per SPP. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 418 | Electric Transmission | W26 Reconductor Cunningham-Monument Tap | A.0000635.001 | W-26 Cunningham-Monument Tap wreck | 3,825,158 | 927,354 | | | |
| 419 | Electric Transmission | W26 Reconductor Cunningham-Monument Tap | A.0000635.002 | Cunningham W-26 line terminal upgra | 293,852 | 71,240 | | | |
| 420 | Electric Transmission | W26 Reconductor Cunningham-Monument Tap | A.0000635.004 | W26 Cunningham Monument Tap ROW | 4,480 | 1,086 | | | |
| 421 | Electric Transmission | **W26 Reconductor Cunningham-Monument Tap Total** | | | **4,123,489** | **999,680** | This project rebuilt the 6.5-mile, 115-kV line from Cunningham Generation Plant to Monument Substation Tap to achieve a minimum summer emergency rating of 184 MVA to address regional reliability issues. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 422 | Electric Transmission | W40 Reconductor Canyon West-Deaf Smith | A.0001319.009 | Canyon West Sub W40 Term Upgr | 131,498 | 31,880 | | | |
| 423 | Electric Transmission | W40 Reconductor Canyon West-Deaf Smith | A.0001319.011 | Deaf Smith W40 Term Upgr | (4,185) | (1,015) | | | |
| 424 | Electric Transmission | **W40 Reconductor Canyon West-Deaf Smith Total** | | | **127,313** | **30,865** | This project wrecked out and rebuilt 26 miles of 115-kV transmission line running from Canyon West Substation to Deaf Smith Interchange. This project was needed to eliminate the overloading of this segment during certain system conditions. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 425 | Electric Transmission | W71 Terminal Upgrades at Coulter | A.0001054.001 | Coulter Switch Replacemnts | 256,159 | 62,102 | | | |
| 426 | Electric Transmission | **W71 Terminal Upgrades at Coulter Total** | | | **256,159** | **62,102** | This project upgraded the existing W71 substation terminal elements at both Coulter Interchange and Puckett Substation to achieve a summer emergency rating of 175 MVA per SPP. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 427 | Electric Transmission | W77 Canyon East Tap to Arrowhead | A.0002055.001 | W77 Canyon East Tap to Arrowhe | 6,161,479 | 1,493,760 | | | |
| 428 | Electric Transmission | W77 Canyon East Tap to Arrowhead | A.0002055.003 | Wreckout and Rebuild ROW | 143,862 | 34,877 | | | |
| 429 | Electric Transmission | **W77 Canyon East Tap to Arrowhead Total** | | | **6,305,341** | **1,528,638** | This project rebuilt 115-kV line W77 from Canyon East tap to Arrowhead substation to provide a higher line capacity. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 430 | Electric Transmission | W77 T75 Reconductor Arrowhead to Randall | A.0001325.006 | W77-T75Recond ArrowheadRandall | (151,006) | (36,609) | | | |
| 431 | Electric Transmission | W77 T75 Reconductor Arrowhead to Randall | A.0001325.007 | W77 Reconductor Arrowhead to Randal | 3,578 | 867 | | | |
| 432 | Electric Transmission | W77 T75 Reconductor Arrowhead to Randall | A.0001325.011 | K62 Line crossing Upgrade | (37,942) | (9,199) | | | |
| 433 | Electric Transmission | **W77 T75 Reconductor Arrowhead to Randall Total** | | | **(185,370)** | **(44,940)** | This project rebuilt approximately 3.5 miles of double-circuit 115-kV transmission line, W77 (Canyon-West to Randall) and T-75 (Osage to Amarillo South) with phase conductors with a minimum of 240 MVA Summer Emergency rating. This project mitigates the overload of the Randall–Canyon East 115-kV line for various outages like the Bushland Interchange to Deaf Smith County Interchange 230-kV. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 434 | Electric Transmission | Western St Sub (TAM) | A.0001137.001 | U-31 reterm Western St Sub | 212,890 | 51,612 | | | |
| 435 | Electric Transmission | Western St Sub (TAM) | A.0001137.002 | U-30 reterm Western St Sub | 170,828 | 41,415 | | | |

**Southwestern Public Service Company**

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|---|---|---|---|---|---|---|---|---|---|
| 436 | Electric Transmission | Western St Sub (TAM) | A.0001137.003 | Western St Sub U-30 terminal (Coult | 1,384,137 | 335,564 | | | |
| 437 | Electric Transmission | Western St Sub (TAM) | A.0001137.004 | Western St Sub U-31 terminal (S Geo | 745,491 | 180,733 | | | |
| 438 | Electric Transmission | Western St Sub (TAM) | A.0001137.005 | SOGE, U-31 terminal | 107,098 | 25,964 | | | |
| 439 | Electric Transmission | Western St Sub (TAM) | A.0001137.006 | CLTR, U-30 terminal | 151,751 | 36,790 | | | |
| 440 | Electric Transmission | **Western St Sub (TAM) Total** | | | **2,772,193** | **672,078** | This project installed a 28 MVA, 115/13.2-kV distribution substation named Western Street located in Amarillo, Texas. This substation was needed to serve new load in the area and to provide contingency back-up capacity for the other distribution substations in the area. | SPS Zonal | LI |
| 441 | Electric Transmission | Xfmr Spare Security SPS | A.0000776.003 | Spare 230 115 250 MVA | 2,349,257 | 569,543 | | | |
| 442 | Electric Transmission | **Xfmr Spare Security SPS Total** | | | **2,349,257** | **569,543** | This project purchased spare transmission-voltage transformers to provide reserve units in the event of a failure of one of the numerous similar transformers in service in the SPS service area. | SPS Zonal | SR |
| 443 | Electric Transmission | Yoakum 115kV BFR | A.0000658.001 | Yoakum | (48,109) | (11,663) | | | |
| 444 | Electric Transmission | **Yoakum 115kV BFR Total** | | | **(48,109)** | **(11,663)** | This project installed Breaker Failure Relay (BFR) protection on all the 115-kV breakers at Yoakum Co. Interchange. Installing BFR protection reduces the clearing time of the fault during a stuck breaker event, which has been determined to cause major generation and transmission system impacts for certain breaker failure events. | SPS Zonal | RE |
| 445 | Electric Transmission | Yoakum Intg. 230/115 Transformer Upgrades | A.0001326.001 | Yoakum 230/115 Xfmr 1 Upgrade | (6,708) | (1,626) | | | |
| 446 | Electric Transmission | Yoakum Intg. 230/115 Transformer Upgrades | A.0001326.003 | Yoakum 230/115 Transformer 2 Upgrad | (395,023) | (95,767) | | | |
| 447 | Electric Transmission | **Yoakum Intg. 230/115 Transformer Upgrades Total** | | | **(401,731)** | **(97,394)** | This project replaced the two existing 230/115-kV, 150 MVA autotransformers at Yoakum County Interchange with two new 250 MVA transformers. This project was needed to prevent the overloading of one of the 150 MVA transformers for the contingency of the other 150 MVA transformer being unavailable. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 448 | Electric Transmission | Z18 Tuco Plainview Rebuild | A.0000538.008 | Z18 Tuco-Plainview Line | 650,671 | 157,746 | | | |
| 449 | Electric Transmission | **Z18 Tuco Plainview Rebuild Total** | | | **650,671** | **157,746** | This project was for a complete wreck out and rebuild of 18.1 miles of 4/0 ACSR line from TUCO Substation to Hale County Substation using 477 ACSR conductors and new structures. This project was needed because of the poor physical condition of the existing line which was causing reliability issues. The small conductor was replaced with larger conductor to more closely match the higher conductor rating of the remaining portion of line Z18. | SPS Zonal | SR |
| 450 | Electric Transmission | Z66 Booker/Wade Conversion | A.0000646.002 | Perryton Substation Sub | 324,133 | 78,581 | | | |
| 451 | Electric Transmission | Z66 Booker/Wade Conversion | A.0000646.020 | Perryton South Sub Removal | 785 | 190 | | | |
| 452 | Electric Transmission | **Z66 Booker/Wade Conversion Total** | | | **324,917** | **78,771** | This project removed the existing 69-kV line Z-66 (Perryton to Booker) and replaced it with a new 115-kV transmission line. It also converted the existing Wade and Booker substations to 115-kV operation. The new source for these substations is the Ochiltree Substation 115-kV bus. | SPS Zonal | RE |
| 453 | **Electric Transmission Total** | | | | **$ 240,700,716** | **$ 58,354,370** | | | |
| 454 | Electric General | Amarillo West Upgrade | A.0000781.019 | Outpost Comm | 10 | 3 | | | |
| 455 | Electric General | **Amarillo West Upgrade Total** | | | **10** | **3** | This project provided for new infrastructure to provide service for Amarillo's expansion to the west. | SPS Zonal | RE |
| 456 | Electric General | Atoka-Eagle Creek | A.0000540.017 | Atoka Comm Sub Portion Comm | (3,502) | (1,053) | | | |
| 457 | Electric General | **Atoka-Eagle Creek Total** | | | **(3,502)** | **(1,053)** | This project constructed a 115-kV transmission line between the Atoka and Eagle Creek Substations near Artesia, New Mexico. The project is needed to address low voltages in the area. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 458 | Electric General | Cochran Co - Whiteface 115kv | A.0000194.006 | Cochran RTU, Comm | 56,301 | 16,925 | | | |
| 459 | Electric General | Cochran Co - Whiteface 115kv | A.0000194.007 | Cochran Comm Equiup | 8,632 | 2,595 | | | |
| 460 | Electric General | **Cochran Co - Whiteface 115kv Total** | | | **64,933** | **19,520** | This project reconductored the 4.4 mile segment of the 69-kV transmission line from Cochran County Substation to structure number 55 at Whiteface Tap. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 461 | Electric General | Deaf Smith 230kV Breaker Add | A.0000916.008 | Bushland Comm | 11,592 | 3,485 | | | |
| 462 | Electric General | **Deaf Smith 230kV Breaker Add Total** | | | **11,592** | **3,485** | This project created a ring bus on the 230-kV side of the Deaf Smith Substation. | SPS Zonal | RE |
| 463 | Electric General | Eddy County Dbl Bus Dbl Brker 230kV | A.0000290.008 | Cunningham Intg Upgr Eddy Term Comm | (59,828) | (17,986) | | | |
| 464 | Electric General | Eddy County Dbl Bus Dbl Brker 230kV | A.0000290.009 | Seven Rivers Upgr Eddy Term COMM | (112,313) | (33,764) | | | |

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| Line No. | (A) Asset Class | (B) WBS Level 1 Project Group Name | (C) WBS Level 2 Number | (D) WBS Level 2 Description | (E) Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company | (F) Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail | (G) WBS Level 1 Project Group Description | (H) Cost Recovery | (I) Project Category |
|---|---|---|---|---|---|---|---|---|---|
| 465 | Electric General | **Eddy County Dbl Bus Dbl Brker 230kV Total** | | | **(172,140)** | **(51,749)** | This project reconfigured the existing Eddy County Interchange 230-kV bus from a main and transfer bus design to a double bus-double breaker arrangement. This project was required to meet long-term firm transmission service requests in the SPP Aggregate Facility Study SPP-2013-AG3-AFS-6. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 466 | Electric General | ELR - Relay - SPS | A.0000401.051 | East Plt 2K50 Relay Rplmnt Comm | 29,482 | 8,863 | | | |
| 467 | Electric General | ELR - Relay - SPS | A.0000401.053 | Blackhawk 1H70 Relay Upg COMM | 12,945 | 3,892 | | | |
| 468 | Electric General | **ELR - Relay - SPS Total** | | | **42,427** | **12,755** | The term "ELR" stands for End of Life Replacement. This project replaced protective relays that had reached the end of their useful life. This work was done at several substations as part of a multi-year program to replace relays that are obsolete, for which parts are no longer available and require significant operations and maintenance spend to keep them in service. | SPS Zonal | SR |
| 469 | Electric General | Facility Upgrade Ancillary Equip | A.0001273.014 | Coulter RTU Replacement | 332,015 | 99,812 | | | |
| 470 | Electric General | **Facility Upgrade Ancillary Equip Total** | | | **332,015** | **99,812** | This project provided for the replacement of failing switches, jumpers and other ancillary equipment. This work was done at several substations as part of a multi-year program to replace equipment that is obsolete, for which parts are no longer available, or require significant operations and maintenance spend to keep it in service. | SPS Zonal | SR |
| 471 | Electric General | Fault Recorders - SPS | A.0000556.017 | Jones #1 DFR | 286,639 | 86,170 | | | |
| 472 | Electric General | Fault Recorders - SPS | A.0000556.020 | Tuco A&B DFR | 330,059 | 99,223 | | | |
| 473 | Electric General | Fault Recorders - SPS | A.0000556.022 | Eddy County 115kV DFR NM | 304,721 | 91,606 | | | |
| 474 | Electric General | **Fault Recorders - SPS Total** | | | **921,419** | **277,000** | This project installed fault recorders for disturbance monitoring at substations. | SPS Zonal | OT |
| 475 | Electric General | GEN 2011-022 (Firewheel) | A.0000706.002 | Hitchland Firewheel Comm | (5,067) | (1,523) | | | |
| 476 | Electric General | **GEN 2011-022 (Firewheel) Total** | | | **(5,067)** | **(1,523)** | This project constructed a new 345-kV terminal at Hitchland Interchange to provide an interconnection point for a new wind farm. | Customer Funded | GI |
| 477 | Electric General | GEN 2012-020 Hale Co Wind, 478MW | A.0000902.002 | TUCO RTU Addition Comm | (115,625) | (34,759) | | | |
| 478 | Electric General | **GEN 2012-020 Hale Co Wind, 478MW Total** | | | **(115,625)** | **(34,759)** | This project constructed a new 230-kV terminal at TUCO Interchange for the interconnection of the Hale County wind farm. | Customer Funded | GI |
| 479 | Electric General | GEN-2015-014 Lost Draw Substation | A.0000350.004 | Lost Draw Comm | (151,366) | (45,504) | | | |
| 480 | Electric General | **GEN-2015-014 Lost Draw Substation Total** | | | **(151,366)** | **(45,504)** | This project constructed the new Lost Draw Switching Station to provide a 115-kV interconnection point for the Wildcat Ranch wind farm. | Customer Funded | GI |
| 481 | Electric General | General Furniture | A.0005014.084 | New Mexico Substation Furnitur | 6,792 | 2,042 | | | |
| 482 | Electric General | General Furniture | A.0005014.109 | Gen Plt Ofc Furn TX | 3,465 | 1,042 | | | |
| 483 | Electric General | **General Furniture Total** | | | **10,257** | **3,083** | This project purchased furniture, typically a desk and chairs, for control houses located in transmission substations. | SPS Zonal | OT |
| 484 | Electric General | Ink Basin Substation | A.0000481.003 | New Ink Basin 230/115kV Substation | 2,701 | 812 | | | |
| 485 | Electric General | **Ink Basin Substation Total** | | | **2,701** | **812** | This project constructed a new 230/115-kV, three breaker ring bus interchange in the south-central part of Yoakum County, Texas. Existing transmission circuits 115-kV V80 and 230-kV K93 were routed in to and out of the new interchange. A new 230/115-kV, 250 MVA, transformer provides a new source of power for the 115-kV. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 486 | Electric General | Interconnection Milwaukee | A.0001079.007 | Frankford Substation Communication | 31 | 9 | | | |
| 487 | Electric General | Interconnection Milwaukee | A.0001079.008 | Quincy Substation Communication | 456 | 137 | | | |
| 488 | Electric General | **Interconnection Milwaukee Total** | | | **487** | **146** | This project installed the new SPS Quincy Switching Station to provide 115-kV service to South Plains Electric Cooperative to serve new load from their new Milwaukee Substation. | SPS Zonal | LI |
| 489 | Electric General | Interconnection XTO Mahoney | A.0001008.004 | Inst 230kV Sw Station Comm | 7,798 | 2,344 | | | |
| 490 | Electric General | **Interconnection XTO Mahoney Total** | | | **7,798** | **2,344** | This project installed the new Mahoney Switching Station to provide a new 230-kV service point to XTO. The customer paid for a portion of this project. | SPS Zonal/Customer Funded | LI |
| 491 | Electric General | LP L Relay Upgrades | A.0001067.003 | Lubbock East Communication | 179 | 54 | | | |
| 492 | Electric General | **LP L Relay Upgrades Total** | | | **179** | **54** | This project upgraded the line protection relays, breaker controls and communication architecture at SPS's Lubbock East and Lubbock South Interchanges on the terminals providing 230-kV service to Lubbock Power and Light (LP&L). | SPS Zonal | SR |
| 493 | Electric General | Mustang-Shell CO2 115kV Line | A.0000979.006 | Mustang Communications Sub Por | (17,661) | (5,309) | | | |

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|---|---|---|---|---|---|---|---|---|---|
| 494 | Electric General | Mustang-Shell CO2 115kV Line | A.0000979.009 | Shell Sub Comm Sub Portion S | 31,441 | 9,452 | | | |
| 495 | Electric General | **Mustang-Shell CO2 115kV Line Total** | | | **13,780** | **4,143** | This project constructed a new 115-kV transmission line between the Mustang and Shell CO2 substations. The project was needed to address overloads in the area. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 496 | Electric General | NE Hereford to New Center St. 115 kV Line | A.0000296.009 | NE Hereford Comm | (1,474) | (443) | | | |
| 497 | Electric General | **NE Hereford to New Center St. 115 kV Line Total** | | | **(1,474)** | **(443)** | This project constructed a new 115-kV line from Northeast Hereford Interchange to a new distribution substation named New Center St. (La Plata) to allow the 69-kV substation to be removed from the 69-kV Hereford Loop. This allowed the Hereford Interchange and the Northeast Hereford Interchange 115/69-kV transformers to stay under their ratings. This project was needed for system reliability. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 498 | Electric General | OPIE 2 Kiowa-Road Runner 345kV Conv_PID 30639 | A.0000424.094 | Road Runner 345kV Sub Comms_UI | 41,475 | 12,468 | | | |
| 499 | Electric General | **OPIE 2 Kiowa-Road Runner 345kV Conv_PID 30639 Total** | | | **41,475** | **12,468** | This project installed new 345/115-kV transformers at the Kiowa and Roadrunner substations, and constructed a new 345/115-kV double circuit transmission line between the Kiowa and Potash Junction substations. The project was needed for reliability reasons and SPP issued SPS an NTC for the project. | SPP Base Plan | RE |
| 500 | Electric General | OPIE 3 Kiowa-China Draw 345kV_PID 30638 | A.0000424.168 | China Draw 345kV Sub Comms_UID | 23 | 7 | | | |
| 501 | Electric General | **OPIE 3 Kiowa-China Draw 345kV_PID 30638 Total** | | | **23** | **7** | This project installed new 345/115-kV transformers at North Loving and China Draw substations. It also constructed a new 345-kV transmission line from Kiowa to North Loving to China Draw substation. The project was needed for reliability and SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 502 | Electric General | OPIE Reconductor_PCA-Quahada | A.0000424.222 | Quahada Communication | (5,002) | (1,504) | | | |
| 503 | Electric General | **OPIE Reconductor_PCA-Quahada Total** | | | **(5,002)** | **(1,504)** | This project wrecked out and rebuilt the 115-kV line between the PCA and Quahada substations near Carlsbad, New Mexico. This project was needed to address overloads in the area. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 504 | Electric General | OPIE TUCO-Hobbs 345kV_PID 30376 | A.0000673.032 | Yoakum 345kV Sub Comms_UID 504 | 336,259 | 101,087 | | | |
| 505 | Electric General | **OPIE TUCO-Hobbs 345kV_PID 30376 Total** | | | **336,259** | **101,087** | This project constructed a single-circuit 345-kV transmission line between the TUCO Substation, near Lubbock, Texas, the Yoakum Substation in Texas, and the Hobbs Generating Substation near Hobbs, New Mexico. The project was evaluated and identified in the 2013 SPP High Priority Incremental Load Study ("HPILS") as needed for reliability to alleviate loading violations on the underlying network and voltage violations due to insufficient power supply to network load additions. In addition to its reliability benefits, the project was also identified by SPP as providing significant economic benefits. In 2016, SPP issued its Integrated Transmission Planning Near-Term study which identified the TUCO to Yoakum portion of the project as needed as soon as 2017 to mitigate voltage issues in that area. SPP issued SPS NTCs for this project. | SPP Base Plan | RE |
| 506 | Electric General | Physical Security | A.0000710.007 | NM Physical Security Comm | 4,642 | 1,395 | | | |
| 507 | Electric General | Physical Security | A.0000710.008 | SPS Physical Security Comm | 6,971 | 2,096 | | | |
| 508 | Electric General | **Physical Security Total** | | | **11,612** | **3,491** | This project installed Physical Security Upgrades affecting SPS substation protection with specific work varying by substation location, current layout, and threat history. Typical security measures included the installation of equipment such as cameras and motion sensors at substations. | SPS Zonal | OT |
| 509 | Electric General | Plant X 115kV BFR | A.0000842.001 | Plant X BFR RTU | 649,400 | 195,225 | | | |
| 510 | Electric General | Plant X 115kV BFR | A.0000842.005 | Plant X Hale Co Relaying Comm | 16,891 | 5,078 | | | |
| 511 | Electric General | **Plant X 115kV BFR Total** | | | **666,291** | **200,303** | This project added breaker failure relaying to the 115-kV breakers at the Plant X Substation. This project was needed to address NERC compliance requirements as well as to mitigate stability and reliability issues on the transmission system. | SPS Zonal | RE |
| 512 | Electric General | Puckett West Breaker Addition | A.0000574.007 | Coulter Relay Mod, Sub, COMM | 102 | 31 | | | |
| 513 | Electric General | **Puckett West Breaker Addition Total** | | | **102** | **31** | This project installed two new 115-kV terminals and a new 500' transmission line tap at Puckett West Substation. This project increased the reliability of Puckett West Substation by making two transmission sources available to it. SPP issued SPS an NTC for this project. | SPP Base Plan/SPS Zonal | RE |
| 514 | Electric General | RB - Purnell Sub | A.0001061.003 | Purnell 115kV Sub | 845,034 | 254,037 | | | |

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|---|---|---|---|---|---|---|---|---|---|
| 515 | Electric General | **RB - Purnell Sub Total** | | | **845,034** | **254,037** | This project installed a new 115-kV terminal at SPS's XIT Substation to provide 115-kV service to Rita Blanca Electric Cooperative to serve new load from its new Wolves Substation. | SPS Zonal/Customer Funded | LI |
| 516 | Electric General | RTU - EMS Upgrade - SPS | A.0000588.011 | Moore Co 115kV RTU Rplmnt | 15,662 | 4,708 | | | |
| 517 | Electric General | RTU - EMS Upgrade - SPS | A.0000588.031 | Eddy County RTU | 554,773 | 166,778 | | | |
| 518 | Electric General | RTU - EMS Upgrade - SPS | A.0000588.032 | Cunningham Station RTU Rplcmnt | 98,316 | 29,556 | | | |
| 519 | Electric General | RTU - EMS Upgrade - SPS | A.0000588.033 | Seven Rivers RTU Rplcmnt | 114,623 | 34,459 | | | |
| 520 | Electric General | **RTU - EMS Upgrade - SPS Total** | | | **783,375** | **235,501** | This project replaced remote terminal units ("RTUs") that were at the end of their useful service life. | SPS Zonal | OT |
| 521 | Electric General | S&E - SPS Sub | A.0000220.032 | Taylor Switching Station RTU Comm N | 233,511 | 70,199 | | | |
| 522 | Electric General | **S&E - SPS Sub Total** | | | **233,511** | **70,199** | These projects provided for the storm and emergency work orders that repaired substation facilities damaged by inclement weather and natural disasters. | SPS Zonal | SR |
| 523 | Electric General | Security Access Control System | A.0001118.006 | Lock and Key System TX | 1,418,859 | 426,543 | | | |
| 524 | Electric General | Security Access Control System | A.0001118.007 | Lock and Key System NM | 531,727 | 159,850 | | | |
| 525 | Electric General | Security Access Control System | A.0001118.009 | Lock and Key System OK | 14,098 | 4,238 | | | |
| 526 | Electric General | **Security Access Control System Total** | | | **1,964,684** | **590,630** | This project replaced the existing standard locks on substation entry gates with locks that use an electronic key to restrict substation access to authorized personnel and to meet compliance requirements. | SPS Zonal | OT |
| 527 | Electric General | Sierra Substation (RIAC Conversion) | A.0001300.020 | Roswell Intg New 115kV Terminal Com | 290 | 87 | | | |
| 528 | Electric General | **Sierra Substation (RIAC Conversion) Total** | | | **290** | **87** | This project constructed a new 115-kV distribution substation and the conversion of a 2-mile, 69-kV transmission line to 115-kV operation. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 529 | Electric General | SPS Checkpoint Firewalls | A.0001218.001 | Red Bluff Com Checkpoint Firewall N | 14,169 | 4,260 | | | |
| 530 | Electric General | SPS Checkpoint Firewalls | A.0001218.002 | Pleasant Hill Com Checkpoint FW NM | 9,360 | 2,814 | | | |
| 531 | Electric General | SPS Checkpoint Firewalls | A.0001218.003 | Pecos Com Checkpoint FW NM | 22,999 | 6,914 | | | |
| 532 | Electric General | SPS Checkpoint Firewalls | A.0001218.004 | Maddox Com Checkpoint FW NM | 12,917 | 3,883 | | | |
| 533 | Electric General | SPS Checkpoint Firewalls | A.0001218.005 | Carlsbad Intg Com Checkpoint FW NM | 22,834 | 6,865 | | | |
| 534 | Electric General | SPS Checkpoint Firewalls | A.0001218.006 | Atoka Com Checkpoint FW NM | (3,751) | (1,128) | | | |
| 535 | Electric General | SPS Checkpoint Firewalls | A.0001218.008 | Bowers Com Checkpoint FW TX | 48,607 | 14,612 | | | |
| 536 | Electric General | SPS Checkpoint Firewalls | A.0001218.010 | Cox Com Checkpoint FW TX | 21,583 | 6,488 | | | |
| 537 | Electric General | SPS Checkpoint Firewalls | A.0001218.012 | Hastings Com Checkpoint FW TX | 19,696 | 5,921 | | | |
| 538 | Electric General | SPS Checkpoint Firewalls | A.0001218.013 | Hereford Com Checkpoint FW TX | 19,141 | 5,754 | | | |
| 539 | Electric General | SPS Checkpoint Firewalls | A.0001218.014 | Kress Com Checkpoint FW TX | 6,932 | 2,084 | | | |
| 540 | Electric General | SPS Checkpoint Firewalls | A.0001218.016 | Muleshoe Valley Com Checkpoint FW T | 7,901 | 2,375 | | | |
| 541 | Electric General | SPS Checkpoint Firewalls | A.0001218.017 | Swisher Com Checkpoint FW TX | (697) | (209) | | | |
| 542 | Electric General | SPS Checkpoint Firewalls | A.0001218.018 | Lamton Comm Checkpoint FW TX | 17,975 | 5,404 | | | |
| 543 | Electric General | SPS Checkpoint Firewalls | A.0001218.019 | Happy Interchange Comm Checkpoint F | 22,294 | 6,702 | | | |
| 544 | Electric General | **SPS Checkpoint Firewalls Total** | | | **241,959** | **72,739** | This project installed firewall hardware on the fiber optics communications system, which is located on the transmission lines and substations. These firewall hardware installations were needed to provide data security for the data being transmitted over the fiber optic communication system. | SPS Zonal | OT |
| 545 | Electric General | SPS Frame Relay | A.0000948.003 | NM Frame Relay Comm | (12,809) | (3,851) | | | |
| 546 | Electric General | SPS Frame Relay | A.0000948.004 | TX Frame Relay Comm | (5,765) | (1,733) | | | |
| 547 | Electric General | **SPS Frame Relay Total** | | | **(18,575)** | **(5,584)** | These projects installed communications equipment for control and monitoring of the various substations upgraded with this project. | SPS Zonal | OT |
| 548 | Electric General | SPS Group 1 Switch Replacements | A.0000153.003 | SPS Trans Switch Comm | 49,164 | 14,780 | | | |
| 549 | Electric General | SPS Group 1 Switch Replacements | A.0000153.015 | T131 SCHLD MOD REPL SOLAR AT STR 11 | 3,447 | 1,036 | | | |
| 550 | Electric General | SPS Group 1 Switch Replacements | A.0000153.016 | U12 SCHLD REPL CTRL BRD SW 4J194 | 3,519 | 1,058 | | | |
| 551 | Electric General | SPS Group 1 Switch Replacements | A.0000153.018 | Z052 SCHLD REPL BATT SW 4794 STR 2 | 842 | 253 | | | |
| 552 | Electric General | **SPS Group 1 Switch Replacements Total** | | | **56,972** | **17,127** | These projects replaced old high-maintenance or broken switches with new switches. | SPS Zonal | SR |
| 553 | Electric General | SPS Sub Communication Network Group 1 | A.0000795.003 | SPS Sub Comm Network Group 1 C | 770,999 | 231,781 | | | |

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| | (A) | (B) | (C) | (D) | (E) | (F) | (G) | (H) | (I) |
|---|---|---|---|---|---|---|---|---|---|
| Line No. | Asset Class | WBS Level 1 Project Group Name | WBS Level 2 Number | WBS Level 2 Description | Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) Total Company | Additions to Plant-in-Service (October 1, 2019 - September 30, 2020) NM Retail | WBS Level 1 Project Group Description | Cost Recovery | Project Category |
| 554 | Electric General | **SPS Sub Communication Network Group 1 Total** | | | **770,999** | **231,781** | These projects provided for the construction of a fiber optics communication infrastructure within the SPS region. The first leg of a multi-year effort started in the Amarillo area by installing Optical Ground Wire ("OPGW") in the static position on selected transmission lines to create a redundant fiber optic communication ring with access to the Amarillo Transmission Operations Center. This ring provides redundant protection paths for the line sections on which the OPGW is installed as well as provides redundant paths for the Supervisory Control And Data Acquisition ("SCADA") system. | SPS Zonal | OT |
| 555 | Electric General | SPS Switch Replace | A.0000514.007 | Carlsbad Comm Replacement | 50,586 | 15,207 | | | |
| 556 | Electric General | **SPS Switch Replace Total** | | | **50,586** | **15,207** | This project replaced switches with cap and pin insulators because these cap and pin insulators have a long history of high failure rates. The new switches installed use a better design of insulator and will provide much improved reliability over the switches they replaced. | SPS Zonal | SR |
| 557 | Electric General | SPS Walkemeyer 345 115 280 MVA SUB | A.0001310.008 | Walkemeyer 345/115 Sub Comm | (496) | (149) | | | |
| 558 | Electric General | SPS Walkemeyer 345 115 280 MVA SUB | A.0001310.009 | Finney J 25 Terminal UPLC | (22) | (7) | | | |
| 559 | Electric General | **SPS Walkemeyer 345 115 280 MVA SUB Total** | | | **(518)** | **(156)** | This project constructed the new Carpenter Switching Station (formerly Stevens County) which is located on the 345-kV line from Hitchland Interchange to Finney Switching Station. This project was needed to address low voltages in the area. SPP issued SPS an NTC for this project. | SPP Base Plan | RE |
| 560 | Electric General | Synchrophasors | A.0001063.002 | NM Synchrophasors | 18,760 | 5,640 | | | |
| 561 | Electric General | Synchrophasors | A.0001063.003 | TX Synchrophasors | 30,396 | 9,138 | | | |
| 562 | Electric General | Synchrophasors | A.0001063.004 | Yoakum Synchrophasers | 1,535 | 461 | | | |
| 563 | Electric General | **Synchrophasors Total** | | | **50,692** | **15,239** | This project installed synchrophasor equipment on certain existing digital fault recorders to allow for the communication of near real-time, detailed system and fault information to a centralized digital fault recorder. This near real-time data facilitates faster troubleshooting, repair and return to operation of transmission facilities. This data is also used for engineering analyses to improve grid reliability and efficiency and to lower operating costs. | SPS Zonal | OT |
| 564 | Electric General | Tools - Engineering | A.0006059.436 | SPS Ops Engineering Tools | 83,387 | 25,068 | | | |
| 565 | Electric General | **Tools - Engineering Total** | | | **83,387** | **25,068** | This project purchased capital tools for engineering purposes, such as relays and test equipment for commissioning laboratories. | SPS Zonal | OT |
| 566 | Electric General | Tools and Equipment | A.0006059.100 | Tools Blanket TX Subs | 250,919 | 75,432 | | | |
| 567 | Electric General | Tools and Equipment | A.0006059.509 | Cell Phone Boosters SPS | 14,527 | 4,367 | | | |
| 568 | Electric General | **Tools and Equipment Total** | | | **265,447** | **79,800** | This project purchased tools and equipment for capital work at substations. | SPS Zonal | OT |
| 569 | Electric General | Tools COM Substation | A.0006059.063 | SPS Sub Comm Tool Blanket | 397,452 | 119,484 | | | |
| 570 | Electric General | **Tools COM Substation Total** | | | **397,452** | **119,484** | This project purchased capital tools for construction and maintenance activities. | SPS Zonal | OT |
| 571 | Electric General | Tools Line Field Ops | A.0006059.168 | SPS Transmission Tool Blanket | 107,957 | 32,454 | | | |
| 572 | Electric General | Tools Line Field Ops | A.0006059.432 | Tool Blanket TX Line | 262,746 | 78,988 | | | |
| 573 | Electric General | **Tools Line Field Ops Total** | | | **370,703** | **111,442** | This project purchased capital tools for the construction of capital projects. | SPS Zonal | OT |
| 574 | Electric General | Tools System Protection Comm Eng | A.0006059.088 | SPS Sys Protect Comm Eng Testing Eq | 111,981 | 33,664 | | | |
| 575 | Electric General | **Tools System Protection Comm Eng Total** | | | **111,981** | **33,664** | This project purchased the equipment panels for the Substation Design, Substation Communications, and System Protection Engineering Lab. These equipment panels have been used to mount the protective relaying, communication relaying, power supplies, and metering equipment used in the lab. These panels and equipment are being used for research and development of advanced communication and protection relaying schemes as well as for event analysis and troubleshooting of field situations that require engineering support. | SPS Zonal | OT |
| 576 | Electric General | Tools, Training Center | A.0006059.246 | Tools Training Center SPS | 83,567 | 25,122 | | | |
| 577 | Electric General | Tools, Training Center | A.0006059.258 | SPS Training Center Equipment | 85,776 | 25,786 | | | |
| 578 | Electric General | Tools, Training Center | A.0006059.434 | SPS Training Center Tools | 62,186 | 18,695 | | | |
| 579 | Electric General | Tools, Training Center | A.0006059.506 | SPS Training Center Equipmen | 4,435 | 1,333 | | | |
| 580 | Electric General | **Tools, Training Center Total** | | | **235,963** | **70,936** | This project purchased capital tools to construct capital projects and capital tools to be used in the training center. | SPS Zonal | OT |
| 581 | Electric General | Transportation - SPS | A.0006056.223 | Fleet New Units El Trans NM | 108,650 | 32,663 | | | |

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|---|---|---|---|---|---|---|---|---|---|
| 582 | Electric General | Transportation - SPS | A.0006056.224 | Fleet New Unit El Trans TX | 1,103,388 | 331,704 | | | |
| 583 | Electric General | **Transportation - SPS Total** | | | **1,212,038** | **364,367** | These projects purchased fleet vehicles for operation in the SPS area. The vehicles included automobiles, trucks, heavy vehicles such as bucket trucks, high-reach bucket trucks, hole-diggers, and trailers. Without these vehicles, crews would not have access to a predictable and reliable method of transport nor have the necessary equipment to perform needed transmission construction work. | SPS Zonal | OT |
| 584 | Electric General | Yoakum 115kV BFR | A.0000658.007 | Seagraves Comm | (471) | (142) | | | |
| 585 | Electric General | **Yoakum 115kV BFR Total** | | | **(471)** | **(142)** | This project installed Breaker Failure Relay (BFR) protection on all the 115-kV breakers at Yoakum Co. Interchange. Installing BFR protection reduces the clearing time of the fault during a stuck breaker event, which has been determined to cause major generation and transmission system impacts for certain breaker failure events. | SPS Zonal | RE |
| 586 | **Electric General Total** | | | | **$ 9,664,693** | **$ 2,905,435** | | | |
| 587 | **Grand Total** | | | | **$ 250,365,409** | **$ 61,259,805** | | | |

**Risk Assessment Categories**

| Risk Level* | Category | Non-Discretionary, Pending Contractual, or Prioritized |
|---|---|---|
| 1 | DD – Distribution Driven projects high risk | Prioritized |
| 1 | DDL – Distribution Driven projects low risk | Prioritized |
| 1 | DDM – Distribution Driven projects medium risk | Prioritized |
| 2 | RT – Reliability Transmission projects not involving load shed | Prioritized |
| 2 | RTE 1 – Phase 1 Regional Transmission Expansion | Prioritized |
| 3 | LS - Reliability projects that require Load Shed | Prioritized |
| 4 | TRS - Transmission projects with high Regulatory Scrutiny | Prioritized |
| 5 | RC - Reliability projects that are over 60% Complete | Non-Discretionary |
| 6 | DDH - Distribution Driven projects Highly likely to be funded | Pending Contractual |
| 7 | IA – Interconnection Agreement Tariff Funding | Pending Contractual |
| 7 | PL – Pending Legal Agreements (IA, T-T or T-D)[1] | Pending Contractual |
| 7 | RTE 2 – Phase 2 Regional Transmission | Pending Contractual |
| 8 | RM – Regulatory Mandated, legislative order, CON filed or Granted, ERO Compliance Requirements[2] | Non-Discretionary |
| 8 | RTE 3 – Phase 3 Regional Transmission Expansion | Non-Discretionary |
| 9 | LIA – Executed Load Interconnection Agreements | Non-Discretionary |
| 9 | NUGIA – Executed Non-Utility Generator Interconnection Agreements | Non-Discretionary |
| 9 | MC – Mandatory Compliance | Non-Discretionary |
| 9 | TS – Executed Transmission Service requests | Non-Discretionary |
| 10 | Outage – Broken or imminent failure | Non-Discretionary |

*Risk Level (1= minimal risk; 10= high risk)

[1] T-T: transmission to transmission, T-D: transmission to distribution
[2] CON: certificate of need, ERO: Electric Reliability Organization

**Southwestern Public Service Company**

**Cost Estimate Summary**

| **Estimate Name** | Scoping Estimate | Appropriation Estimate | Engineering Estimate | Cost at Completion |
|---|---|---|---|---|
| **Accuracy Target** | ± 30% | ± 20% | ± 10% | ± 0% |
| **Permitting & Field Siting** | 0% to 5% complete | 60% to 80% complete | 80% to 100% complete | 100% complete |
| **Land Acquisition** | 0% to 5% complete | 5% to 25% complete | 80% to 100% complete | 100% complete |
| **Engineering** | 0% to 5% complete | 5% to 25% complete | 75% to 100% complete | 100% complete |
| ***Remaining Unknowns*** | ▪ *Commission final need / route permit order specifics*<br>▪ *Acquisition of land rights*<br>▪ *Project design specifications & scope*<br>▪ *Material costs & lead times*<br>▪ *Construction schedule & cost* | ▪ *Acquisition of land rights cost*<br>▪ *Material costs & lead times*<br>▪ *Construction schedule & cost* | ▪ *Construction cost (weather, access, field conditions, etc.)* | |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2020 through February 28, 2021**

| Line No. | (A) Asset Class | (B) Witness | (C) Project Category | (D) WBS Level 1 Project Group Name | (E) Additions to Plant-in-Service (October 1, 2020 - February 28, 2021) Total Company | (F) Additions to Plant-in-Service (October 1, 2020 - February 28, 2021) NM Retail |
|---|---|---|---|---|---|---|
| 1 | Electric Transmission | Cooley | RE | OPIE 2 Kiowa-Eddy Co 345kV | $ 61,045,496 | $ 14,799,588 |
| 2 | Electric Transmission | Cooley | LI | OPIE 3 Malaga Bend | 16,707,482 | 4,050,485 |
| 3 | Electric Transmission | Cooley | SR | S&E - SPS Line | 14,229,570 | 3,449,751 |
| 4 | Electric Transmission | Cooley | RE | Mustang - Seminole 115kV Ckt1 New Line | 14,117,278 | 3,422,528 |
| 5 | Electric Transmission | Cooley | RE/LI | OPIE 3 Roadrunner-China Draw 345kV | 12,994,540 | 3,150,336 |
| 6 | Electric Transmission | Cooley | RE | OPIE TUCO-Hobbs 345kV_PID 30376 | 10,541,508 | 2,555,634 |
| 7 | Electric Transmission | Cooley | LI | OPIE 3 W 39 Rebuild | 6,507,571 | 1,577,665 |
| 8 | Electric Transmission | Cooley | RE | Sundown 230/115 Auto Upgrade | 5,987,736 | 1,451,639 |
| 9 | Electric Transmission | Cooley | SR | ELR - Breakers - SPS | 3,911,147 | 948,200 |
| 10 | Electric Transmission | Cooley | OT | SPS Sub Communication Network Group 1 | 3,320,758 | 805,069 |
| 11 | Electric Transmission | Cooley | LI | Hunsley Substation | 2,954,430 | 716,258 |
| 12 | Electric Transmission | Cooley | RE | SPS SPE Fault Clearing Relay Rplmnts | 2,537,476 | 615,174 |
| 13 | Electric Transmission | Cooley | OT | Physical Security | 2,221,650 | 538,607 |
| 14 | Electric Transmission | Cooley | SR | Spearman Breaker Replacements | 1,976,873 | 479,264 |
| 15 | Electric Transmission | Cooley | SR | SPS Group 1 Switch Replacements | 1,960,035 | 475,182 |
| 16 | Electric Transmission | Cooley | SR | Carlisle Cap Bank Rplmt | 1,851,273 | 448,814 |
| 17 | Electric Transmission | Cooley | SR | Tuco SVC Control and Protection Repl | 1,840,556 | 446,216 |
| 18 | Electric Transmission | Cooley | OT | TxDot Relocate | 1,799,734 | 436,319 |
| 19 | Electric Transmission | Cooley | RE | Hale to Cox V07 Rebuild | 1,764,511 | 427,780 |
| 20 | Electric Transmission | Cooley | LI | OPIE 3 Medanos Sub | 1,704,432 | 413,215 |
| 21 | Electric Transmission | Cooley | SR | ELR RFL9300 Relays SPS | 1,621,198 | 393,036 |
| 22 | Electric Transmission | Cooley | SR | S&E - SPS Sub | 1,620,846 | 392,950 |
| 23 | Electric Transmission | Cooley | SR | Line ELR SPS | 1,475,045 | 357,603 |
| 24 | Electric Transmission | Cooley | LI | DCP - White Deer Sub | 1,443,869 | 350,045 |
| 25 | Electric Transmission | Cooley | SR | Sundown 115kV Capacitor Bank | 1,172,314 | 284,210 |
| 26 | Electric Transmission | Cooley | RE | NERC TPL Relay Improvements | 929,108 | 225,249 |
| 27 | Electric Transmission | Cooley | SR | Z18 Tuco Plainview Rebuild | 827,052 | 200,507 |
| 28 | Electric Transmission | Cooley | SR | ELR - Relay - SPS | 712,074 | 172,632 |
| 29 | Electric Transmission | Cooley | RE | Cardinal Teague Recond 115kV Line | 489,776 | 118,739 |
| 30 | Electric Transmission | Cooley | SR | SPS Major Line Refurbishment | 451,011 | 109,341 |
| 31 | Electric Transmission | Cooley | OT | Pole Treatment Program | 338,295 | 82,015 |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2020 through February 28, 2021**

| Line No. | (A) Asset Class | (B) Witness | (C) Project Category | (D) WBS Level 1 Project Group Name | (E) Additions to Plant-in-Service (October 1, 2020 - February 28, 2021) Total Company | (F) Additions to Plant-in-Service (October 1, 2020 - February 28, 2021) NM Retail |
|---|---|---|---|---|---|---|
| 32 | Electric Transmission | Cooley | GI | GEN-2011-025 Fiber Wind | 315,044 | 76,378 |
| 33 | Electric Transmission | Cooley | SR | SPIRe | 267,183 | 64,775 |
| 34 | Electric Transmission | Cooley | RE | SPS Facility Rating Mitigation | 217,429 | 52,712 |
| 35 | Electric Transmission | Cooley | OT | Agreement Merrick | 207,184 | 50,229 |
| 36 | Electric Transmission | Cooley | LI | Interconnection XTO BEU | 194,216 | 47,085 |
| 37 | Electric Transmission | Cooley | RE | Tierra Blanca 115kV Substation | 186,700 | 45,263 |
| 38 | Electric Transmission | Cooley | RE | McDowell Creek 230/115KV Sub | 186,643 | 45,249 |
| 39 | Electric Transmission | Cooley | RE | W27 Oil Center-Lea Road Reconductor | 100,000 | 24,244 |
| 40 | Electric Transmission | Cooley | OT | Breaker Failure Monitoring | 99,578 | 24,141 |
| 41 | Electric Transmission | Cooley | RE | V72 Terminal Upgrades at Hale | 98,545 | 23,891 |
| 42 | Electric Transmission | Cooley | GI/LI | Interconnection XTO Cornell | 69,554 | 16,862 |
| 43 | Electric Transmission | Cooley | SR | Texas County 115kV Capacitor Bank | 67,930 | 16,469 |
| 44 | Electric Transmission | Cooley | LI | Agreement Oxy Hess Amerada Hess | 65,285 | 15,827 |
| 45 | Electric Transmission | Cooley | OT | SPS Sub Communication Network Group 2 | 63,950 | 15,504 |
| 46 | Electric Transmission | Cooley | LI | Sisko Substation | 25,000 | 6,061 |
| 47 | Electric Transmission | Cooley | RE | Atoka-Eagle Creek | 16,219 | 3,932 |
| 48 | Electric Transmission | Cooley | LI | Legacy Robertson Conversion | 16,100 | 3,903 |
| 49 | Electric Transmission | Cooley | RE | OPIE Hobbs-Kiowa 345kV_PID 30637 | 15,008 | 3,638 |
| 50 | Electric Transmission | Cooley | RE | W-26 Cooper Ranch-Oil Ctr wreck out rebuild | 6,000 | 1,455 |
| 51 | Electric Transmission | Cooley | RE/LI | OPIE 2 DCP Zia 2 Quahada Project | 4,151 | 1,006 |
| 52 | Electric Transmission | Cooley | RE | V24 Terry & Wolfforth Terminal Upgrades | 3,330 | 807 |
| 53 | Electric Transmission | Cooley | RE | Plant X Transformer 2 Addition | 3,117 | 756 |
| 54 | Electric Transmission | Cooley | SR | CVA Mitigation | 1,113 | 270 |
| 55 | Electric Transmission | Cooley | RE | OPIE 3 Ponderosa-Custer Mt115kV_PID 30694 | 564 | 137 |
| 56 | Electric Transmission | Cooley | RE | OPIE N Loving-S Loving 115kV | 477 | 116 |
| 57 | Electric Transmission | Cooley | EC/TI | TUCO Mooreland (Woodward) | 466 | 113 |
| 58 | Electric Transmission | Cooley | RE | Z66 Booker/Wade Conversion | 253 | 61 |
| 59 | Electric Transmission | Cooley | OT | Fault Recorders - SPS | 139 | 34 |
| 60 | Electric Transmission | Cooley | RE | OPIE 1 Road Runner (Interc Potash Conn) | 76 | 19 |
| 61 | Electric Transmission | Cooley | GI | GEN 2014 033 Roswell Solar | 43 | 10 |
| 62 | Electric Transmission | Cooley | RE | Curry to Bailey 115kV | 31 | 8 |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2020 through February 28, 2021**

| Line No. | (A) Asset Class | (B) Witness | (C) Project Category | (D) WBS Level 1 Project Group Name | (E) Additions to Plant-in-Service (October 1, 2020 - February 28, 2021) Total Company | (F) Additions to Plant-in-Service (October 1, 2020 - February 28, 2021) NM Retail |
|---|---|---|---|---|---|---|
| 63 | Electric Transmission | Cooley | RE | STEP Newhart Interchange | 5 | 1 |
| 64 | Electric Transmission | Cooley | LI | Interconnection Milwaukee | 1 | 0 |
| 65 | Electric Transmission | Cooley | EC/TI | Hitchland to Woodward | (10,811) | (2,621) |
| 66 | Electric Transmission | Cooley | OT | Agreement Westmount Ford Development | (19,554) | (4,741) |
| 67 | Electric Transmission | Cooley | SR | Unserviceable - Breakers - SPS | (19,636) | (4,760) |
| 68 | Electric Transmission | Cooley | GI | Gen Upgrade Tolk X Reconductor | (46,294) | (11,223) |
| 69 | Electric Transmission | Cooley | OT | SPS Asset Sales | (63,673) | (15,437) |
| 70 | Electric Transmission | Cooley | RE | Eddy County Dbl Bus Dbl Brker 230kV | (165,321) | (40,080) |
| 71 | **Electric Transmission Total** | | | | **$ 182,960,688** | **$ 44,356,145** |
| 72 | Electric General | Cooley | OT | Transportation - SPS | 1,908,569 | $ 573,761 |
| 73 | Electric General | Cooley | OT | Security Access Control System | 1,530,771 | $ 460,186 |
| 74 | Electric General | Cooley | OT | RTU - EMS Upgrade - SPS | 804,039 | $ 241,713 |
| 75 | Electric General | Cooley | OT | Physical Security | 620,596 | $ 186,566 |
| 76 | Electric General | Cooley | OT | SPS Sub Communication Network Group 1 | 599,157 | $ 180,121 |
| 77 | Electric General | Cooley | RE | SPS SPE Fault Clearing Relay Rplmnts | 577,468 | $ 173,601 |
| 78 | Electric General | Cooley | OT | Fault Recorders - SPS | 464,959 | $ 139,778 |
| 79 | Electric General | Cooley | RE | GSEC GB NP Howard-Miami | 211,838 | $ 63,683 |
| 80 | Electric General | Cooley | RE/LI | OPIE 3 Roadrunner-China Draw 345kV | 197,789 | $ 59,460 |
| 81 | Electric General | Cooley | RE | OPIE 2 Kiowa-Eddy Co 345kV | 160,631 | $ 48,290 |
| 82 | Electric General | Cooley | OT | Tools Line Field Ops | 145,141 | $ 43,633 |
| 83 | Electric General | Cooley | OT | Tools - Engineering | 141,729 | $ 42,607 |
| 84 | Electric General | Cooley | RE | Sundown 230/115 Auto Upgrade | 138,062 | $ 41,505 |
| 85 | Electric General | Cooley | SR | Tuco SVC Control and Protection Repl | 110,430 | $ 33,198 |
| 86 | Electric General | Cooley | OT | Tools COM Substation | 98,266 | $ 29,541 |
| 87 | Electric General | Cooley | SR | SPS Group 1 Switch Replacements | 81,034 | $ 24,361 |
| 88 | Electric General | Cooley | OT | Tools, Training Center | 70,879 | $ 21,308 |
| 89 | Electric General | Cooley | SR | S&E - SPS Sub | 66,082 | $ 19,866 |
| 90 | Electric General | Cooley | LI | OPIE Enterprise S Eddy Tap | 60,078 | $ 18,061 |
| 91 | Electric General | Cooley | RE | Mustang - Seminole 115kV Ckt1 New Line | 53,055 | $ 15,950 |
| 92 | Electric General | Cooley | LI | Interconnection XTO BEU | 43,275 | $ 13,010 |

**Southwestern Public Service Company**

**Transmission Capital Additions**
**October 1, 2020 through February 28, 2021**

| Line No. | (A) Asset Class | (B) Witness | (C) Project Category | (D) WBS Level 1 Project Group Name | (E) Additions to Plant-in-Service (October 1, 2020 - February 28, 2021) Total Company | (F) Additions to Plant-in-Service (October 1, 2020 - February 28, 2021) NM Retail |
|---|---|---|---|---|---|---|
| 93 | Electric General | Cooley | SR | ELR RFL9300 Relays SPS | 42,744 | $ 12,850 |
| 94 | Electric General | Cooley | OT | Tools System Protection Comm Eng | 36,974 | $ 11,115 |
| 95 | Electric General | Cooley | SR | ELR - Relay - SPS | 30,286 | $ 9,105 |
| 96 | Electric General | Cooley | OT | SPS Checkpoint Firewalls | 14,700 | $ 4,419 |
| 97 | Electric General | Cooley | OT | Synchrophasors | 12,255 | $ 3,684 |
| 98 | Electric General | Cooley | OT | SPS Sub Communication Network Group 2 | 10,048 | $ 3,021 |
| 99 | Electric General | Cooley | SR | Carlisle Cap Bank Rplmt | 9,036 | $ 2,717 |
| 100 | Electric General | Cooley | OT | General Furniture | 808 | $ 243 |
| 101 | Electric General | Cooley | SR | Spearman Breaker Replacements | 384 | $ 115 |
| 102 | Electric General | Cooley | RE | OPIE TUCO-Hobbs 345kV_PID 30376 | (968) | $ (291) |
| 103 | Electric General | Cooley | GI/LI | Interconnection XTO Cornell | (8,806) | $ (2,647) |
| 104 | **Electric General Total** | | | | **$ 8,231,309** | **$ 2,474,526** |
| 105 | **Grand Total** | | | | **$ 191,191,997** | **$ 46,830,670** |

# TOLK GENERATORS
# CHANGE OF OPERATION STUDY

Transmission Planning South
Xcel Energy Services, Inc.

August 11, 2017

## Executive Summary

Transmission Planning South has performed a system impact study for the limited operations of the Tolk 1 and 2 units only during the summer months. The purpose of this study is

- To determine the system impacts of not operating Tolk units during non-summer months i.e., light load (high wind) and winter peak scenario.
- To determine the benefits of converting existing units to synchronous condenser operation during the winter and spring periods.

The Tolk generators operating assumptions considered for this study are

- Between October, 2018 to May, 2019 operate both Tolk units at a partial capacity of 175MW
- Between October, 2019 to May, 2020 operate one Tolk unit at partial capacity of 175MW and other unit is shutdown
- Starting June 2020 operate both Tolk units only during the summer months

Both steady state and stability analysis were performed to study the system impact. Power flow analysis was performed on the 2012 and 2026 Light Load and Winter peak scenario 0 and 5 models representing the 2017 Southwest Power Pool (SPP) ITPNT Model Series. The stability analysis was performed on 2021 Light Load and Winter peak model representing the 2016 Southwest Power Pool (SPP) MDWG reduced Model Series. Also, to study the impact of high wind scenario a 2021 Light Load scenario 5 model was created with 100% firm wind output and no non-firm wind in the model.

NERC Planning Standard TPL-001-4 P1 single contingency (N-1) events and P3 multiple contingency (loss of generator followed by N-1 345kV and above transmission outage) events for facilities in SPS area were chosen for steady state contingency analysis and the NERC TPL-001-4 P1 events and P2 to P5 EHV events for facilities in SPS area were chosen for stability contingency analysis. NERC TPL-001-4 P1 and P2 to P5 EHV events were primarily chosen since non-consequential load loss or interruption of firm transmission service is not allowed. SPP analyzes the SPS system using many of the same disturbances.

The stability results showed unstable system conditions in 2021 Light Load Scenario 5 model for NERC TPL-001-4 P3 multiple contingency (loss of generator followed by N-1 transmission outage) events due to the high wind penetration and less fossil generation. Refer to Section 4 for the stability analysis results.

The power flow results case showed voltage collapse issues in 2021 Light Load Scenario 5 and 2026 winter peak scenario 5 models for NERC TPL-001-4 P1 single contingency (N-1) and P3 multiple contingency (loss of generator followed by N-1 transmission outage) events due to their high wind penetration and less fossil generation. Refer to Section 4 for the steady state analysis results.

This system impact study performed showed the need to convert one of the Tolk units to synchronous condenser operation immediately and later it is required to convert both the Tolk units to synchronous condenser operation by the mid-2020s to mitigate TPL-001-4 P3 multiple contingency (loss of generator followed by N-1) event issues.

It is also observed that there is a huge real power deficiency in the SPS area by mid 2020s causing severe steady state issues. Conversion of both the Tolk units to synchronous condenser operation alone cannot mitigate all the transmission system performance issues in later years. New generation installation will greatly improve system performance with real and reactive power capability with the changed operation of the Tolk units.

## Table of Contents

## 1. Introduction

Transmission Planning South has performed a system impact study for the limited operations of the Tolk 1 and 2 units only during the summer months.

The generator operating assumptions considered for this study are

- Between October, 2018 to May, 2019 operate both Tolk units at a partial capacity of 175MW
- Between October, 2019 to May, 2020 operate one Tolk unit at partial capacity of 175MW and other unit is shutdown
- Starting June 2020 operate both Tolk units only during the summer months

The purpose of this study is

- To determine the system impacts of not operating Tolk units during non-summer months i.e., light load (high wind) and winter peak scenario.
- To determine the benefits of converting existing units to synchronous condenser operation during the winter and spring periods.

## 2. Study Methodology

This study was performed using the Power Technologies, Inc. ("PTI") Power System Simulator for Engineering (PSS/E) program version 33.7.0 and contains a steady-state analysis using AC Contingency Checking (ACCC) with a Fixed Slope Decoupled Newton–Raphson (FDNS) solution. The study was conducted to ensure that current NERC Planning Standards[1] are fulfilled. As an example, for system intact conditions, bus voltages must be maintained between 0.95 – 1.05 per unit of their nominal value and thermal system intact conditions must not exceed their designated A-rating. For contingencies, the voltages are allowed to deviate between 0.90 – 1.05 per-unit of their nominal value. Additionally, the loading on transmission system equipment cannot exceed 100% of the emergency B-rating.

The existing generators in the SPS area were re-dispatched and no additional or new generators were turned on to compensate for the generation deficiency in the system. The remaining generation was imported from the neighboring area into SPS area.

## 3. Study Assumptions[2]

Both steady state and stability analysis were performed to study the system impact. Power flow analysis was performed on the 2012 and 2026 Light Load and Winter peak scenario 0 and 5 models representing the 2017 Southwest Power Pool (SPP) ITPNT Model Series. The stability analysis was performed on 2021 Light Load and Winter peak model representing the 2016 Southwest Power Pool (SPP) MDWG reduced Model Series. Also, to study the impact of high wind scenario a 2021 Light Load scenario 5 model was created with 100% firm wind output and no non-firm wind in the model.

The Tolk generator's operating assumptions considered for this study are

- Between October, 2018 to May, 2019 operate both Tolk units at a partial capacity of 175MW
- Between October, 2019 to May, 2020 operate one Tolk unit at partial capacity of 175MW and other unit is shutdown

[1] Requirement for NERC TPL-001-4
[2] Requirement for FAC 002-R1.5

- Starting June 2020 operate both Tolk units only during the summer months

## 4. Results

NERC Planning Standard TPL-001-4 P1 single contingency (N-1) events and P3 multiple contingency (loss of generator followed by N-1 345kV and above transmission outage) events for facilities in SPS area were chosen for steady state contingency analysis and all the NERC TPL-001-4 P1 events and P2 to P5 EHV events for facilities in SPS area were chosen for stability contingency analysis. NERC TPL-001-4 P1 and P2 to P5 EHV events were primarily chosen since non-consequential load loss or interruption of firm transmission service is not allowed. SPP analyses the SPS system using many of the same disturbances.

### Stability Analysis:

2021 Light Load scenario 5 case showed system instability for NERC TPL-001-4 P3 multiple contingency (loss of generator followed by N-1 345kV and above transmission outage) events due to the high wind penetration and less fossil generation. Below Table 1 shows the stability analysis results.

**Table 1: Stability Analysis Results**

| Year | NERC TPL-001-4 event | Contingency 1 | Contingency 2 | Stability Analysis Results | | Comments |
|---|---|---|---|---|---|---|
| | | | | Tolk Unit1 and 2 OFF | Tolk unit 1 converted to Synchronous Condenser; Tolk unit 2 OFF | |
| 2021L5 | P3 | Hobbs unit 1&3 | Tuco to OKU 345kV (J01) | Unstable (Figure 1) | Stable | Loss of Hobbs 1 causes Hobbs 3 a steam unit to turn off (Hobbs 2 is already off in model) |
| 2021L5 | P3 | Hobbs unit 1&3 | Tuco to Border 345kV (J11) | Unstable (Figure 2) | Stable | |
| 2021L5 | P3 | Hobbs unit 1&3 | Crossroads to Eddy 345kV (J02) | Un-damped oscillations observed | Stable | |
| 2021L5 | P3 | Hobbs unit 1&3 | Tuco to Yoakum 345kV (J17) | Un-damped oscillations observed | Stable | |
| 2021L5 | P3 | Hobbs unit 1&3 | HOBBS to KIOWA (J20) | Un-damped oscillations observed | Stable | |
| 2021L5 | P3 | Hobbs unit 1&3 | HOBBS to YOAKUM (J18) | Un-damped oscillations observed | Stable | |
| 2021L5 | P3 | Hobbs unit 3 | Tuco to OKU 345kV (J01) | Un-damped oscillations observed | Stable | |

Figures 1 and 2 to below show the stability plots for unstable events listed in the above Table 1. The plots show angular instability and system collapse for the loss of Hobbs unit 1 and 3 followed by Tuco to OKU 345kV (J01) line and Tuco to Border 345kV (J11) line respectively. Refer to Appendix A for the stability analysis result plots.

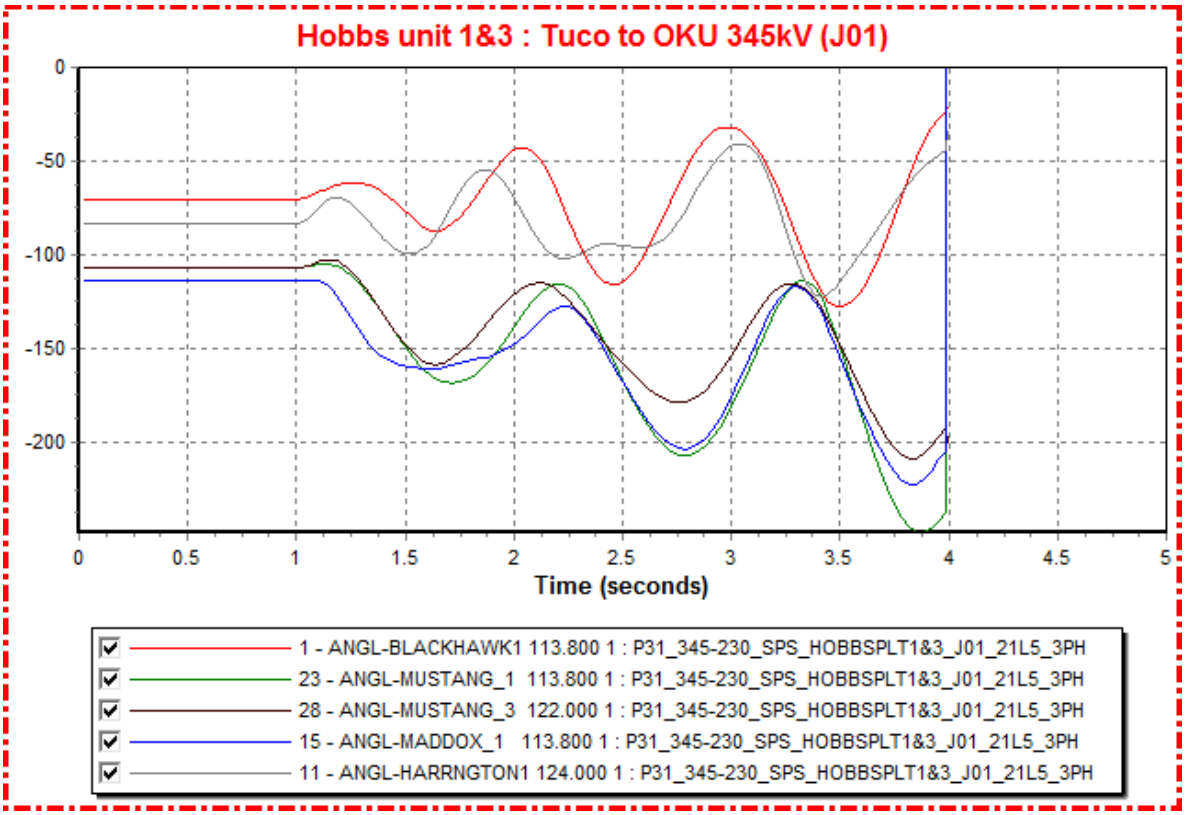



**Figure 1: Angular plots for TPL-001-4 P3 event (Hobbs 1&3 followed by J01)**

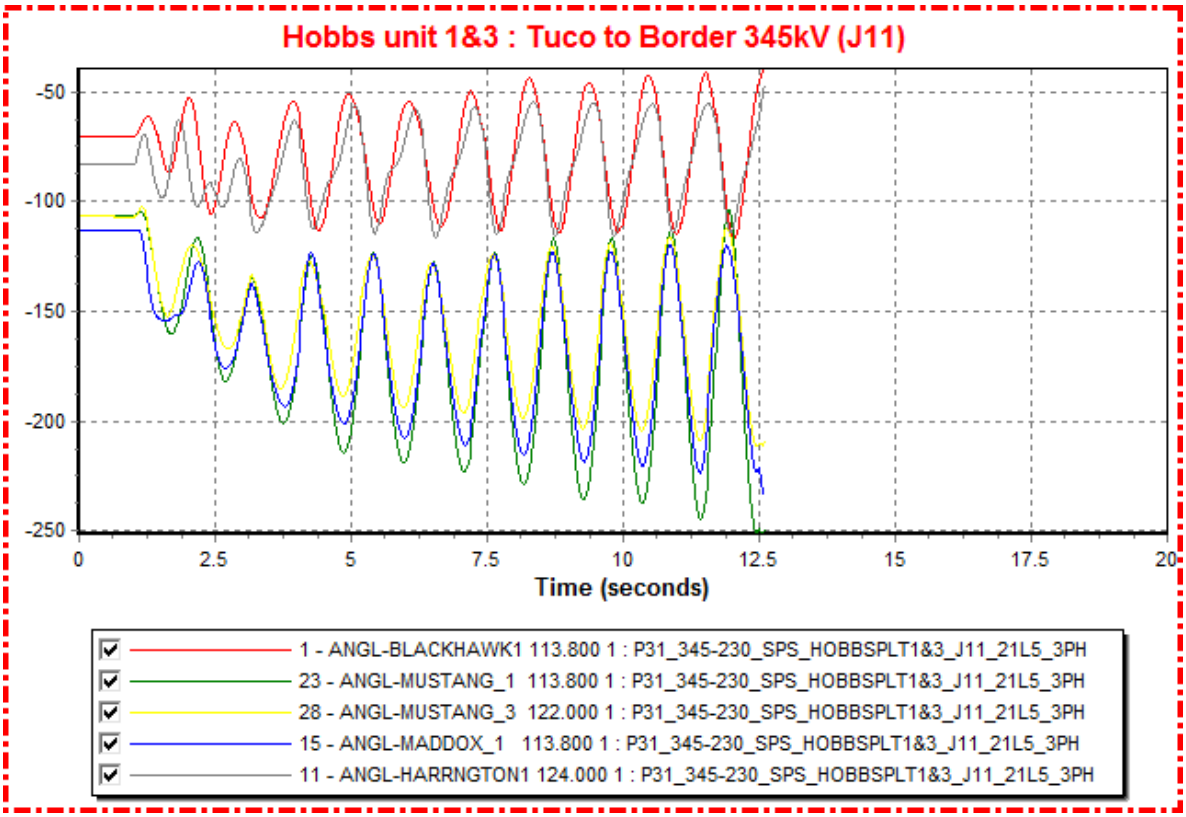



**Figure 2: : Angular plots for TPL-001-4 P3 event (Hobbs 1&3 followed by J11)**

## Steady-State Analysis:

2021 Light Load scenario 5 case showed voltage collapse for NERC TPL-001-4 P3 multiple contingency (loss of generator followed by N-1) events due to the high wind penetration and less fossil generation. Below Table 2 shows the steady state analysis results for 2021 Light Load scenario 5 model.

**Table 2: Steady state analysis results for 2021 Light Load scenario 5 model**

| Year | NERC TPL-001-4 event | Contingency 1 | Contingency 2 | Stability Analysis Results | |
|---|---|---|---|---|---|
| | | | | Tolk Unit1 and 2 OFF | Tolk unit 1 converted to Synchronous Condenser; Tolk unit 2 OFF |
| 2021L5 | P3 | Hobbs unit 3 | Tuco to OKU 345kV (J01) | Solution diverges; voltage collapse | No voltage issues observed |
| 2021L5 | P3 | Mustang unit 1 | Tuco to Yoakum 345kV (J17) | Solution diverges; voltage collapse | No voltage issues observed |

2026 winter peak scenario 5 cases showed voltage for NERC TPL-001-4 P1 single contingency (N-1) and P3 multiple contingency (loss of generator followed by N-1) events due to the high wind penetration and less fossil generation.
Below Table 3 shows the steady state analysis results for 2026 winter peak scenario 5 model.

**Table 3: Steady state analysis results for 2026 Winter Peak scenario 5 model**

| Year | NERC TPL-001-4 event | Contingency 1 | Contingency 2 | Stability Analysis Results | | |
|---|---|---|---|---|---|---|
| | | | | Tolk Unit1 and 2 OFF | Tolk unit 1 converted to Synchronous Condenser; Tolk unit 2 OFF | Tolk unit 1 and 2 converted to Synchronous Condenser |
| 2026W5 | P3 | 523461 [BLACKHAWK1 113.800] | 526331 [JONES_1 122.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523461 [BLACKHAWK1 113.800] | 526332 [JONES_2 122.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523461 [BLACKHAWK1 113.800] | 527903 [HOBBS_PLT3 118.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523461 [BLACKHAWK1 113.800] | 527655 [RSVLT_CC_E 7345.00]-527656 [CROSSROADS 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523461 [BLACKHAWK1 113.800] | 525832 [TUCO_INT 7345.00]-511456 [O.K.U.-7 345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523462 [BLACKHAWK2 113.800] | 526331 [JONES_1 122.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523462 [BLACKHAWK2 113.800] | 526332 [JONES_2 122.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523462 [BLACKHAWK2 113.800] | 527903 [HOBBS_PLT3 118.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523462 [BLACKHAWK2 113.800] | 527655 [RSVLT_CC_E 7345.00]-527656 [CROSSROADS 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523462 [BLACKHAWK2 113.800] | 525832 [TUCO_INT 7345.00]-511456 [O.K.U.-7 345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |

| Year | NERC TPL-001-4 event | Contingency 1 | Contingency 2 | Stability Analysis Results | | |
|---|---|---|---|---|---|---|
| | | | | Tolk Unit1 and 2 OFF | Tolk unit 1 converted to Synchronous Condenser; Tolk unit 2 OFF | Tolk unit 1 and 2 converted to Synchronous Condenser |
| 2026W5 | P3 | 523971 [HARRNGTON1 124.000] | 526331 [JONES_1 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 523971 [HARRNGTON1 124.000] | 526332 [JONES_2 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 523971 [HARRNGTON1 124.000] | 527163 [MUSTANG_3 122.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523971 [HARRNGTON1 124.000] | 527903 [HOBBS_PLT3 118.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 523971 [HARRNGTON1 124.000] | 527654 [RSVLT_CC_W 7345.00]-527655 [RSVLT_CC_E 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523971 [HARRNGTON1 124.000] | 527655 [RSVLT_CC_E 7345.00]-527656 [CROSSROADS 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523971 [HARRNGTON1 124.000] | 525832 [TUCO_INT 7345.00]-511456 [O.K.U.-7 345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 523971 [HARRNGTON1 124.000] | 525832 [TUCO_INT 7345.00]-515458 [BORDER 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523972 [HARRNGTON2 124.000] | 526331 [JONES_1 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 523972 [HARRNGTON2 124.000] | 526332 [JONES_2 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 523972 [HARRNGTON2 124.000] | 527161 [MUSTANG_1 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523972 [HARRNGTON2 124.000] | 527162 [MUSTANG_2 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523972 [HARRNGTON2 124.000] | 527163 [MUSTANG_3 122.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523972 [HARRNGTON2 124.000] | 527901 [HOBBS_PLT1 118.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523972 [HARRNGTON2 124.000] | 527902 [HOBBS_PLT2 118.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523972 [HARRNGTON2 124.000] | 527903 [HOBBS_PLT3 118.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523972 [HARRNGTON2 124.000] | 527655 [RSVLT_CC_E 7345.00]-527656 [CROSSROADS 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523972 [HARRNGTON2 124.000] | 525832 [TUCO_INT 7345.00]-511456 [O.K.U.-7 345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 523972 [HARRNGTON2 124.000] | 525832 [TUCO_INT 7345.00]-515458 [BORDER 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523973 [HARRNGTON3 | 526331 [JONES_1 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues |

| Year | NERC TPL-001-4 event | Contingency 1 | Contingency 2 | Stability Analysis Results | | |
|---|---|---|---|---|---|---|
| | | | | Tolk Unit1 and 2 OFF | Tolk unit 1 converted to Synchronous Condenser; Tolk unit 2 OFF | Tolk unit 1 and 2 converted to Synchronous Condenser |
| | | 124.000] | | | | observed |
| 2026W5 | P3 | 523973 [HARRNGTON3 124.000] | 526332 [JONES_2 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 523973 [HARRNGTON3 124.000] | 527161 [MUSTANG_1 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523973 [HARRNGTON3 124.000] | 527162 [MUSTANG_2 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523973 [HARRNGTON3 124.000] | 527163 [MUSTANG_3 122.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523973 [HARRNGTON3 124.000] | 527901 [HOBBS_PLT1 118.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523973 [HARRNGTON3 124.000] | 527902 [HOBBS_PLT2 118.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523973 [HARRNGTON3 124.000] | 527903 [HOBBS_PLT3 118.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 523973 [HARRNGTON3 124.000] | 527655 [RSVLT_CC_E 7345.00]-527656 [CROSSROADS 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 523973 [HARRNGTON3 124.000] | 525832 [TUCO_INT 7345.00]-511456 [O.K.U.-7 345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 523973 [HARRNGTON3 124.000] | 525832 [TUCO_INT 7345.00]-515458 [BORDER 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 524021 [NICHOLS_1 113.800] | 526331 [JONES_1 122.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 524021 [NICHOLS_1 113.800] | 526332 [JONES_2 122.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 524021 [NICHOLS_1 113.800] | 527903 [HOBBS_PLT3 118.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 524021 [NICHOLS_1 113.800] | 525832 [TUCO_INT 7345.00]-511456 [O.K.U.-7 345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 524021 [NICHOLS_1 113.800] | 525832 [TUCO_INT 7345.00]-515458 [BORDER 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 524022 [NICHOLS_2 113.800] | 526331 [JONES_1 122.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 524022 [NICHOLS_2 113.800] | 526332 [JONES_2 122.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 524022 [NICHOLS_2 113.800] | 527903 [HOBBS_PLT3 118.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 524022 [NICHOLS_2 113.800] | 525832 [TUCO_INT 7345.00]-511456 [O.K.U.-7 345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 524022 [NICHOLS_2 | 525832 [TUCO_INT 7345.00]- | Solution diverges; | No voltage issues | No voltage |

| Year | NERC TPL-001-4 event | Contingency 1 | Contingency 2 | Stability Analysis Results | | |
|---|---|---|---|---|---|---|
| | | | | Tolk Unit1 and 2 OFF | Tolk unit 1 converted to Synchronous Condenser; Tolk unit 2 OFF | Tolk unit 1 and 2 converted to Synchronous Condenser |
| | | 113.800] | 515458 [BORDER 7345.00] CKT 1 | voltage collapse | observed | issues observed |
| 2026W5 | P3 | 524023 [NICHOLS_3 122.000] | 526331 [JONES_1 122.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 524023 [NICHOLS_3 122.000] | 526332 [JONES_2 122.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 524023 [NICHOLS_3 122.000] | 527903 [HOBBS_PLT3 118.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 524023 [NICHOLS_3 122.000] | 527655 [RSVLT_CC_E 7345.00]-527656 [CROSSROADS 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 524023 [NICHOLS_3 122.000] | 525832 [TUCO_INT 7345.00]-511456 [O.K.U.-7 345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 524023 [NICHOLS_3 122.000] | 525832 [TUCO_INT 7345.00]-515458 [BORDER 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P1 | UNIT 1 BUS 526331 [JONES_1 122.000] | | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P1 | UNIT 1 BUS 526332 [JONES_2 122.000] | | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527161 [MUSTANG_1 113.800] | 526331 [JONES_1 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527161 [MUSTANG_1 113.800] | 526332 [JONES_2 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527161 [MUSTANG_1 113.800] | 527162 [MUSTANG_2 113.800] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527161 [MUSTANG_1 113.800] | 527163 [MUSTANG_3 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527161 [MUSTANG_1 113.800] | 527884 [CUNINGHAM4 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527161 [MUSTANG_1 113.800] | 527901 [HOBBS_PLT1 118.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527161 [MUSTANG_1 113.800] | 527902 [HOBBS_PLT2 118.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527161 [MUSTANG_1 113.800] | 527903 [HOBBS_PLT3 118.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527161 [MUSTANG_1 113.800] | 528361 [MADDOX_1 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527161 [MUSTANG_1 113.800] | 526936 [YOAKUM_345 345.00]-527896 [HOBBS_INT 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527161 [MUSTANG_1 113.800] | 527655 [RSVLT_CC_E 7345.00]-527656 [CROSSROADS 7345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues |

| Year | NERC TPL-001-4 event | Contingency 1 | Contingency 2 | Stability Analysis Results | | |
|---|---|---|---|---|---|---|
| | | | | Tolk Unit1 and 2 OFF | Tolk unit 1 converted to Synchronous Condenser; Tolk unit 2 OFF | Tolk unit 1 and 2 converted to Synchronous Condenser |
| | | | | | | observed |
| 2026W5 | P3 | 527161 [MUSTANG_1 113.800] | 527656 [CROSSROADS 7345.00]-527802 [EDDY_CNTY 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527161 [MUSTANG_1 113.800] | 527896 [HOBBS_INT 7345.00]-527965 [KIOWA 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527161 [MUSTANG_1 113.800] | 525832 [TUCO_INT 7345.00]-511456 [O.K.U.-7 345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527161 [MUSTANG_1 113.800] | 525832 [TUCO_INT 7345.00]-515458 [BORDER 7345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527162 [MUSTANG_2 113.800] | 526331 [JONES_1 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527162 [MUSTANG_2 113.800] | 526332 [JONES_2 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527162 [MUSTANG_2 113.800] | 527161 [MUSTANG_1 113.800] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527162 [MUSTANG_2 113.800] | 527163 [MUSTANG_3 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527162 [MUSTANG_2 113.800] | 527884 [CUNINGHAM4 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527162 [MUSTANG_2 113.800] | 527901 [HOBBS_PLT1 118.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527162 [MUSTANG_2 113.800] | 527902 [HOBBS_PLT2 118.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527162 [MUSTANG_2 113.800] | 527903 [HOBBS_PLT3 118.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527162 [MUSTANG_2 113.800] | 528361 [MADDOX_1 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527162 [MUSTANG_2 113.800] | 526936 [YOAKUM_345 345.00]-527896 [HOBBS_INT 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527162 [MUSTANG_2 113.800] | 527655 [RSVLT_CC_E 7345.00]-527656 [CROSSROADS 7345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527162 [MUSTANG_2 113.800] | 527656 [CROSSROADS 7345.00]-527802 [EDDY_CNTY 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527162 [MUSTANG_2 113.800] | 527896 [HOBBS_INT 7345.00]-527965 [KIOWA 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527162 [MUSTANG_2 113.800] | 525832 [TUCO_INT 7345.00]-511456 [O.K.U.-7 345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |

| Year | NERC TPL-001-4 event | Contingency 1 | Contingency 2 | Stability Analysis Results | | |
|---|---|---|---|---|---|---|
| | | | | Tolk Unit1 and 2 OFF | Tolk unit 1 converted to Synchronous Condenser; Tolk unit 2 OFF | Tolk unit 1 and 2 converted to Synchronous Condenser |
| 2026W5 | P3 | 527162 [MUSTANG_2 113.800] | 525832 [TUCO_INT 7345.00]-515458 [BORDER 7345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 523972 [HARRNGTON2 124.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 526331 [JONES_1 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 526332 [JONES_2 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 527161 [MUSTANG_1 113.800] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 527162 [MUSTANG_2 113.800] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 527884 [CUNINGHAM4 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 527901 [HOBBS_PLT1 118.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 527902 [HOBBS_PLT2 118.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 527903 [HOBBS_PLT3 118.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 528361 [MADDOX_1 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 525549 [TOLK 7345.00]-527656 [CROSSROADS 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 525832 [TUCO_INT 7345.00]-526936 [YOAKUM_345 345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 526936 [YOAKUM_345 345.00]-527896 [HOBBS_INT 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 527655 [RSVLT_CC_E 7345.00]-527656 [CROSSROADS 7345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 527656 [CROSSROADS 7345.00]-527802 [EDDY_CNTY 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 527896 [HOBBS_INT 7345.00]-527965 [KIOWA 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 525832 [TUCO_INT 7345.00]-511456 [O.K.U.-7 345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527163 [MUSTANG_3 122.000] | 525832 [TUCO_INT 7345.00]-515458 [BORDER 7345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage |

| Year | NERC TPL-001-4 event | Contingency 1 | Contingency 2 | Stability Analysis Results | | |
|---|---|---|---|---|---|---|
| | | | | Tolk Unit1 and 2 OFF | Tolk unit 1 converted to Synchronous Condenser; Tolk unit 2 OFF | Tolk unit 1 and 2 converted to Synchronous Condenser |
| | | | | | | collapse |
| 2026W5 | P3 | 527884 [CUNINGHAM4 113.800] | 526331 [JONES_1 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527884 [CUNINGHAM4 113.800] | 526332 [JONES_2 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527884 [CUNINGHAM4 113.800] | 527161 [MUSTANG_1 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527884 [CUNINGHAM4 113.800] | 527162 [MUSTANG_2 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527884 [CUNINGHAM4 113.800] | 527163 [MUSTANG_3 122.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527884 [CUNINGHAM4 113.800] | 527901 [HOBBS_PLT1 118.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527884 [CUNINGHAM4 113.800] | 527902 [HOBBS_PLT2 118.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527884 [CUNINGHAM4 113.800] | 527903 [HOBBS_PLT3 118.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527884 [CUNINGHAM4 113.800] | 528361 [MADDOX_1 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527884 [CUNINGHAM4 113.800] | 527655 [RSVLT_CC_E 7345.00]-527656 [CROSSROADS 7345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527884 [CUNINGHAM4 113.800] | 527656 [CROSSROADS 7345.00]-527802 [EDDY_CNTY 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527884 [CUNINGHAM4 113.800] | 525832 [TUCO_INT 7345.00]-511456 [O.K.U.-7 345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527884 [CUNINGHAM4 113.800] | 525832 [TUCO_INT 7345.00]-515458 [BORDER 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527901 [HOBBS_PLT1 118.000] | 526331 [JONES_1 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527901 [HOBBS_PLT1 118.000] | 526332 [JONES_2 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527901 [HOBBS_PLT1 118.000] | 527161 [MUSTANG_1 113.800] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527901 [HOBBS_PLT1 118.000] | 527162 [MUSTANG_2 113.800] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527901 [HOBBS_PLT1 118.000] | 527163 [MUSTANG_3 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527901 [HOBBS_PLT1 118.000] | 527884 [CUNINGHAM4 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues |

| Year | NERC TPL-001-4 event | Contingency 1 | Contingency 2 | Stability Analysis Results | | |
|---|---|---|---|---|---|---|
| | | | | Tolk Unit1 and 2 OFF | Tolk unit 1 converted to Synchronous Condenser; Tolk unit 2 OFF | Tolk unit 1 and 2 converted to Synchronous Condenser |
| | | | | | | observed |
| 2026W5 | P3 | 527901 [HOBBS_PLT1 118.000] | 527902 [HOBBS_PLT2 118.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527901 [HOBBS_PLT1 118.000] | 527903 [HOBBS_PLT3 118.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527901 [HOBBS_PLT1 118.000] | 528361 [MADDOX_1 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527901 [HOBBS_PLT1 118.000] | 525832 [TUCO_INT 7345.00]-526936 [YOAKUM_345 345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527901 [HOBBS_PLT1 118.000] | 526936 [YOAKUM_345 345.00]-527896 [HOBBS_INT 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527901 [HOBBS_PLT1 118.000] | 527655 [RSVLT_CC_E 7345.00]-527656 [CROSSROADS 7345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527901 [HOBBS_PLT1 118.000] | 527656 [CROSSROADS 7345.00]-527802 [EDDY_CNTY 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527901 [HOBBS_PLT1 118.000] | 527896 [HOBBS_INT 7345.00]-527965 [KIOWA 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527901 [HOBBS_PLT1 118.000] | 525832 [TUCO_INT 7345.00]-511456 [O.K.U.-7 345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527901 [HOBBS_PLT1 118.000] | 525832 [TUCO_INT 7345.00]-515458 [BORDER 7345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527902 [HOBBS_PLT2 118.000] | 526331 [JONES_1 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527902 [HOBBS_PLT2 118.000] | 526332 [JONES_2 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527902 [HOBBS_PLT2 118.000] | 527161 [MUSTANG_1 113.800] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527902 [HOBBS_PLT2 118.000] | 527162 [MUSTANG_2 113.800] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527902 [HOBBS_PLT2 118.000] | 527163 [MUSTANG_3 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527902 [HOBBS_PLT2 118.000] | 527884 [CUNINGHAM4 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527902 [HOBBS_PLT2 118.000] | 527901 [HOBBS_PLT1 118.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527902 [HOBBS_PLT2 118.000] | 527903 [HOBBS_PLT3 118.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |

| Year | NERC TPL-001-4 event | Contingency 1 | Contingency 2 | Stability Analysis Results | | |
|---|---|---|---|---|---|---|
| | | | | Tolk Unit1 and 2 OFF | Tolk unit 1 converted to Synchronous Condenser; Tolk unit 2 OFF | Tolk unit 1 and 2 converted to Synchronous Condenser |
| 2026W5 | P3 | 527902 [HOBBS_PLT2 118.000] | 528361 [MADDOX_1 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527902 [HOBBS_PLT2 118.000] | 525832 [TUCO_INT 7345.00]-526936 [YOAKUM_345 345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527902 [HOBBS_PLT2 118.000] | 526936 [YOAKUM_345 345.00]-527896 [HOBBS_INT 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527902 [HOBBS_PLT2 118.000] | 527655 [RSVLT_CC_E 7345.00]-527656 [CROSSROADS 7345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 527902 [HOBBS_PLT2 118.000] | 527656 [CROSSROADS 7345.00]-527802 [EDDY_CNTY 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527902 [HOBBS_PLT2 118.000] | 527896 [HOBBS_INT 7345.00]-527965 [KIOWA 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 527902 [HOBBS_PLT2 118.000] | 525832 [TUCO_INT 7345.00]-511456 [O.K.U.-7 345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | Solution diverges; voltage collapse |
| 2026W5 | P3 | 527902 [HOBBS_PLT2 118.000] | 525832 [TUCO_INT 7345.00]-515458 [BORDER 7345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P1 | UNIT 1 BUS 527903 [HOBBS_PLT3 118.000] | | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 528331 [ASGI10-010 113.800] | 526331 [JONES_1 122.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 528331 [ASGI10-010 113.800] | 526332 [JONES_2 122.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 528331 [ASGI10-010 113.800] | 527903 [HOBBS_PLT3 118.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 528331 [ASGI10-010 113.800] | 527655 [RSVLT_CC_E 7345.00]-527656 [CROSSROADS 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 528331 [ASGI10-010 113.800] | 525832 [TUCO_INT 7345.00]-511456 [O.K.U.-7 345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 528361 [MADDOX_1 113.800] | 526331 [JONES_1 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 528361 [MADDOX_1 113.800] | 526332 [JONES_2 122.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 528361 [MADDOX_1 113.800] | 527161 [MUSTANG_1 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 528361 [MADDOX_1 113.800] | 527162 [MUSTANG_2 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 528361 [MADDOX_1 113.800] | 527163 [MUSTANG_3 122.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 528361 [MADDOX_1 113.800] | 527884 [CUNINGHAM4 113.800] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |

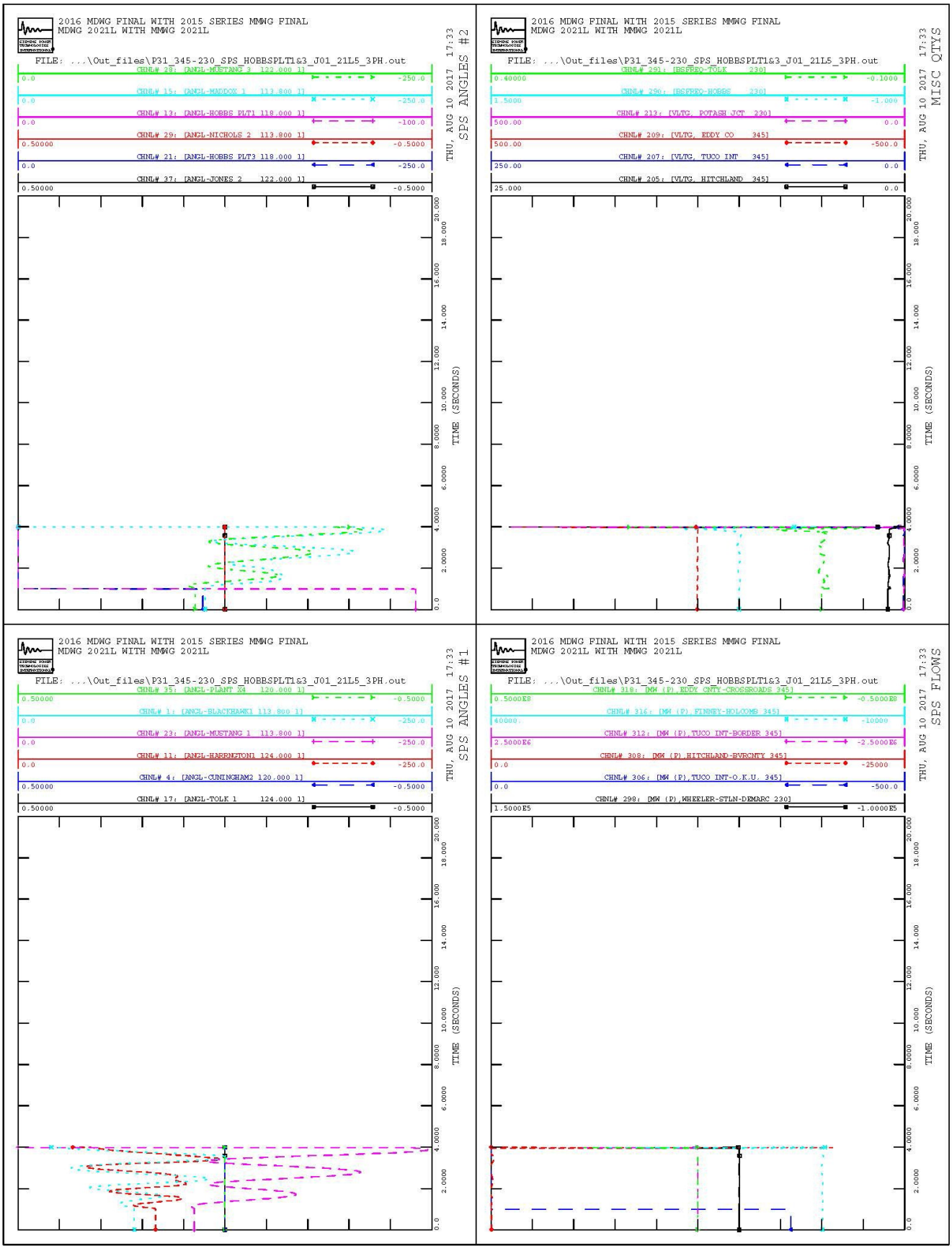
| Year | NERC TPL-001-4 event | Contingency 1 | Contingency 2 | Stability Analysis Results | | |
|---|---|---|---|---|---|---|
| | | | | Tolk Unit1 and 2 OFF | Tolk unit 1 converted to Synchronous Condenser; Tolk unit 2 OFF | Tolk unit 1 and 2 converted to Synchronous Condenser |
| 2026W5 | P3 | 528361 [MADDOX_1 113.800] | 527901 [HOBBS_PLT1 118.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 528361 [MADDOX_1 113.800] | 527902 [HOBBS_PLT2 118.000] | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 528361 [MADDOX_1 113.800] | 527903 [HOBBS_PLT3 118.000] | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 528361 [MADDOX_1 113.800] | 525832 [TUCO_INT 7345.00]-526936 [YOAKUM_345 345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 528361 [MADDOX_1 113.800] | 527655 [RSVLT_CC_E 7345.00]-527656 [CROSSROADS 7345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 528361 [MADDOX_1 113.800] | 527656 [CROSSROADS 7345.00]-527802 [EDDY_CNTY 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P3 | 528361 [MADDOX_1 113.800] | 525832 [TUCO_INT 7345.00]-511456 [O.K.U.-7 345.00] CKT 1 | Solution diverges; voltage collapse | Solution diverges; voltage collapse | No voltage issues observed |
| 2026W5 | P3 | 528361 [MADDOX_1 113.800] | 525832 [TUCO_INT 7345.00]-515458 [BORDER 7345.00] CKT 1 | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |
| 2026W5 | P1 | Tuco to OKU 345kV (J01) | | Solution diverges; voltage collapse | No voltage issues observed | No voltage issues observed |

## 5. Conclusion

This system impact study performed showed the need to convert one of the Tolk units to synchronous condenser operation immediately and to convert both the Tolk units to synchronous condensers by mid 2020s to mitigate TPL-001-4 P3 multiple contingency (loss of generator followed by N-1 transmission outage) event issues.

It is also observed that there is a huge real power deficiency in SPS area by mid 2020s causing severe steady state issues. Conversion of both the Tolk units to synchronous condenser operation alone cannot mitigate all the transmission system performance issues in later years. New generation installation will greatly improve system performance with real and reactive power capability with the changed operation of the Tolk units.

## Appendix A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CHNL# 11: [ANGL-HARRINGTON1 124.000 1]
CHNL# 4: [ANGL-CUNNINGHAM2 120.000 1]
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CHNL# 308: [MW (P),HITCHLAND-BVRCNTY 345]
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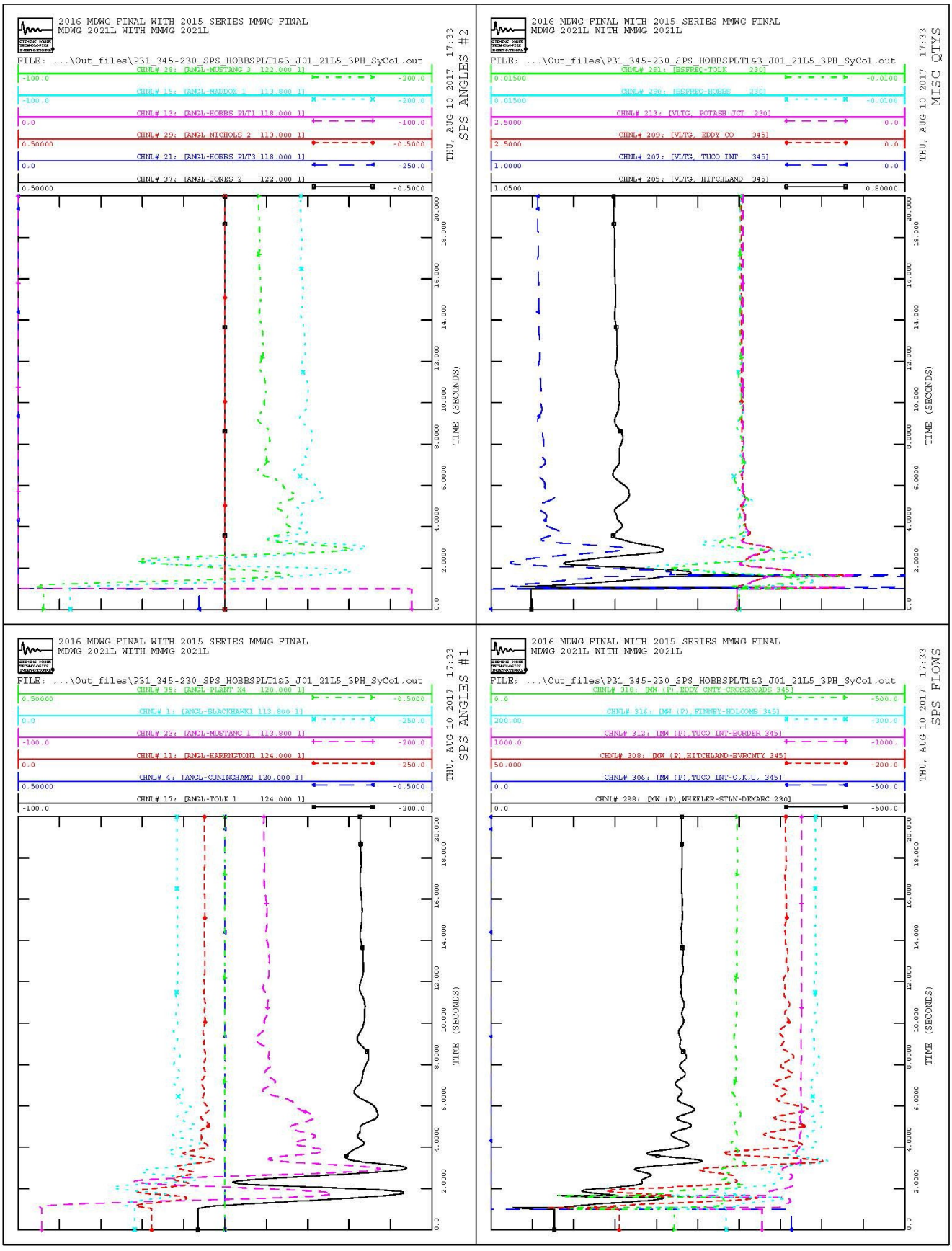
TIME (SECONDS)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CHNL# 207: [VLTG, TUCO INT 345]
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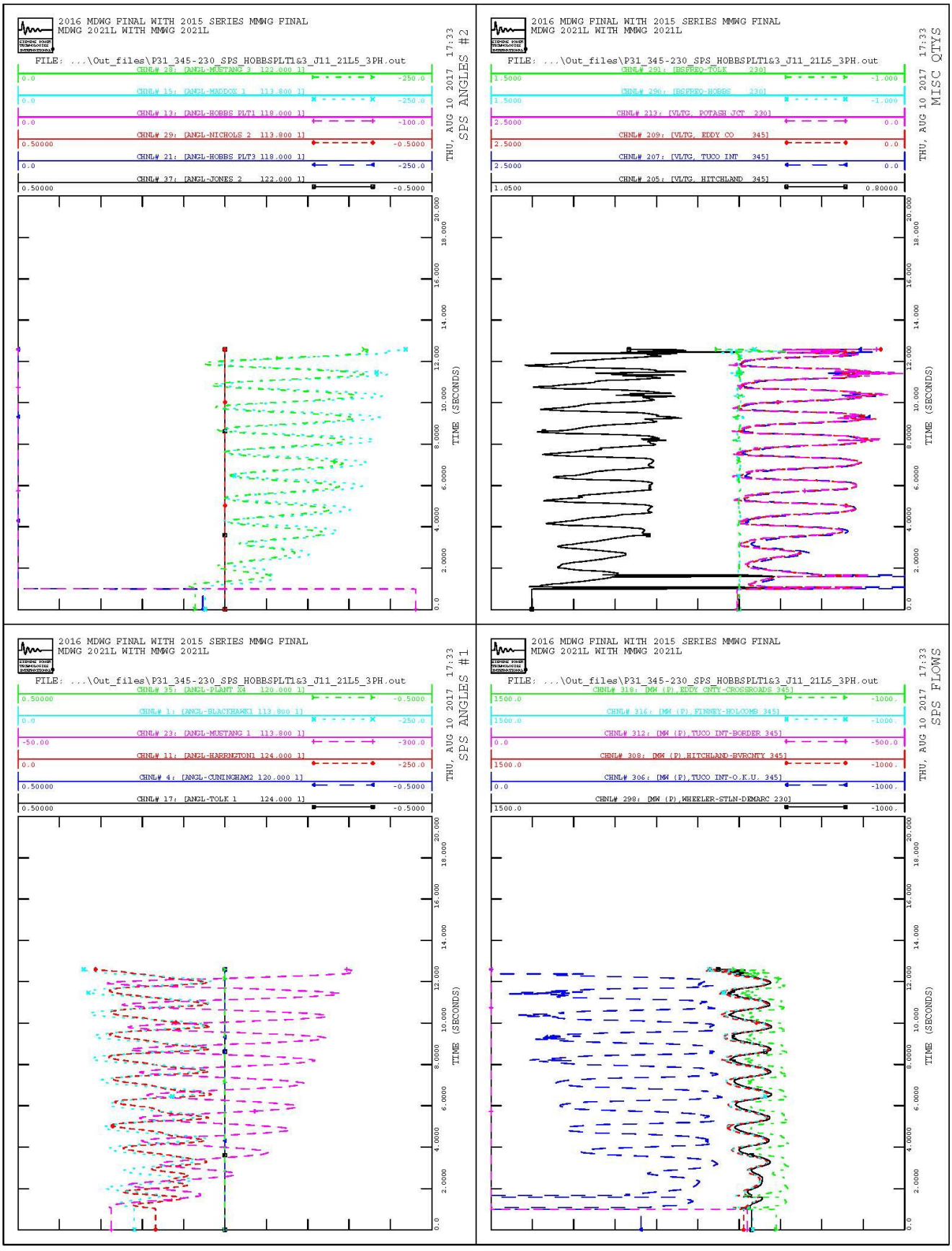
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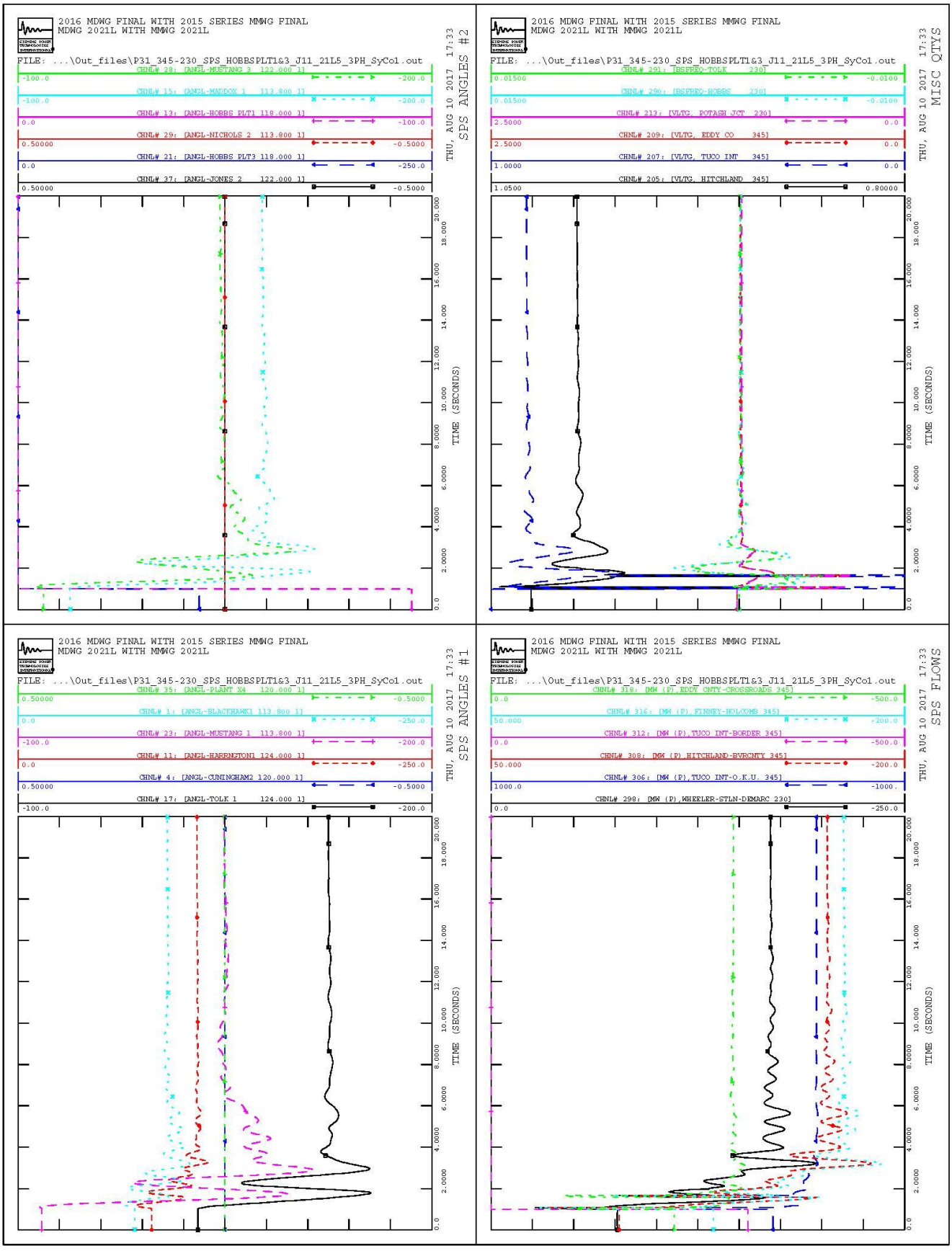
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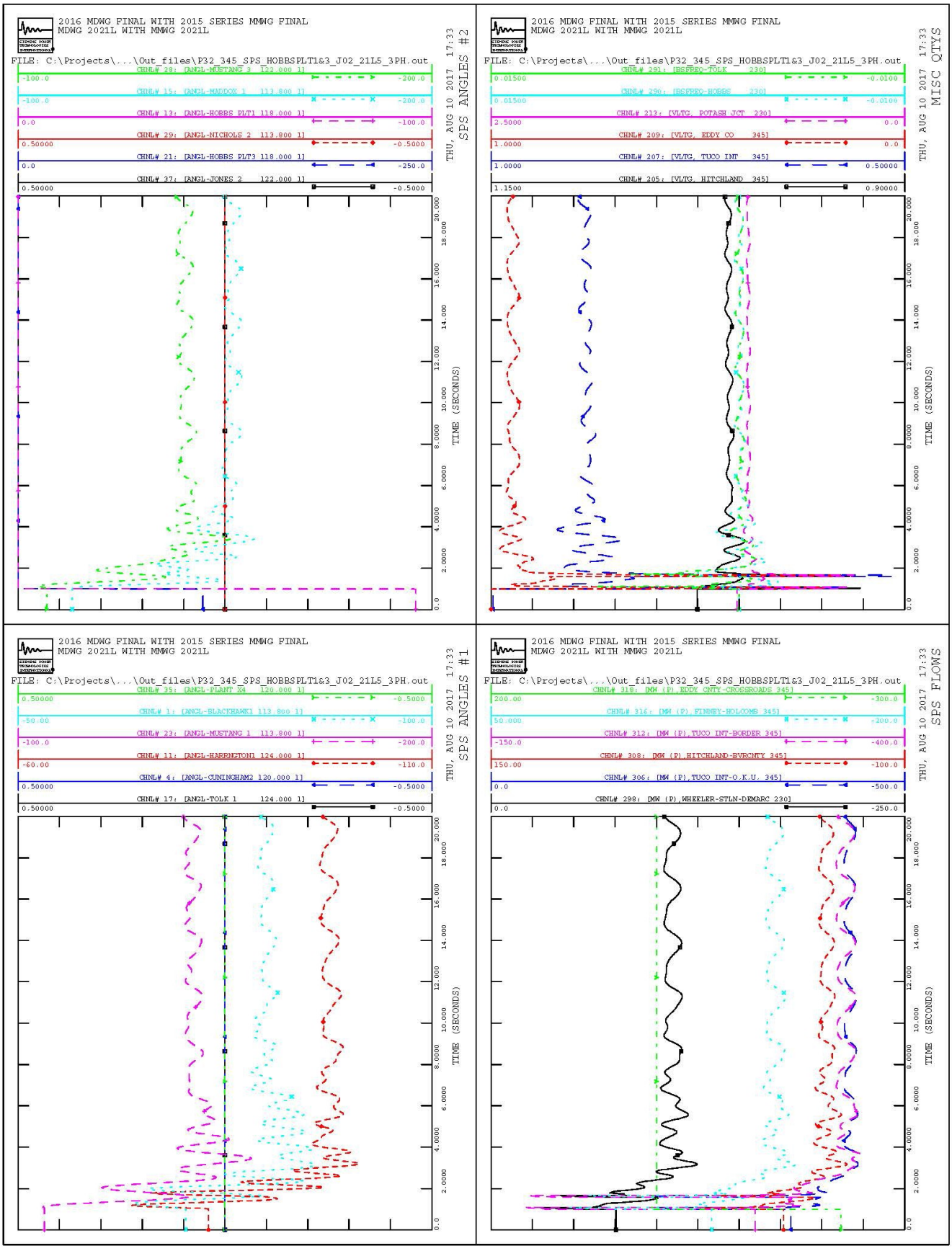
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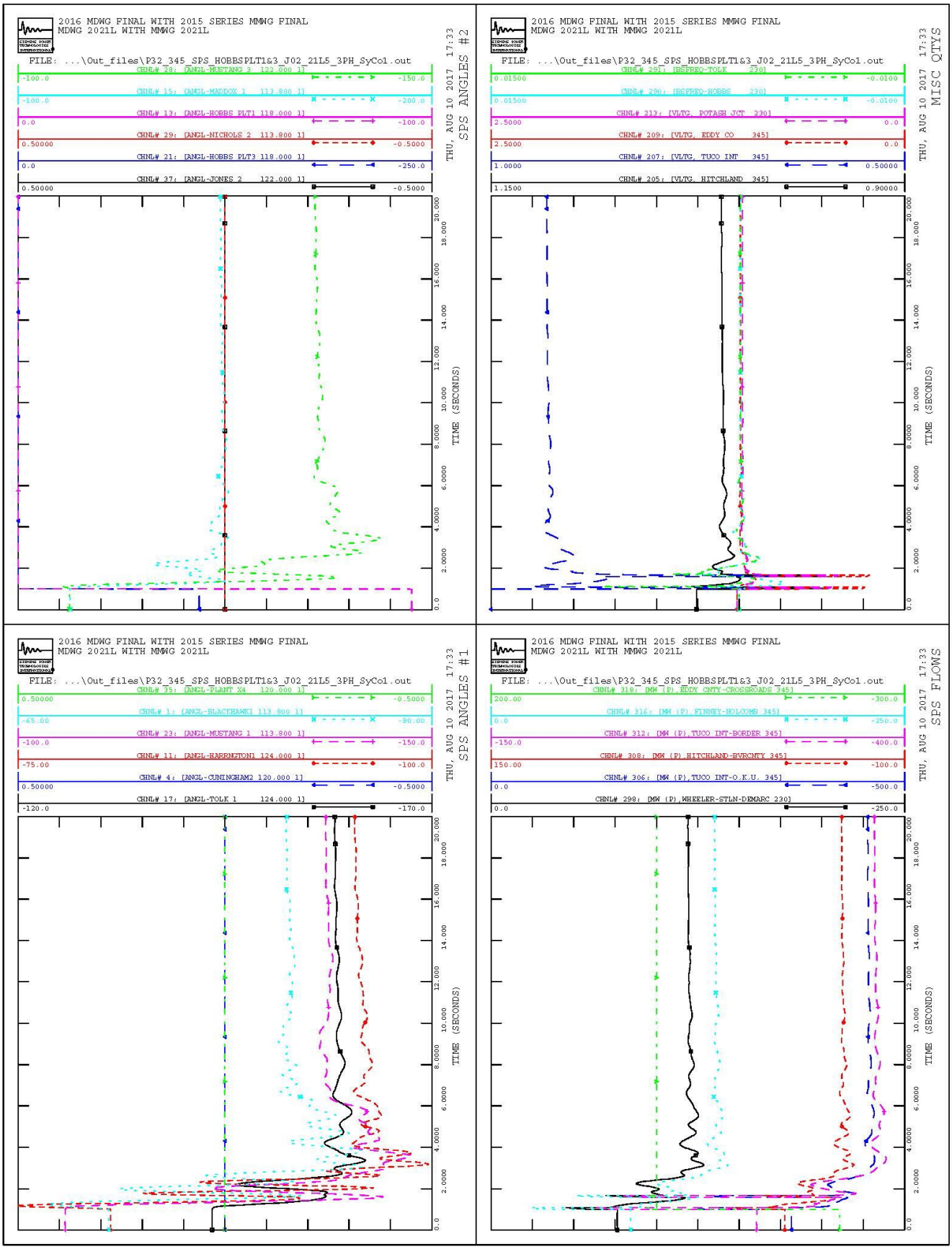
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CHNL# 13: [ANGL-HOBBS PLT1 118.000 1]
CHNL# 29: [ANGL-NICHOLS 2 113.800 1]
CHNL# 21: [ANGL-HOBBS PLT3 118.000 1]
CHNL# 37: [ANGL-JONES 2 122.000 1]
TIME (SECONDS)
2016 MDWG FINAL WITH 2015 SERIES MMWG FINAL
MDWG 2021L WITH MMWG 2021L
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CHNL# 213: [VLTG, POTASH JCT 230]
CHNL# 209: [VLTG, EDDY CO 345]
CHNL# 207: [VLTG, TUCO INT 345]
CHNL# 205: [VLTG, HITCHLAND 345]
TIME (SECONDS)
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CHNL# 1: [ANGL-BLACKHAWK1 113.800 1]
CHNL# 23: [ANGL-MUSTANG 1 113.800 1]
CHNL# 11: [ANGL-HARRINGTON1 124.000 1]
CHNL# 4: [ANGL-CUNINGHAM2 120.000 1]
CHNL# 17: [ANGL-TOLK 1 124.000 1]
TIME (SECONDS)
2016 MDWG FINAL WITH 2015 SERIES MMWG FINAL
MDWG 2021L WITH MMWG 2021L
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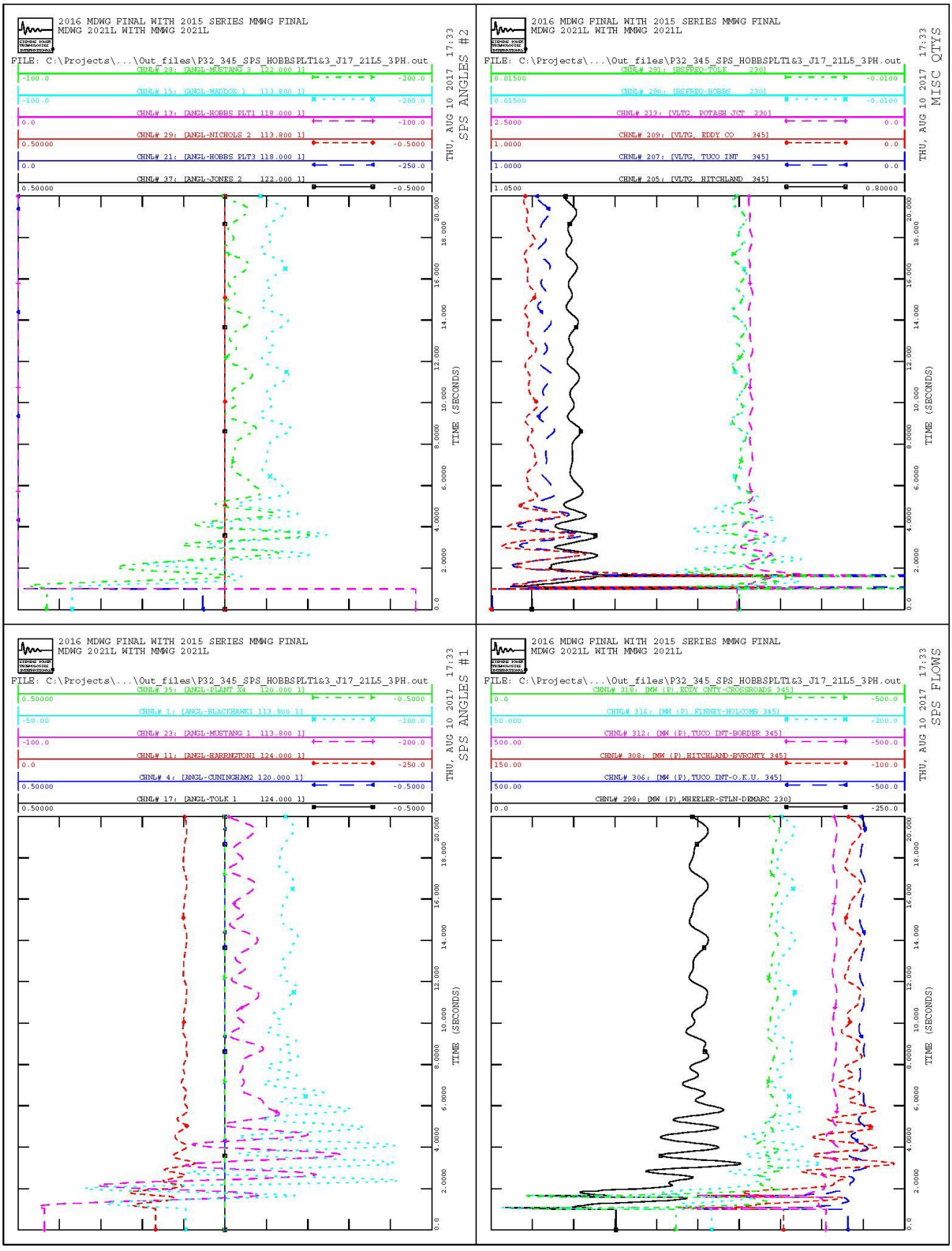
CHNL# 316: [MW (P),FINNEY-HOLCOMB 345]
CHNL# 312: [MW (P),TUCO INT-BORDER 345]
CHNL# 308: [MW (P),HITCHLAND-BVRCNTY 345]
CHNL# 306: [MW (P),TUCO INT-O.K.U. 345]
CHNL# 299: [MW (P),WHEELER-STLN-DEMARC 230]
TIME (SECONDS)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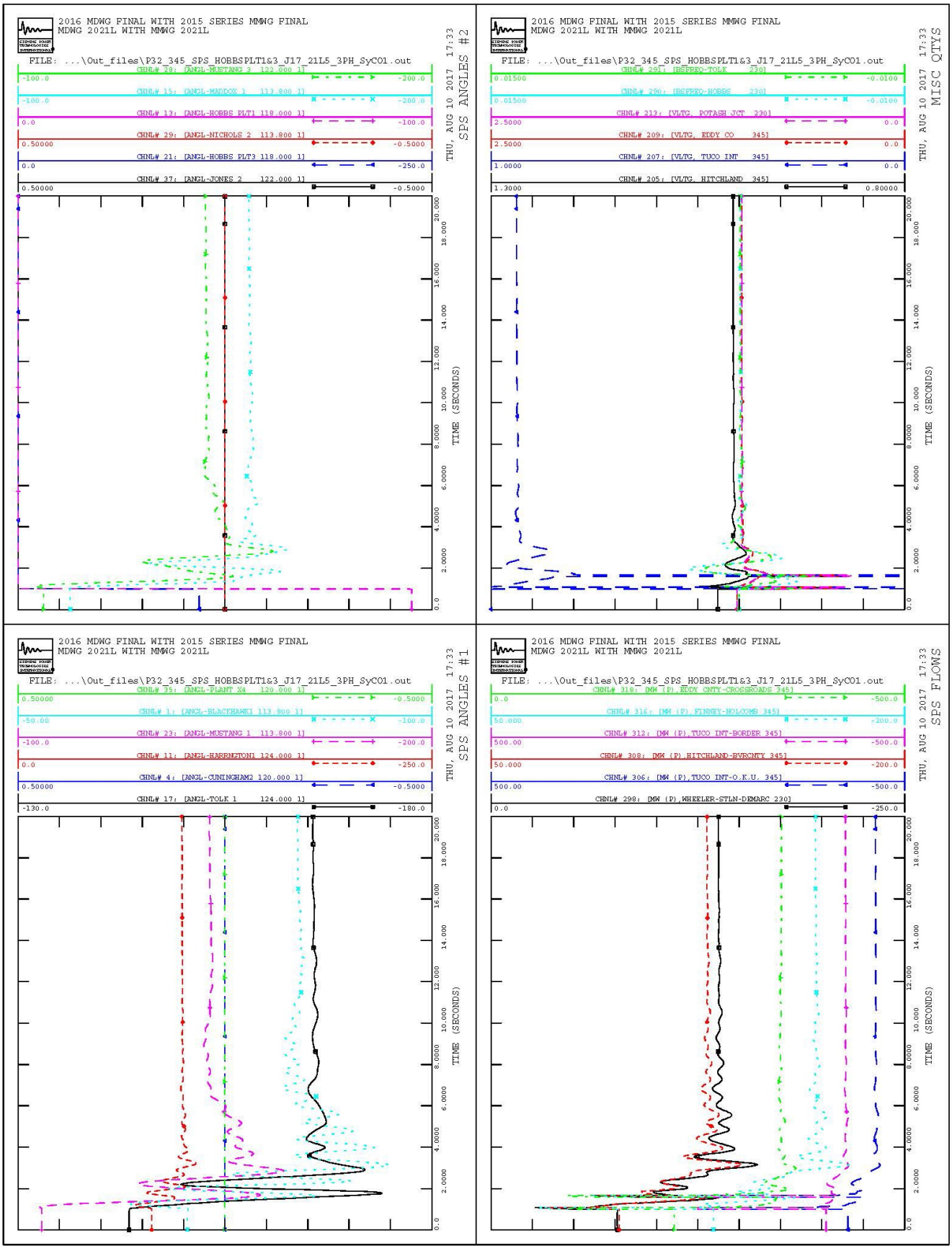
SPS ANGLES #2
TIME (SECONDS)
MISC QTYS
SPS ANGLES #1
SPS FLOWS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CHNL# 29: [ANGL-NICHOLS 2 113.800 1]
CHNL# 21: [ANGL-HOBBS PLT3 118.000 1]
CHNL# 37: [ANGL-JONES 2 122.000 1]
TIME (SECONDS)
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MDWG 2021L WITH MMWG 2021L
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CHNL# 290: [BSPREQ-HOBBS 230]
CHNL# 213: [VLTG, POTASH JCT 230]
CHNL# 209: [VLTG, EDDY CO 345]
CHNL# 207: [VLTG, TUCO INT 345]
CHNL# 205: [VLTG, HITCHLAND 345]
TIME (SECONDS)
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CHNL# 23: [ANGL-MUSTANG 1 113.800 1]
CHNL# 11: [ANGL-HARRINGTON1 124.000 1]
CHNL# 4: [ANGL-CUNNINGHAM2 120.000 1]
CHNL# 17: [ANGL-TOLK 1 124.000 1]
TIME (SECONDS)
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MDWG 2021L WITH MMWG 2021L
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SPS FLOWS
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CHNL# 316: [MW (P),FINNEY-HOLCOMB 345]
CHNL# 312: [MW (P),TUCO INT-BORDER 345]
CHNL# 308: [MW (P),HITCHLAND-BVRCNTY 345]
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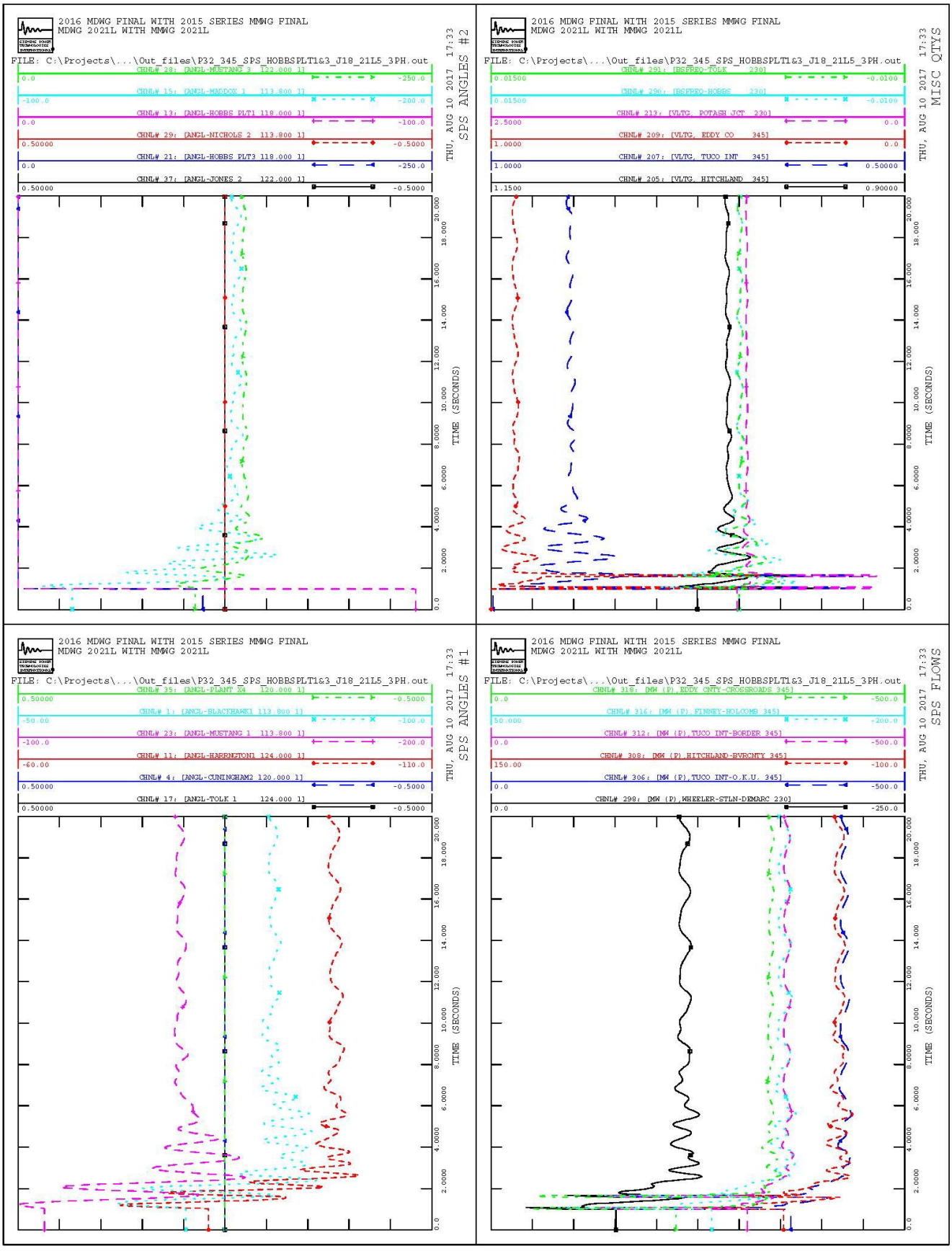
CHNL# 298: [MW (P),WHEELER-STLN-DEMARC 230]
TIME (SECONDS)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MDWG 2021L WITH MMWG 2021L
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CHNL# 15: [ANGL-MADDOX 1 113.800 1]
CHNL# 13: [ANGL-HOBBS PLT1 118.000 1]
CHNL# 29: [ANGL-NICHOLS 2 113.800 1]
CHNL# 21: [ANGL-HOBBS PLT3 118.000 1]
CHNL# 37: [ANGL-JONES 2 122.000 1]
TIME (SECONDS)
2016 MDWG FINAL WITH 2015 SERIES MMWG FINAL
MDWG 2021L WITH MMWG 2021L
FILE: C:\Projects\...\Out_files\P32_345_SPS_HOBBSPLT1&3_J18_21L5_3PH.out
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MISC QTYS
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CHNL# 290: [BSPREG-HOBBS 230]
CHNL# 213: [VLTG, POTASH JCT 230]
CHNL# 209: [VLTG, EDDY CO 345]
CHNL# 207: [VLTG, TUCO INT 345]
CHNL# 205: [VLTG, HITCHLAND 345]
TIME (SECONDS)
2016 MDWG FINAL WITH 2015 SERIES MMWG FINAL
MDWG 2021L WITH MMWG 2021L
FILE: C:\Projects\...\Out_files\P32_345_SPS_HOBBSPLT1&3_J18_21L5_3PH.out
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CHNL# 1: [ANGL-BLACKHAWK1 113.800 1]
CHNL# 23: [ANGL-MUSTANG 1 113.800 1]
CHNL# 11: [ANGL-HARRINGTON1 124.000 1]
CHNL# 4: [ANGL-CUNINGHAM2 120.000 1]
CHNL# 17: [ANGL-TOLK 1 124.000 1]
TIME (SECONDS)
2016 MDWG FINAL WITH 2015 SERIES MMWG FINAL
MDWG 2021L WITH MMWG 2021L
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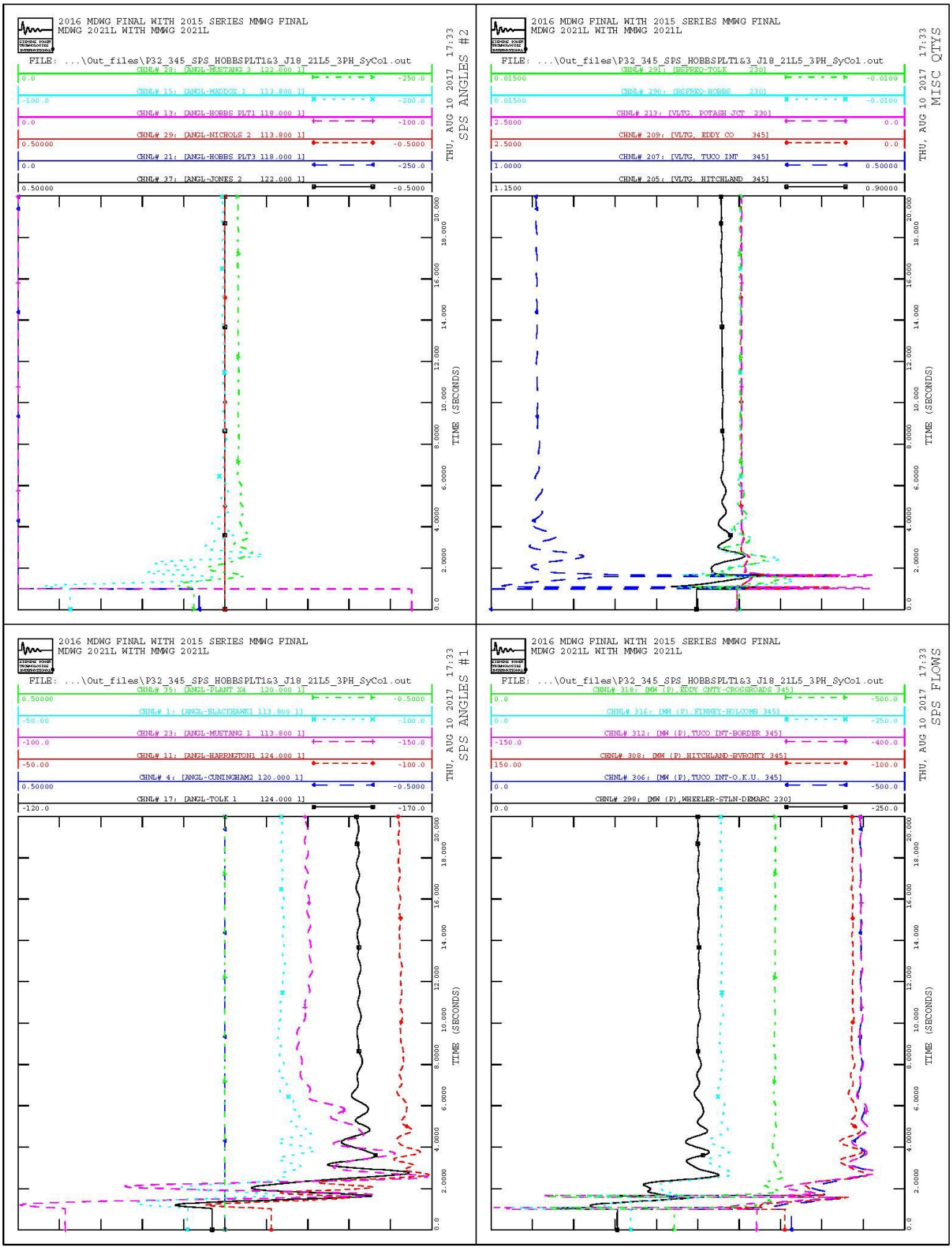
CHNL# 316: [MW (P),FINNEY-HOLCOMB 345]
CHNL# 312: [MW (P),TUCO INT-BORDER 345]
CHNL# 308: [MW (P),HITCHLAND-BVRCNTY 345]
CHNL# 306: [MW (P),TUCO INT-O.K.U. 345]
CHNL# 298: [MW (P),WHEELER-STLN-DEMARC 230]
TIME (SECONDS)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MDWG 2021L WITH MMWG 2021L
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CHNL# 13: [ANGL-HOBBS PLT1 118.000 1]
CHNL# 29: [ANGL-NICHOLS 2 113.800 1]
CHNL# 21: [ANGL-HOBBS PLT3 118.000 1]
CHNL# 37: [ANGL-JONES 2 122.000 1]
TIME (SECONDS)
2016 MDWG FINAL WITH 2015 SERIES MMWG FINAL
MDWG 2021L WITH MMWG 2021L
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CHNL# 290: [BSPREG-HOBBS 230]
CHNL# 213: [VLTG, POTASH JCT 230]
CHNL# 209: [VLTG, EDDY CO 345]
CHNL# 207: [VLTG, TUCO INT 345]
CHNL# 205: [VLTG, HITCHLAND 345]
TIME (SECONDS)
2016 MDWG FINAL WITH 2015 SERIES MMWG FINAL
MDWG 2021L WITH MMWG 2021L
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CHNL# 1: [ANGL-BLACKHAWK1 113.800 1]
CHNL# 23: [ANGL-MUSTANG 1 113.800 1]
CHNL# 11: [ANGL-HARRINGTON1 124.000 1]
CHNL# 4: [ANGL-CUNNINGHAM2 120.000 1]
CHNL# 17: [ANGL-TOLK 1 124.000 1]
TIME (SECONDS)
2016 MDWG FINAL WITH 2015 SERIES MMWG FINAL
MDWG 2021L WITH MMWG 2021L
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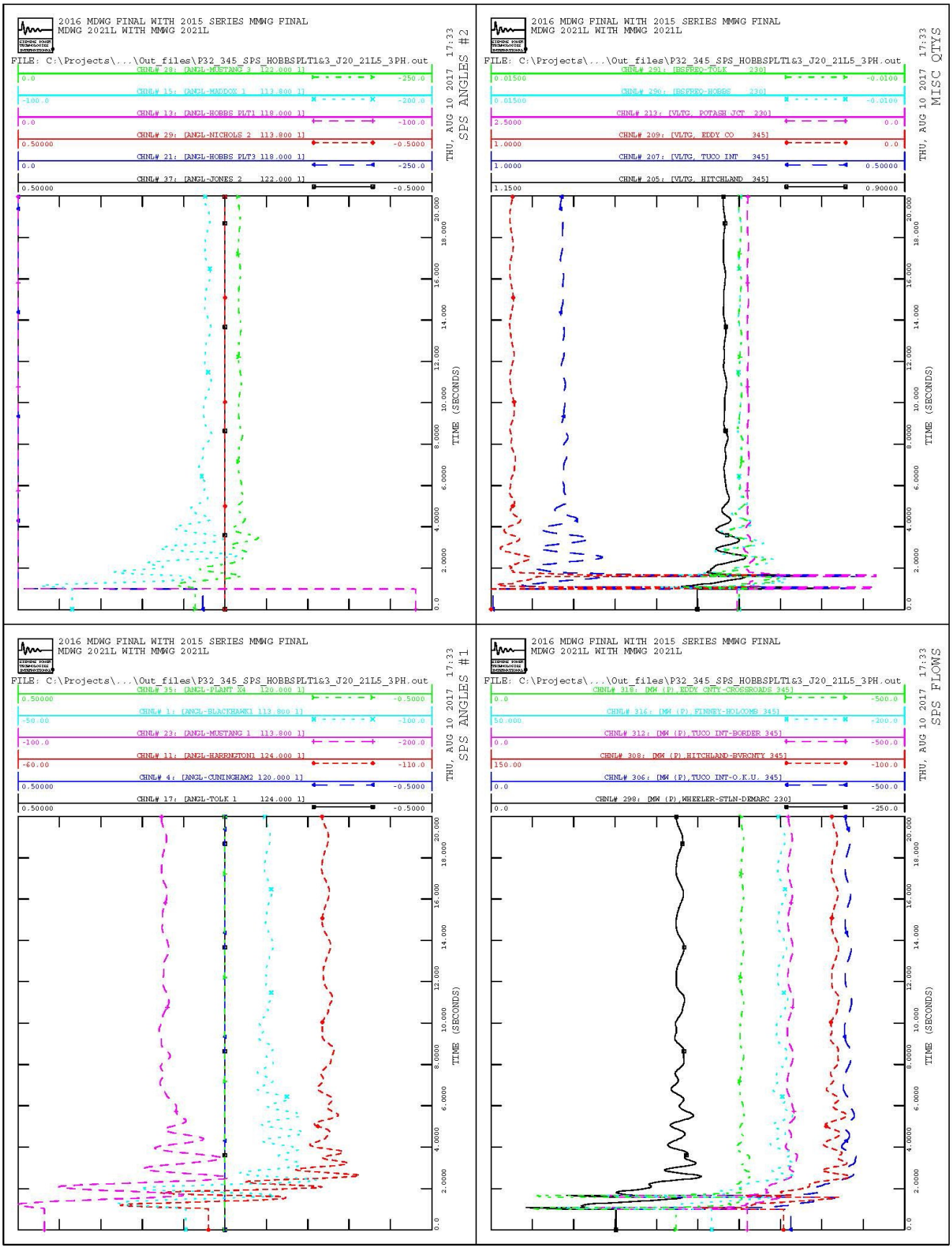
CHNL# 298: [MW (P),WHEELER-STLN-DEMARC 230]
TIME (SECONDS)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MDWG 2021L WITH MMWG 2021L
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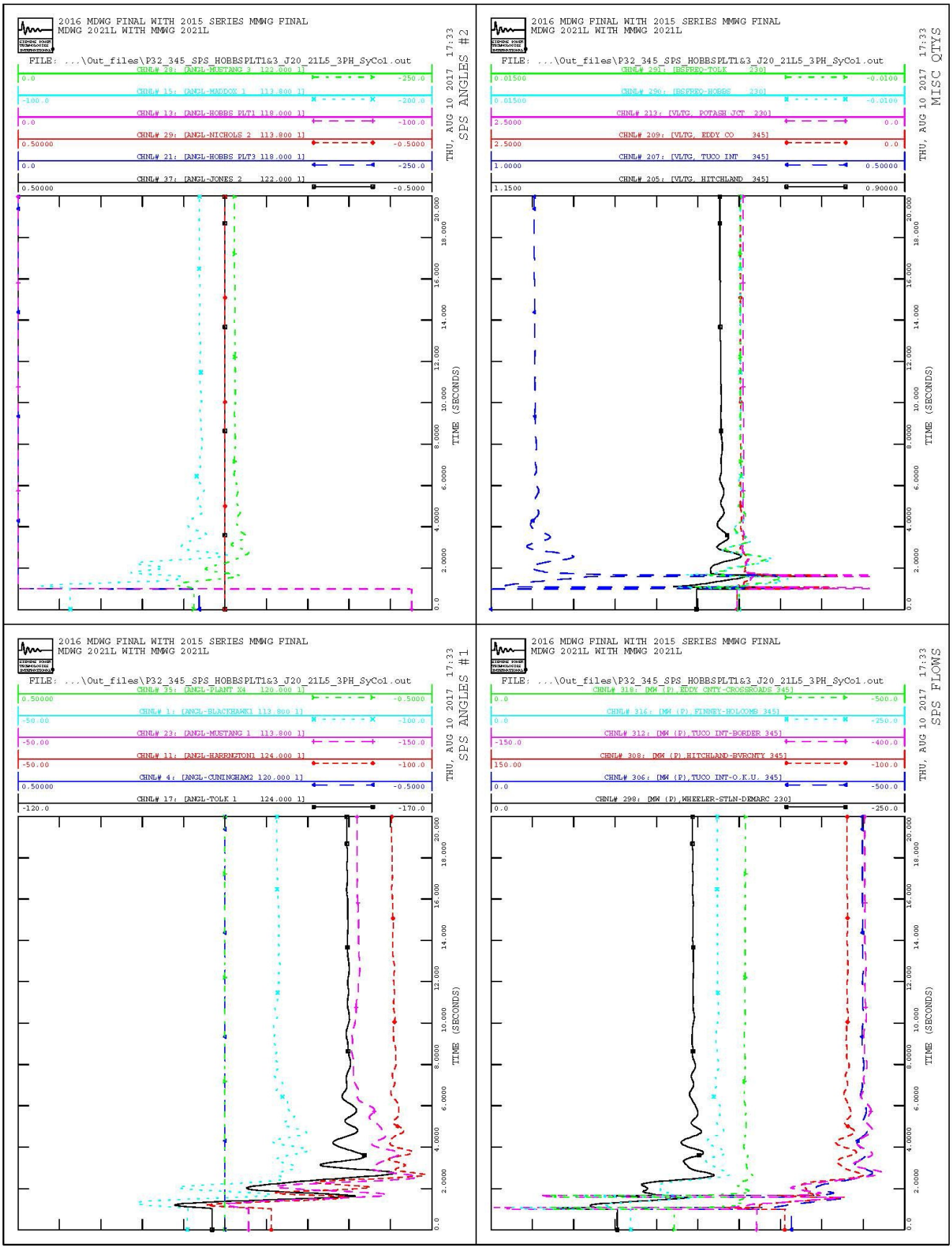
TIME (SECONDS)
MISC QTYS
SPS ANGLES #1
SPS FLOWS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CHNL# 29: [ANGL-NICHOLS 2 113.800 1]
CHNL# 21: [ANGL-HOBBS PLT3 118.000 1]
CHNL# 37: [ANGL-JONES 2 122.000 1]
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TIME (SECONDS)
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CHNL# 209: [VLTG, EDDY CO 345]
CHNL# 207: [VLTG, TUCO INT 345]
CHNL# 205: [VLTG, HITCHLAND 345]
MISC QTYS
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CHNL# 1: [ANGL-BLACKHAWK1 113.800 1]
CHNL# 23: [ANGL-MUSTANG 1 113.800 1]
CHNL# 11: [ANGL-HARRINGTON1 124.000 1]
CHNL# 4: [ANGL-CUNNINGHAM2 120.000 1]
CHNL# 17: [ANGL-TOLK 1 124.000 1]
SPS ANGLES #1
CHNL# 318: [MW (P),EDDY CNTY-CROSSROADS 345]
CHNL# 316: [MW (P),FINNEY-HOLCOMB 345]
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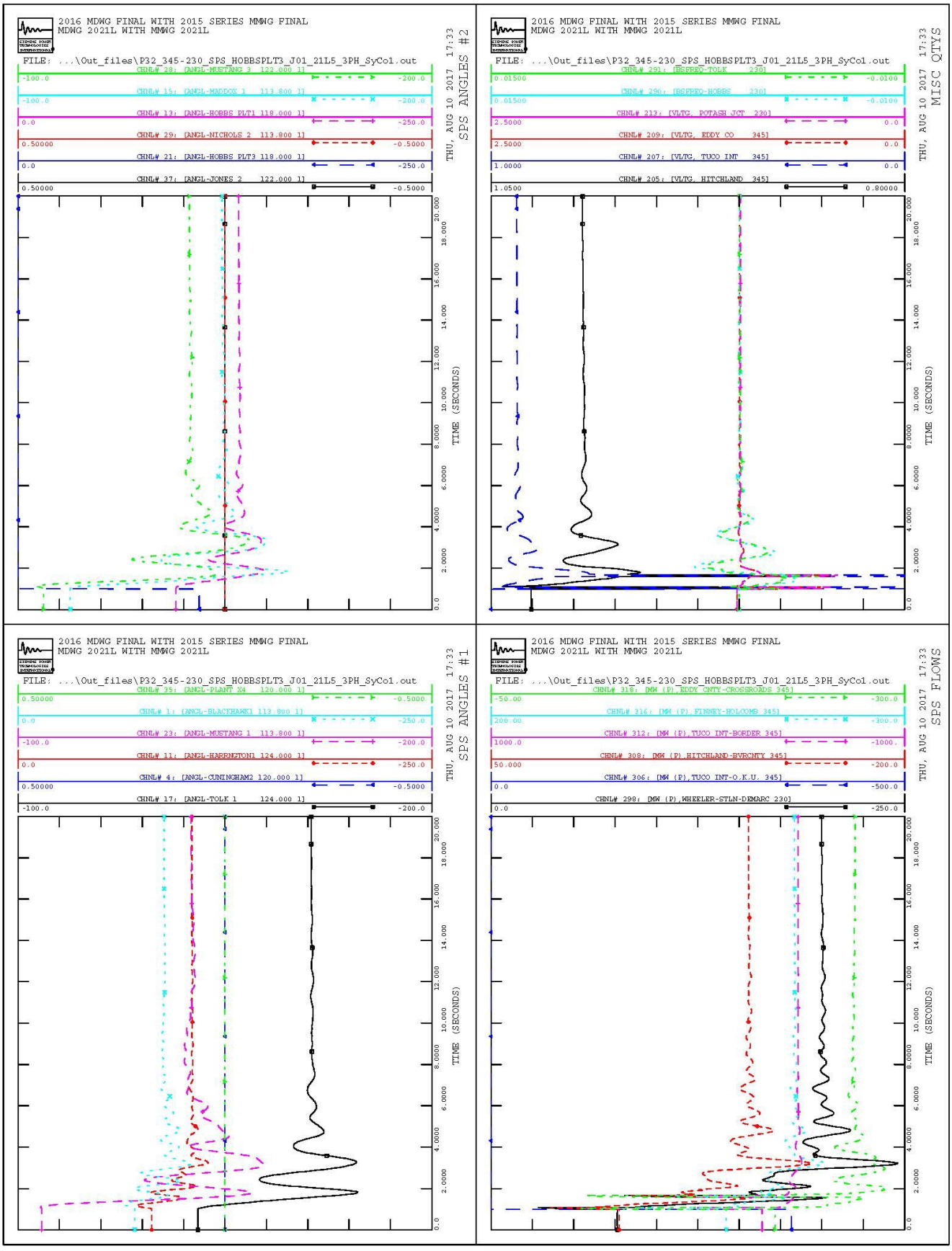
SPS FLOWS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SPS ANGLES #2
TIME (SECONDS)
MISC QTYS
SPS ANGLES #1
SPS FLOWS

**Southwestern Public Service Company**

**Total Company SPS Operation and Maintenance Expenses**

| Line No. | FERC Acct | Account Description | SPS Total Company O&M Expense - Adjusted Test Year Period | SPS NM Retail O&M Expense - Adjusted Test Year Period |
|---|---|---|---|---|
| | **Production** | | | |
| **1** | 500.0 | Operation Supervision and Engineering | $ 3,479,339 | $ 1,069,106 |
| **2** | 501.35 | Coal Non-Mine; Non-Freight | 33,361,562 | 10,947,567 |
| **3** | 507.7 | Coal Ash Sales | 94,518 | 31,016 |
| **4** | 502 | Steam Expenses | 11,359,090 | 3,490,340 |
| **5** | 505 | Electric Expenses | 9,335,877 | 2,868,661 |
| **6** | 506 | Miscellaneous Steam Power Expenses | 12,953,786 | 3,980,347 |
| **7** | 507 | Rents | 4,521,223 | 1,389,249 |
| **8** | 509 | Steam Operation SO2 Allowance Expense | - | - |
| **9** | 510 | Maintenance Supervision and Engineering | 579,638 | 178,107 |
| **10** | 511 | Maintenance of Structures | 4,283,276 | 1,316,134 |
| **11** | 512 | Maintenance of Boiler Plant | 17,168,511 | 5,633,832 |
| **12** | 513 | Maintenance of Electric Plant | 8,443,902 | 2,770,859 |
| **13** | 514 | Maintenance of Miscellaneous Steam Plant | 10,046,276 | 3,086,948 |
| **14** | 546 | Operation Supervision and Engineering | 479,948 | 150,570 |
| **15** | 548 | Generation Expenses | 283,222 | 87,026 |
| **16** | 549 | Misc Other Power Generation Expenses | 9,109,828 | 2,976,817 |
| **17** | 550 | Rents | 5,889,382 | 1,920,702 |
| **18** | 551 | Maintenance Supervision and Engineering | 468,558 | 143,975 |
| **19** | 552 | Maintenance of Structures | 316,098 | 97,128 |
| **20** | 553 | Maintenance of Generating and Electric Equipment | 5,987,285 | 1,931,581 |
| **21** | 554 | Maintenance of Misc Other Power Generation Plant | 4,144,122 | 1,359,070 |
| **22** | 556 | System Control and Load Dispatching | 1,209,269 | 371,576 |
| **23** | 557 | Purchased Power Other | 1,319,343 | 441,717 |
| **24** | **Total Production O&M Expense** | | **$ 144,834,052** | **$ 46,242,328** |

**Southwestern Public Service Company**

**Total Company SPS Operation and Maintenance Expenses**

| Line No. | FERC Acct | Account Description | SPS Total Company O&M Expense - Adjusted Test Year Period | SPS NM Retail O&M Expense - Adjusted Test Year Period |
|---|---|---|---|---|
| | **Transmission** | | | |
| 25 | **560** | **Operation Supervision and Engineering** | **$ 8,429,849** | **$ 2,093,757** |
| 26 | 561.1 | Load Dispatch - Reliability | (170,029) | (41,221) |
| 27 | 561.2 | Load Dispatch - Monitor and Operate Trans. System | 3,401,279 | 824,590 |
| 28 | 561.4 | Scheduling, System Control and Dispatching Services | 4,702,582 | 1,271,258 |
| 29 | 561.5 | Reliability, Planning and Standards Development | 35,018 | 8,490 |
| 30 | 561.6 | Transmission Service Studies | 34,917 | 8,465 |
| 31 | 561.7 | Generation Interconnection Studies | 23,849 | 5,782 |
| 32 | 561.8 | Reliability Planning and Standards Development Services | 3,221,212 | 963,289 |
| 33 | **562** | **Station Expenses** | **1,548,254** | **384,546** |
| 34 | **563** | **Overhead Line Expenses** | **442,401** | **109,881** |
| 35 | **564** | **Underground Line Expenses** | **-** | **-** |
| 36 | 565 | Transmission of Elec By Others | 288,806 | 70,017 |
| 37 | 565 | Wheeling Meter Charges | 391,050 | - |
| 38 | 565 | Wheeling Miscellaneous | 35,240 | 8,543 |
| 39 | 565 | Wheeling Schedule 11 | 106,286,672 | 37,146,779 |
| 40 | 565 | Wheeling Schedule 11 - Wholesale | 31,231,118 | - |
| 41 | 565 | Wheeling Schedule 12 | 2,224,452 | 777,437 |
| 42 | 565 | Wheeling Schedule 12 - Wholesale | 538,968 | - |
| 43 | 565 | Wheeling Schedule 1 - Wholesale | 504,926 | - |
| 44 | 565 | Wheeling Schedule 2 | 69,152 | 24,168 |
| 45 | 565 | Wheeling Schedule 2 - Wholesale | 20,132 | - |
| 46 | 565 | Wheeling Schedule 9 | 8,201,216 | 2,866,293 |
| 47 | 565 | Wheeling Schedule 9 - Wholesale | 25,866,440 | - |
| 48 | 565 | Z2 Direct Assigned Upgrade Charge | 249,444 | 86,962 |
| 49 | 565 | Z2 Direct Assigned Upgrade Charge - Wholesale | 17,766 | - |
| 50 | **566** | **Misc Transmission Expenses** | **3,241,880** | **805,199** |
| 51 | **567** | **Rents** | **2,146,864** | **533,226** |
| 52 | **568** | **Maintenance Supervision and Engineering** | **-** | **-** |
| 53 | **570** | **Maintenance of Station Equipment** | **1,345,024** | **334,069** |
| 54 | **571** | **Maintenance of Overhead Lines** | **902,988** | **224,279** |
| 55 | **Sub-Total Total Transmission O&M Expenses** | | **$ 205,231,470** | **$ 48,505,810** |
| 56 | **Regional Market Expenses** | | | |
| 57 | 575 | Operation Supervision | $ 160,378 | $ 52,628 |
| 58 | 575 | Day-Ahead and Real-Time Market Administration | 312,292 | 102,478 |
| 59 | 575 | Ancillary Services Market Administration | 14,773 | 4,848 |
| 60 | 575 | Market Monitoring and Compliance | 27,675 | 9,081 |
| 61 | 575 | Market Admin, Monitoring, and Compliance Services | 8,158,155 | 2,204,755 |
| 62 | 575 | Regional Market Rents | 49,736 | 16,321 |
| 63 | **Total Regional Market Expenses** | | **$ 8,723,009** | **$ 2,390,111** |
| 64 | **Total Transmission O&M Expenses** | | **$ 213,954,479** | **$ 50,895,922** |

**Southwestern Public Service Company**

**Total Company SPS Operation and Maintenance Expenses**

| Line No. | FERC Acct | Account Description | SPS Total Company O&M Expense - Adjusted Test Year Period | SPS NM Retail O&M Expense - Adjusted Test Year Period |
|---|---|---|---|---|
| 65 | **Distribution** | | | |
| 66 | 580 | Operation Supervision and Engineering | $ 4,083,691 | $ 1,471,703 |
| 67 | 581 | Load Dispatching | 326,676 | 124,027 |
| 68 | 582 | Station Expenses | 1,008,922 | 383,050 |
| 69 | 583 | Overhead Line Expenses | 896,658 | 857,599 |
| 70 | 584 | Underground Line Expenses | 663,984 | 236,792 |
| 71 | 585 | Street Lighting and Signal Systems Expenses | 607,411 | 230,611 |
| 72 | 586 | Meter Expenses | 2,242,784 | 1,005,727 |
| 73 | 587 | Customer Installations Expenses | 629,268 | 238,910 |
| 74 | 588 | Misc Distribution Expense | 9,998,513 | 2,968,634 |
| 75 | 589 | Rents | 3,139,096 | 1,079,187 |
| 76 | 590 | Maintenance Supervision and Engineering | 28,574 | 10,849 |
| 77 | 591 | Maintenance of Structures | (71) | 3 |
| 78 | 592 | Maintenance of Station Equipment | 668,741 | 253,896 |
| 79 | 593 | Maintenance of Overhead Lines | 6,337,535 | 2,566,736 |
| 80 | 594 | Maintenance of Underground Lines | 101,569 | 15,682 |
| 81 | 595 | Maintenance of Line Transformers | - | - |
| 82 | 596 | Maintenance of Street Lighting and Signal Systems | 282,248 | 147,745 |
| 83 | 597 | Maintenance of Meters | 24,865 | 9,440 |
| 84 | 598 | Maintenance of Misc Distribution Plant | 17,891 | 12 |
| 85 | **Total Distribution O&M Expenses** | | **$ 31,058,354** | **$ 11,600,604** |
| 86 | **Customer Accounts** | | | |
| 87 | 901 | Supervision | $ 28,774 | $ 8,994 |
| 88 | 902 | Meter Reading Expenses | 4,920,322 | 1,537,920 |
| 89 | 903 | Customer Records and Collection Expenses | 7,705,766 | 2,408,552 |
| 90 | 904 | Uncollectible Expenses | 5,497,465 | 1,718,345 |
| 91 | 904 | Uncollectible Expenses Misc | 324,063 | 101,293 |
| 92 | 905 | Customer Acct - Misc | 136,841 | 42,772 |
| 93 | DEPINT | Customer Deposit Interest Expense | 126,563 | 15,689 |
| 94 | **Total Customer Accounts Expense** | | **$ 18,739,793** | **$ 5,833,564** |
| 95 | **Customer Service** | | | |
| 96 | 908.00 | Customer Asst Expense | $ 2,342,346 | $ 732,135 |
| 97 | 908.00 | Historical EE Amortization | - | - |
| 98 | 908.04 | SaversSwitch | 667,409 | - |
| 99 | 909.00 | Informational and Instructional Advertising Expense | 292,042 | 91,284 |
| 100 | 910.00 | Miscellaneous Customer Service Expense | 98,844 | 30,896 |
| 101 | **Total Customer Service Expense** | | **$ 3,400,642** | **$ 854,315** |

**Southwestern Public Service Company**

**Total Company SPS Operation and Maintenance Expenses**

| Line No. | FERC Acct | Account Description | SPS Total Company O&M Expense - Adjusted Test Year Period | SPS NM Retail O&M Expense - Adjusted Test Year Period |
|---|---|---|---|---|
| 102 | **Sales** | | | |
| 103 | 912.00 | Demonstration and Selling Expense-Economic Development | $ 284,818 | $ 89,024 |
| 104 | 916.00 | Misc Sales Expense | 8,598 | 2,687 |
| 105 | **Total Sales Expense** | | **$ 293,415** | **$ 91,711** |
| 106 | **Administrative and General Expenses** | | | |
| 107 | 920 | Administrative and General Salaries | $ 33,814,014 | $ 10,165,291 |
| 108 | 921 | Office Supplies and Expenses | 19,848,518 | 5,966,933 |
| 109 | 922 | Administrative Expenses Transferred-Credit | (22,762,323) | (6,842,892) |
| 110 | 923 | Outside Services Employed | 6,190,128 | 1,860,899 |
| 111 | 924 | Property Insurance | 3,738,738 | 1,133,506 |
| 112 | 925 | Injuries and Damages | 7,941,830 | 2,387,502 |
| 113 | 926.00 | Employee Pensions and Benefits | 29,060,743 | 8,736,346 |
| 114 | 926.30 | Deferred Pension Expense | 1,132,943 | - |
| 115 | 928.00 | Regulatory Commission Expense | 40 | 12 |
| 116 | 928.00 | Regulatory Commission Expense -TX | 1,195,043 | - |
| 117 | 928.01 | Regulatory Commission Expense - NM | 5,372,336 | 5,372,336 |
| 118 | 928.02 | Regulatory Commission Expense - Wholesale | 1,949,917 | - |
| 119 | 928.04 | Regulatory Commission Expense - Misc | (83,949) | (29,799) |
| 120 | 929.00 | Duplicate Charges-Credit | (1,162,226) | (348,553) |
| 121 | 930.20 | Misc General Expenses | 1,280,946 | 384,157 |
| 122 | 931 | A&G Rents | 14,067,307 | 4,418,551 |
| 123 | 935 | Maintenance of General Plant | 47,251 | 14,214 |
| 124 | | Recoverable Contributions, Dues, and Donations | 264,190 | 264,190 |
| 125 | **Total Administrative and General Expenses** | | **$ 101,895,444** | **$ 33,482,692** |
| 126 | **Total Operations and Maintenance Expense** | | **$ 514,176,179** | **$ 149,001,136** |

**Description of FERC Accounts Used by SPS Transmission Business Area**

| FERC Account No. | FERC Account Title | Description of Costs Included in FERC Account |
|---|---|---|
| 560 | Operation Supervision and Engineering | The cost of labor and expenses incurred in the general supervision and direction of the operation of the transmission system as a whole.[1] |
| 562 | Station Expenses | The cost of labor, materials used and expenses incurred in operating transmission substations and switching stations.[2] |
| 563 | Overhead Line Expenses | The cost of labor, materials used and expenses incurred in the operation of overhead transmission lines |
| 564 | Underground Line Expenses | The cost of labor, materials used and expenses incurred in the operation of underground transmission lines. |
| 566 | Miscellaneous Transmission Expense | The cost of labor, materials used and expenses incurred in transmission map and record work, transmission office expenses, and other transmission expenses not provided for elsewhere. |
| 567 | Rents | The cost of rents of property of others used, occupied, or operated in connection with the transmission system, including payments to the United States and others for use of public or private lands and reservations for transmission line rights of way. |

[1] Direct supervision of specific activities, such as station operation, line operation, etc., must be charged to the appropriate account.

[2] FERC Account 562.1, Operation of Energy Storage Equipment, includes the cost of labor, materials used and expenses incurred in the operation of energy storage equipment includible in FERC Account 351, Energy Storage Equipment—Transmission, which are not specifically provided for or are readily assignable to other transmission operation expense accounts.

| | | |
|---|---|---|
| 568 | Maintenance Supervision and Engineering | The cost of labor and expenses incurred in the general supervision and direction of maintenance of the transmission system.[3] |
| 570 | Maintenance of Station Equipment | The cost of labor, materials used and expenses incurred in maintenance of station equipment, the book cost of which is includible in FERC Account 353, Station Equipment.[4] |
| 571 | Maintenance of Overhead Lines | The cost of labor, materials used and expenses incurred in maintenance of transmission plant, the book costs of which are includible in FERC Accounts 354, Towers and Fixtures; 355, Poles and Fixtures; 356, Overhead Conductors and Devices; and 359, Roads and Trails. |

[3] Direct field supervision of specific jobs must be charged to the appropriate maintenance account.

[4] Additionally, FERC Account 570.1, Maintenance of Energy Storage Equipment, includes the cost of labor, materials used and expenses incurred in the maintenance of energy storage equipment includible in FERC Account 351, Energy Storage Equipment—Transmission, which are not specifically provided for or are readily assignable to other transmission maintenance expense accounts.