



**Southwest Power Pool**  
**FINANCE COMMITTEE MEETING**

**October 30, 2017**

**Little Rock, AR**

**• M I N U T E S •**

**Administrative Items**

Chair Larry Altenbaumer called the meeting to order at 7:30 a.m. for an executive session consisting of Committee members, Nick Brown and Lanny Nickell. During the executive session, Lanny Nickell advised the Committee of a potential unbudgeted expenditure related to SPP's membership expansion efforts. Following conclusion of the executive session, the regular meeting convened. The following individuals participated in the meeting.

|                            |                                    |
|----------------------------|------------------------------------|
| Larry Altenbaumer          | SPP Director                       |
| Bruce Scherr               | SPP Director                       |
| Kelly Harrison             | Westar Energy                      |
| Laura Kapustka (phone)     | Lincoln Electric                   |
| Mike Wise                  | Golden Spread Electric Cooperative |
| Sandra Bennett (phone)     | AEP                                |
| Tom Dunn                   | SPP                                |
| Others attending included: |                                    |
| Traci Bender (phone)       | NPPD                               |
| Jerry Peace                | OG&E                               |
| Denise Buffington          | KCPL                               |
| Jim Jacoby                 | AEP                                |
| Mark Crisson               | SPP Director                       |
| Phyllis Bernard            | SPP Director                       |
| Graham Edwards             | SPP Director                       |
| Josh Martin                | SPP Director                       |
| Nick Brown                 | SPP                                |
| Carl Monroe                | SPP                                |
| Barbara Sugg               | SPP                                |
| Lanny Nickell              | SPP                                |
| Sheri Dunn                 | SPP                                |
| Zeynep Vural               | SPP                                |
| Dianne Branch              | SPP                                |

Minutes from the September 26, 2017 meeting were reviewed. Kelly Harrison motioned to approve the minutes. The motion was seconded by Mike Wise and approved by unanimous voice vote.

**SPP 2018 Budget**

SPP staff presented highlights from the 2018 budget starting with a reconciliation of SPP's net revenue requirement from the 2017 budget through the 2017 forecast then to the 2018 budget. Next, staff presented a closer view into major budget categories including salary and benefit expenses, outside services expenses, capital expenditures, debt service requirements, and outstanding debt. Additionally, where available, staff provided comparisons of SPP results to the U.S. based ISO/RTO peers.

Several issues were raised by the meeting participants, particularly the conservative nature of the assumptions used in developing the budget, as noted by Jerry Peace. Mr. Peace cited areas such as when the RE termination is effective, how the RE personnel are absorbed into the RTO roles, billing unit forecasts, and funding assumptions for the pension plan as examples of conservatism. Staff countered that it strives to utilize balanced assumptions whereby it is in a 50%/50% opportunity for the assumption to be correct.

Following additional dialogue on individual aspects of the budget, participants were polled on where they were leaning regarding the budget. Larry Altenbaumer then made a motion to accept the budget as submitted and establish an assessment and schedule 1A rate of 42.9¢/MWh effective January 1, 2018. The motion was seconded by Bruce Scherr and approved by unanimous voice vote.

Finance Committee  
October 30, 2017

SPP staff was directed to work on the following areas prior to presentation of the budget at the December 5, 2017 Board of Directors meeting:

- Document a list of major assumptions and the rationale supporting the assumptions
- Update the billing unit forecast through September 2017
- Develop a plan to demonstrate SPP's cost efficiencies

### **SPP Capitalization Policy and Procedure**

Dianne Branch, SPP's Controller, advised the Committee of changes to how SPP will account for hardware and software purchases.

### **Fiduciary Liability and Investment Policy Statement**

SPP staff discussed a change proposed to the Finance Committee Scope Document to remove authority to approve the Investment Policy Statement(s) for SPP's Employee Retirement Income Security Act qualified benefit plans. Removal of this responsibility will eliminate direct fiduciary liability for the Committee related to those plans. The Committee will continue to have authority to recommend funding for the plans.

An additional change was proposed to move responsibility to receive the annual controls audit report to the Oversight Committee. The Finance Committee members who are also independent board of director members will attend the Oversight Committee meeting where the controls audit report will be presented.

Bruce Scherr made a motion to accept the changes to the Finance Committee Scope Document, as presented. The motion was seconded by Kelly Harrison and approved by unanimous voice vote.

### **Administrative Fee Billing Unit Change**

SPP staff presented a timeline and schedule of major milestones related to the initiative to change recovery of SPP's costs from only billing transmission customers to one only billing market participants.

Denise Buffington from KCPL recommended staff begin having discussions with FERC as soon as possible regarding this change to ensure all potential issues are identified as early as possible.

### **RR249 Letter of Credit Changes**

The Committee reviewed a recommendation from the Credit Practices Working Group to make several ministerial changes to the language in the letter of credit template within the SPP Credit Policy.

Kelly Harrison made a motion to accept the changes as presented. The motion was seconded by Mike Wise and approved by unanimous voice vote.

### **Future Meetings**

Larry Altenbaumer presented a proposed schedule of meetings for 2018 which will occur on Mondays prior to the SPP Markets and Operation Policy meetings. The purpose of moving to this schedule is to better align and communicate SPP's financial position and impacts with the MOPC and to potentially reduce travel expenses for participants.

The next meeting of the Finance Committee is scheduled for Monday January 15, 2018 in Oklahoma City, OK beginning at 1:00 p.m. and ending at 5:00 p.m.

There being no further business, Larry Altenbaumer adjourned the meeting at noon.

Respectfully Submitted,

Thomas P. Dunn  
Secretary



Southwest Power Pool, Inc.  
FINANCE COMMITTEE  
**Action Items Status Report**  
October 30, 2017

|    | Action Item  | Date Originated | Status     | Comments   |
|----|--|-----------------|------------|--|
| 1. | Investigate alternative metrics to use in allocating SPP's costs to the region. Expand analysis to illustrate impact on LMP and total cost of service from SPP | July 6, 2016    | In Process | Present at April 2018 meeting                              |
| 2. | Engage firm to review work of actuary on benefit plans   | April 5, 2016   | New        |  |
| 3. | Staff response to planning linkage framework   | Feb 24, 2017    | New        | Adding project presentation to MOPC agenda in October      |
| 4. | IPS – SPP Administrative Committee to develop return and expense benchmarks and document in IPS  | Feb 24, 2017    | New        | Present at Jan 2018 meeting                                |
| 5. | Review cyber insurance programs  | April 5, 2017   | New        | Present at Jan 2018 meeting                                |
| 6. | Accounting review of policy regarding capitalization of assets and internal staff time when working on projects  | June 13, 2017   | New        | Partially complete, still working on staff capitalization  |
| 7. | Review default provisions of Attachment X – Credit Policy  | June 13, 2017   | In Process | TRR routing through RTWG, clarifying enforceability of TSA |
| 8. | Suggest re-branding of Compliance Hotline to Ethics Hotline, add question in employee satisfaction survey on why employees don't utilize the hotline           | June 13, 2017   | Complete   | Suggestion given to Malinda See June 21, 2017              |
| 9. | Include 1-page summaries of major projects in financial reports  | June 13, 2017   | Complete   |  |
| 10 | Evaluate inclusion of credit process controls in SSAE 16 audit scope   | July 6, 2016    | New        |  |
| 11 | Investigate how SPP member utilities insure against cyber liabilities  | July 6, 2016    | In Process | To be presented at April 2017 meeting                      |
| 12 | Distribute 10-year financial model   | Feb 24, 2017    | Complete   | Sent April 17, 2017  |
| 13 | Efficient decision frontier and quilt chart from Stephens  | Feb 24, 2017    | New        | Present at June 13 2017 meeting                            |
| 14 | Provide report of audit firms used for other ISO/RTO financial audits  | April 5, 2017   | New        | Submitted with meeting minutes                             |
| 15 | Fraud Hotline report (process and awareness)   | April 5, 2017   | New        | Present at June 13 2017 meeting                            |
| 16 | Determine capability, capacity, and financial impact for Internal Audit to assist BKD on 2017 financial statement audit  | April 5, 2017   | New        |  |
| 17 | Customer deposit recon processes, internal audit reviews, construction deposits  | Feb 24, 2017    | New        |  |
| 18 | IPS – adopt performance benchmarks, report on fund performance vs. benchmarks  | Feb 24, 2017    | New        | Present at June 13 2017 meeting                            |
| 19 |  |                 |            |  |
| 20 |  |                 |            |  |



**Southwest Power Pool, Inc.**  
**FINANCE COMMITTEE MEETING**  
**October 31/November 1, 2017**  
**SPP Corporate Office – Little Rock, AR**

**• A G E N D A •**

**October 30 - 8:00 a.m. – 12:00 p.m.**  
**October 31 – 2:00 p.m. – 5:00 p.m.**

- 1. Administrative Items ..... Larry Altenbaumer
  - a. Review of Past Action Items ..... Tom Dunn
  - b. YTD 2017 Financial Results ..... Tom Dunn
- 2. 2018 Operating and Capital Budget ..... Tom Dunn
- 3. Fiduciary Liability and Investment Policy Statement ..... Tom Dunn
- 4. SPP Capitalization Policy and Procedure ..... Dianne Branch
- 5. Administrative Fee Billing Unit Change Process ..... Tom Dunn
- 6. RR249 Letter of Credit Changes ..... Scott Smith
- 7. Written Reports.....
  - a. September 2017 Financials
  - b. Financial, Settlements, and Credit Metrics
  - c. SPP Portfolio Report
- 8. Future Meetings.....



**Southwest Power Pool**  
**FINANCE COMMITTEE MEETING**  
**September 26, 2017**  
**Dallas, TX**

**• M I N U T E S •**

**Administrative Items**

Chair Larry Altenbaumer called the meeting to order at 8:30 a.m. The following members of the Finance Committee participated:

|                            |                                    |
|----------------------------|------------------------------------|
| Larry Altenbaumer          | SPP Director                       |
| Bruce Scherr               | SPP Director                       |
| Kelly Harrison             | Westar Energy                      |
| Laura Kapustka             | Lincoln Electric                   |
| Mike Wise                  | Golden Spread Electric Cooperative |
| Sandra Bennett             | AEP                                |
| Tom Dunn                   | SPP                                |
| Others attending included: |                                    |
| Traci Bender               | NPPD                               |
| Jerry Peace                | OG&E                               |
| Greg McAuley               | OG&E                               |
| Rob Janssen                | Dogwood Energy                     |
| Denise Buffington          | KCPL                               |
| Jim Jacoby                 | AEP                                |
| Mike Risan                 | Basin Electric                     |
| Tom Hestermann             | Sunflower                          |
| Jason Chaplin              | Oklahoma Corporation Commission    |
| Geoffrey Rush              | Oklahoma Corporation Commission    |
| Les Evans                  | Kansas Electric Power Coop         |
| Bill Grant                 | Xcel/SPS                           |
| Dennis Florum              | Lincoln Electric                   |
| Jake Langthorn (phone)     | OG&E                               |
| Mark Crisson               | SPP Director                       |
| Harry Skilton              | SPP Director                       |
| Phyllis Bernard            | SPP Director                       |
| Graham Edwards             | SPP Director                       |
| Jim Eckelberger            | SPP Director                       |
| Nick Brown                 | SPP                                |
| Carl Monroe                | SPP                                |
| Barbara Sugg               | SPP                                |
| Michael Desselle           | SPP                                |
| Paul Suskie                | SPP                                |

Minutes from the June 13 and 14, 2017 meeting were reviewed. Bruce Scherr motioned to approve the minutes. The motion was seconded by Kelly Harrison and approved by unanimous voice vote.

**SPP 2018 Operating Plan**

The morning portion of the meeting was dedicated to discussion of the 2018 operating plan with members of the Finance Committee and SPP's Strategic Planning Committee. The goal is to determine if the operating plan is in alignment with the 2014 SPP Strategic Plan.

Points of discussion included:

- Formalize execution plans for strategic initiatives.
- Noting that there are no Operating Plan items related to the Value Pricing strategic initiative and that it is an A priority, Need plan to address value pricing
- Formalize data deletion policy and procedures

- How will SPP compensate generation that is necessary for reliability but may not be economically dispatched
- Need to get ahead of ancillary service impacts caused by growth in variable generation within SPP
- Ensure membership is fully informed to provide SPP staff with appropriate guidance on capital allocation and spending.

Following discussion, Graham Edwards made a motion on behalf of the Strategic Planning Committee to accept the 2018 Operating Plan, as presented, as the basis for the 2018 SPP budget and determined that the operating plan is aligned with the revised 2014 Strategic Plan initiatives. The motion was seconded by Mike Risan and approved by a unanimous voice vote of the members of the Strategic Planning Committee.

Bruce Scherr made a motion to accept the 2018 Operating Plan, as presented, as the basis for the 2018 SPP budget and determined that the operating plan is aligned with the 2014 Strategic Plan. The motion was seconded by Sandra Bennett and approved by a unanimous voice vote of the members of the Finance Committee.

### **Administrative Fee Billing Unit Change**

SPP staff advised the Committee of its activities related to the proposed change in administrative fee billing units and proposed the following steps to move forward:

1. Broaden review to include annual membership fees, withdrawal fees, and any other recovery process currently in place. Objective is to address new questions raised by SPP's Corporate Governance Committee regarding appropriateness of SPP's existing stakeholder process should more stakeholders be required to pay for SPP's services
2. Continue one-on-one discussions with members and customers to solicit input into the change and identify hurdles that will need to be overcome
3. Develop timeline and milestones to implement change

### **2018 Financing Plan**

SPP staff advised the Committee of the results of its request for proposal process to put in place a financing arrangement which will satisfy SPP's needs into the near future. Committee members encouraged SPP to continue its negotiations. SPP staff expects to return to the Committee with a recommendation prior to the end of 2017.

### **Administrative Committee "Named Fiduciary"**

The Finance Committee and the SPP Human Resources Committee both currently have formal fiduciary responsibilities related to the SPP pension plan and 401(k) plans, respectively. Both Committees have been working independently during 2017 to move to consolidate all fiduciary responsibility related to these ERISA qualified plans to the SPP Administrative Committee which is comprised of SPP's CEO, CFO, General Counsel and VP of HR. Staff recommended a joint recommendation to the SPP Board of Directors from the HR and Finance Committees to name the Administrative Committee as the Named Fiduciary for the 401(k) and pension plans.

Kelly Harrison made a motion to recommend the SPP Board of Directors name the SPP Administrative Committee as the Named Fiduciary of the 401(k) and pension plans. The motion was seconded by Bruce Scherr and approved by unanimous voice vote.

A question was raised during the discussion on whether or not approving the Investment Policy Statements of the plans was a fiduciary or settlor function. SPP staff consulted with SPP's ERISA counsel after the meeting concluded, who responded that establishing and approving the Investment Policy Statement was a fiduciary function.

### **Organizational Group Scope Review and Annual Self-assessment**

The Committee members reviewed the documented organizational scope and self-assessment and had no changes to recommend.

### **Year to Date Financial Review**

Tom Dunn, SPP's Chief Financial Officer, presented SPP's YTD and full year forecast financials. Highlights included:

- Administrative fee revenues are above budget due to strong 4Q'16 monthly peaks,
- Salary & Benefit expenses are above budget due to 8 incremental unbudgeted positions approved for 2017 and overall vacancy running well below budgeted levels,
- SPP's forecasted over-recovery for 2017 is \$1.5 million

Dunn next presented the expanded Quarterly Capital Project Review report which indicated SPP's 3 year capital expenditure forecast was now \$70.5 million versus budget of \$75 million. The major factors for the reduction are: i)

Finance Committee  
September 26, 2017

delivery of the Enhanced Combined Cycle project for \$1.8 million less than budget and, ii) deferral of phases II and III of the PMU Data Exchange project to 2021 at the earliest.

Finally, the Committee members reviewed the 1-page summaries of the major projects as requested at the prior meeting.

**Future Meetings**

The next meeting of the Finance Committee is scheduled for October 31 and November 1, 2017 at the SPP office in Little Rock, AR beginning at 2:30 p.m. on October 31 and ending at 2:00 p.m on November 1.

There being no further business, Larry Altenbaumer adjourned the meeting at 2:30 p.m.

Respectfully Submitted,

Thomas P. Dunn  
Secretary



Southwest Power Pool, Inc.  
FINANCE COMMITTEE  
**Action Items Status Report**  
June 13, 2017

|    | Action Item  | Date Originated | Status     | Comments   |
|----|--|-----------------|------------|--|
| 1. | Investigate alternative metrics to use in allocating SPP's costs to the region. Expand analysis to illustrate impact on LMP and total cost of service from SPP | July 6, 2016    | In Process | Present at Dec 2017 meeting                                |
| 2. | Engage firm to review work of actuary on benefit plans   | April 5, 2016   | New        |  |
| 3. | Staff response to planning linkage framework   | Feb 24, 2017    | New        | Adding project presentation to MOPC agenda in October      |
| 4. | IPS – SPP Administrative Committee to develop return and expense benchmarks and document in IPS  | Feb 24, 2017    | New        | Present at Dec 2017 meeting                                |
| 5. | Review cyber insurance programs  | April 5, 2017   | New        | Present at Dec 2017 meeting                                |
| 6. | Accounting review of policy regarding capitalization of assets and internal staff time when working on projects  | June 13, 2017   | New        | Present at Oct 2017 meeting                                |
| 7. | Review default provisions of Attachment X – Credit Policy  | June 13, 2017   | In Process | TRR routing through RTWG, clarifying enforceability of TSA |
| 8. | Suggest re-branding of Compliance Hotline to Ethics Hotline, add question in employee satisfaction survey on why employees don't utilize the hotline           | June 13, 2017   | Complete   | Suggestion given to Malinda See June 21, 2017              |
| 9. | Include 1-page summaries of major projects in financial reports  | June 13, 2017   | Complete   |  |
| 10 | Evaluate inclusion of credit process controls in SSAE 16 audit scope   | July 6, 2016    | New        |  |
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| 19 |  |                 |            |  |
| 20 |  |                 |            |  |
| 21 |  |                 |            |  |



Finance Committee  
September 26, 2017



**Southwest Power Pool, Inc.**  
**FINANCE COMMITTEE**  
**Recommendation to the Board of Directors**  
**December 5, 2017**  
**2018 Budget**

**Organizational Roster**

The following persons are members of the Finance Committee:

|                   |                         |
|-------------------|-------------------------|
| Larry Altenbaumer | SPP Director            |
| Bruce Scherr      | SPP Director            |
| Sandra Bennett    | American Electric Power |
| Kelly Harrison    | Westar                  |
| Laura Kapustka    | Lincoln Electric        |
| Mike Wise         | Golden Spread           |

**Background**

Section 6.5 of the SPP Bylaws identifies establishment of annual and long-term budgets as a primary duty of the Finance Committee.

**Analysis**

SPP's management proposed a 2018 budget to include expenditures as follows:

|                            | <u>\$millions</u> |
|----------------------------|-------------------|
| Total Expenses             | \$190.8           |
| Net Revenue Requirement    | \$164.0           |
| Debt Repayment             | \$23.4            |
| FERC Assessments           | \$20.3            |
| Capital Expenditures       | \$17.9            |
| 2017 Over/(Under) Recovery | \$1.5             |

SPP management utilized an incremental approach to prepare the 2018 budget.

Management documented an Operating Plan for 2018 outlining the significant initiatives and plans for the company during 2018. This Operating Plan was presented to the Finance Committee, Strategic Planning Committee, and SPP Board of Directors to seek input and consensus. SPP's 2018 budget was developed to accomplish the plan.

**Recommendation**

The Finance Committee recommends the SPP Board of Directors approve the 2018 SPP operating and capital budgets as submitted.

**Approved:** SPP Finance Committee

**Action Requested:** Approve Recommendation



**Southwest Power Pool, Inc.**  
**FINANCE COMMITTEE**  
**Recommendation to the Board of Directors**  
**December 5, 2017**  
**2018 Schedule 1A Rate**

**Organizational Roster**

The following persons are members of the Finance Committee:

|                   |                         |
|-------------------|-------------------------|
| Larry Altenbaumer | SPP Director            |
| Bruce Scherr      | SPP Director            |
| Sandra Bennett    | American Electric Power |
| Kelly Harrison    | Westar                  |
| Laura Kapustka    | Lincoln Electric        |
| Mike Wise         | Golden Spread           |

**Background**

Section 8.4 of the SPP Bylaws requires SPP to annually develop an assessment rate based on budgeted expenditures for the upcoming fiscal year and estimated billing determinants for that year.

**Analysis**

The 2018 SPP operating budget indicates a net revenue requirement (“NRR”) for the year of \$164.0 million (inclusive of expected over-recovery of \$1.5 million in 2017) and estimated billing determinants of 382,100,000 MWh. NRR is derived by adjusting SPP’s gross cash outflows (exclusive of capital expenditures) by all non-administrative fee revenue forecast to be earned in the year. The billing determinants are calculated by analyzing the current year to date transmission usage and estimating usage through the remainder of the year.

Billing determinants are estimated based on the billing criteria detailed in the SPP tariff. Presently, network integration transmission service is charged the SPP schedule 1A administrative fee based on the average 12 monthly peaks from the previous year; point-to-point transmission service is charged the SPP schedule 1A administrative fee based on the reserved transmission capacity. Through July 2017, SPP has realized year-over-year growth in average monthly peaks of 1.6%. SPP expects peaks realized for the remaining months to be flat or below the prior year peaks due to more difficult comparisons with the second half of 2016 (particularly 4Q’16 comparisons) and general comments from SPP’s larger utilities regarding the low demand they realized during the summer of 2017. SPP is modeling 2% reductions in monthly peaks for August through November and a 12% reduction in December peak demand compared to 2016.

**Recommendation**

The Finance Committee recommends the SPP Board of Directors establish an assessment rate and tariff administrative fee (schedule 1-A) of 42.9¢/MWh beginning on January 1, 2018.

**Approved:** SPP Finance Committee

**Action Requested:** Approve Recommendation



# 2018 BUDGET

PREPARED BY ACCOUNTING DEPARTMENT



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# I. EXECUTIVE SUMMARY

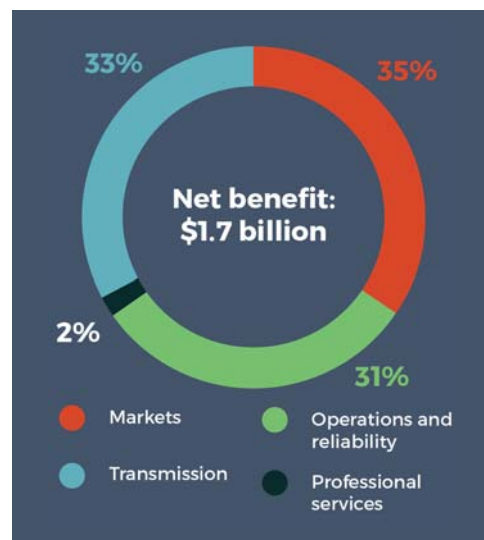
## SPP VALUE

*SPP has a proven record of creating value for our diverse member companies. The integrated marketplace, transmission planning, and reliability and professional services provide significant benefits to members and customers throughout the region.*

SPP's services provide net benefits to its members in excess of \$1.7 billion annually at a benefit-to-cost ratio of more than 11-to-1. For the typical end-use customer using 1,000 kWh per month, this means their \$100 electric bill would be \$105.71 without the services SPP provides.

SPP remains committed to providing value to stakeholders and providing customers with increased options and greater efficiency to meet the reliability and affordability needs of their end users. SPP is able to:

- Reduce overall costs by operating as a region;
- Provide reliability assurance and predictable operations of the bulk electric system;
- Facilitate effective transmission planning processes resulting in building and maintaining an economically optimized transmission system;
- Offer an open and transparent marketplace with economic benefits;
- Optimize market efficiencies and transmission expansion along the seams of other markets and the emerging seam associated with the natural gas supply; and
- Ensure fair and equitable allocation of transmission expansion costs.



A diligent focus on continuous improvement and efficiency has led SPP staff to implement numerous enhancements to its processes, tools and services as noted in the Process Improvement section of the supplemental materials to this document.

## OPERATING PLAN

*SPP's 2018 Operating Plan is similar in strategy to the current-year operating plan, with additional focus on cybersecurity, the proliferation of renewable energy resources and the impact of energy efficiency on load. Changes to the plan are reflected in the regulatory arena as a result of the new presidential administration bringing about changes in policy and in regulatory and legislative leadership.*

The operating plan was drafted by SPP staff and evaluated at a joint meeting of the SPP Finance Committee and Strategic Planning Committee to ensure alignment with SPP's current strategic plan. The operating plan documents specific activities SPP will undertake during 2018 and links those activities to strategic plan initiatives.

The 2018 Operating Plan segregates work across three platforms:

- Major project investments: Represents investments driven by customers, regulators or SPP staff that generally have broad impacts to services provided by SPP.
- Major technology investments: Represents investments in technology to maintain existing capabilities of the technology infrastructure and for enhancements to address system demands, cybersecurity requirements and incremental additions to SPP's service menu.
- Keeping the lights on: Represents ongoing and incremental investments in SPP foundation activities to ensure reliability.

Major 2018 project investments include:

- Settlement Systems Replacement: This multi-year project that started in 2016 will replace current market and transmission settlement systems with a custom designed, single, high-performance, scalable system solution. The new system will expand automation of the settlements processes to improve accuracy, timeliness and auditability. A significant reduction in long-term support costs for the settlements function is expected as a result of the implementation. The new system is expected to be in production by May 2019, with the bulk of the development work to occur throughout 2018.
- Voltage Security Assessment Tool (VSAT): The online VSAT will identify constraints on the transmission system that enables staff to prepare for and react to stability concerns and therefore enhance reliable operation of the bulk electric system. VSAT implementation began in 2017 and will complete before the end of 2018. Initial capital



costs include purchase of software, hardware and new functionality added to the energy management system (EMS) software to facilitate the export of data.


- **Transient Stability Assessment Tool (TSAT)**: The TSAT application will monitor transient stability to help prevent damage to generating equipment. TSAT will be used to ensure power transfers do not cause a voltage collapse event or blackout. The project will begin once the VSAT application is completed and in production in 2018.
- **Training and Testing Simulated Environment (TTSE)**: Phase 1 of the project initiated in 2016 and resulted in the implementation of a stand-alone training simulation environment for SPP's operations staff. Phase 2 of the project will result in the addition of market simulation capability and contains two components: 1) assembly of market simulation hardware and environment, and 2) build and integrate market simulation software. Phase 3 of the project will add visualization tools to the simulation environment closely mimicking the screens available at the real-time desks. Phase 3 work will complete in 2018 while the second component of Phase 2 is planned for 2019.

Various other projects were determined valuable to SPP and its members but were not recommended for approval. Reasons for not recommending the projects were generally due to uncertainty concerning regulatory requirements and timelines.

The operating plan document in its entirety is included following the Supplementary Schedules in Section XI.

## **NET REVENUE REQUIREMENT (NRR)**

*The NRR represents the amount of funding necessary to provide services throughout the footprint. The main components are operating expenses (net of depreciation and Federal Energy Regulatory Commission (FERC) assessment), principal payments on loans for capital expenditures and a capital reserve fund intended to partially offset future borrowings.*

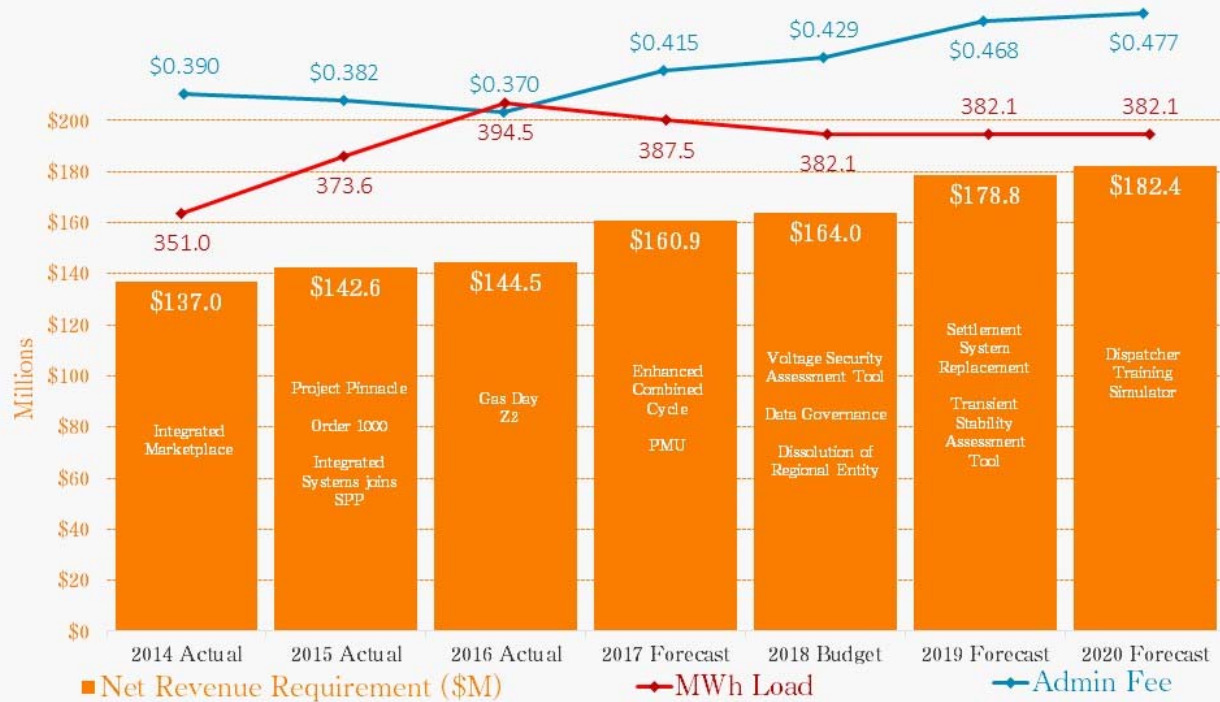


The 2018 proposed admin fee rate of 42.9¢/MWh is based on a net revenue requirement (NRR) of \$164.0 million.

Revenues from various activities including Northern American Electric Reliability Corporation (NERC) funding for the Regional Entity (RE) function and reimbursements for engineering studies are included as an offset to the expenses in calculating the NRR. SPP projects an NRR over-recovery of \$1.5 million for 2017.

## NET REVENUE REQUIREMENT AND SPP INITIATIVES

NRR is actual for 2014 – 2016, forecast for 2017 and budget/forecast for 2018 – 2020.



The 2017 over-recovery is related to various offsetting factors. Favorable factors include lower operating costs primarily associated with maintenance, outside services and interest; and a slight increase in load resulting in higher revenues in 2017. Items offsetting the favorable impact to NRR include higher operating costs associated with compensation due to a lower vacancy rate as compared to budget, and certain litigation and penalty expenses not reflected in the 2017 budget. The 2017 over-recovery is reflected as an offset to the 2018 budgeted NRR.

The 2018 proposed admin fee rate of 42.9¢/MWh is based on an NRR of \$164.0 million, compared to \$160.9 million forecasted NRR for 2017. The 2018 NRR increase is driven by dissolution of the Regional Entity and associated NERC funding and by increases in various operating expenses (compensation, maintenance, communications infrastructure, etc.).

The proposed administrative fee rate for 2018 of 42.9¢/MWh remains just under the admin fee tariff cap of 43.0¢/MWh.

# CAPITAL EXPENDITURES

*The 2018 budget identifies capital expenditures totaling \$47.4 million for 2018-2020. These projects represent investments in various initiatives. Each initiative was driven by either stakeholder requests, compliance-related concerns or capital spending intended to improve and strengthen information technology and operations foundation.*



Projects are consistently evaluated throughout the year under oversight of SPP’s internal Project Review and Prioritization Committee (PRPC). Reprioritization due to new developments and/or resource/time constraints throughout the rest of 2017 and into 2018 could potentially impact the project portfolio. Capital expenditures planned for 2018 could be impacted by: 1) addition of projects not currently reflected in the budget, 2) deferrals of projects into future years, 3) elimination of projects due to time constraints and/or completion of the project without incurring external costs, or 4) costs carried forward into 2018 for projects not completed as planned during 2017.

The Capital Projects Section V. describes noteworthy projects in greater detail, and a complete list of initiatives and associated capital budgets appear in the Supplementary Schedules Section X.

## SPP HEADCOUNT

*SPP management continues to diligently evaluate staffing levels and responsibilities in response to SPP’s evolving array of services and the challenges of the regulatory environment.*

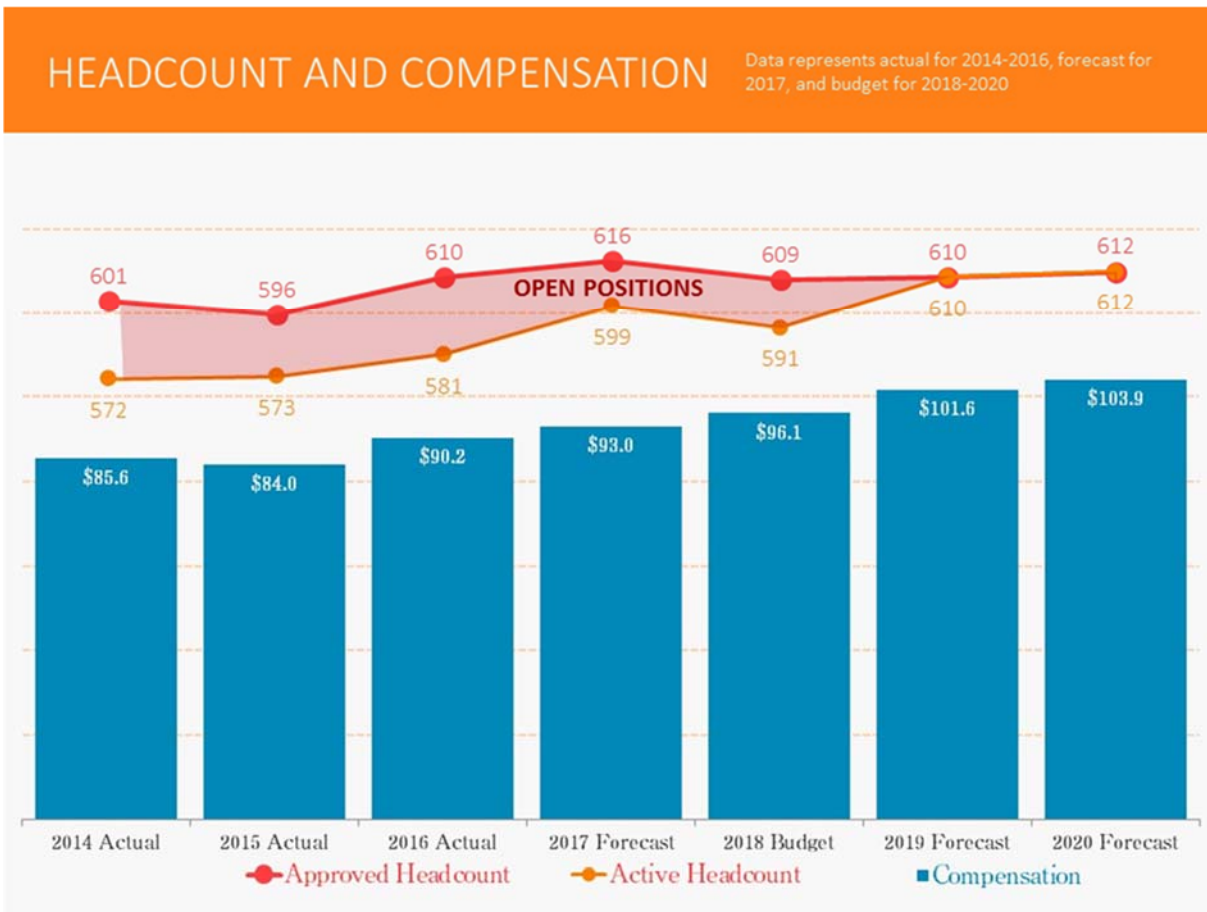
The total number of staff in 2018 is expected to decrease from 2017. The 2018 staffing level is budgeted at 609, compared to 616 projected last year for 2018 and compared to 616 in the 2017 forecast. Compensation includes salaries, benefits and taxes.

| <u>Headcount Changes</u>   |      |
|----------------------------|------|
| 2017 Budget                | 610  |
| Out-of-budget requests     | 8    |
| Eliminations added back    | 3    |
| RE open positions removed  | (5)  |
| 2017 Forecast              | 616  |
| 2018 Incremental positions | 5    |
| Reduction in RE staff      | (12) |
| 2018 Budget                | 609  |

The net decrease in headcount is associated with various offsetting factors. The decision to terminate the Regional Entity delegation agreement with NERC resulted in a reduction of 5 open positions in 2017 and 12 additional positions by July 2018. Increases over the 2017 budget include eight incremental out-of-budget positions added to the 2017 forecast as a result of assessing SPP’s compliance-related responsibilities and repurposing positions required for staffing needs for 2017 and beyond.

The unidentified headcount reductions originally proposed in the 2017 budget were added back to the 2017 headcount forecast as a result of the commitment to absorb additional staff upon the termination of the RE delegation agreement. The 2018 budget includes five incremental staff.

More details on the staffing budget is included in Resource Utilization Section VI.



## II. SPP VALUE

*SPP’s stakeholders are a diverse group made of our member companies and the customers they serve. SPP strives to be a prudent steward of its members’ valuable resources and continually partners with stakeholders and local, state and federal regulators to do so.*

### Member-Driven Culture

*SPP is value-oriented and works to ensure that its people and processes are aligned in support of its members’ goals.*

SPP’s approach to business is not to be cheaper, faster or bigger than its peers.



One of SPP’s value principals is promoting independence through diversity with a commitment to remaining a member-driven organization.

SPP focuses on creating and maintaining a strong, unique culture in which our staff and stakeholders collaborate to be as effective and efficient as possible.

SPP takes pride that today it still embodies its early principles of collaboration with an unwavering commitment to remain member-focused. SPP derives value from the diverse perspectives of its member companies and remains independent of undue influence from any single entity or group of like-minded entities. It facilitates dialogue and collaboration among its members, who work together to keep the lights on today and in the future, ensuring all perspectives are appropriately considered regardless of each member company's size.

SPP's membership includes investor-owned utilities, rural electric cooperatives, municipalities, public power, and state and federal agencies. SPP shares its members' values and equally understands the challenges of managing transmission in rural areas together with maintaining reliability in large population centers. SPP serves seven of the 100 largest cities in the U.S., but at the same time maintains a keen understanding of rural America where SPP has primarily served for the past 75 years.

SPP seeks career employees and encourages community service. It values transparency in all actions and communications; flexibility in its approach to customer service and response to industry trends; and integrity and trust in all actions.

## **Major Services**

***SPP has a proven record of creating value by leveraging economies of scale, the expertise of its staff and the diverse perspectives of its member companies.***

SPP's regional tariff and integrated marketplace provides customers one-stop shopping and trading which results in production cost savings and additional sales of energy. SPP understands the benefits of a robust transmission system with the ability to transfer power reliably and economically, and also recognizes the significance of providing access to markets that create further savings for members and customers.

SPP's Integrated Marketplace continues to deliver value to its membership, providing over \$1.5 billion in cumulative benefits to the region through September 2017 and an estimated \$422 million in net savings annually to market participants.

SPP's regional approach to transmission planning optimizes the existing transmission system while determining the best opportunities for transmission expansion needed to ensure reliability, to promote more efficient energy markets and to meet public policy objectives. Even with some increase in initial cost, a 2015 study found that transmission expansion in the then-current SPP region has a 3.5-to-1 benefit-to-cost ratio over its lifespan.

These and other services provide net benefits to SPP's members in excess of \$1.7 billion annually at a benefit-to-cost ratio of more than 11-to-1. For the typical end-use customer using 1,000 kWh per month, this means their \$100 electric bill would be \$105.71 without the services SPP provides.

SPP also provides the tools, services, markets and forums for members and market participants to manage current and future challenges. Several projects are planned for 2018 to enhance the value SPP provides members today and in the future. Some of these projects include the replacement of the settlements system, development of voltage security assessment and transient stability assessment tools, and an upgrade of the training and testing simulated environment. These projects are discussed in detail in the Capital Projects Section V.


SPP works to ensure the supply of the most reliable and cost-efficient electric power for the entire region. The company's expertise, along with the economies of scale afforded by SPP's business model, ensures our membership realizes the above benefits.

The benefits of SPP membership are numerous, including production-cost savings during all manner of system conditions, optimized use of existing transmission facilities, increased competition, improved regional system planning, cost savings related to generating capacity planning, improved access to low-cost renewable resources, transmission cost allocation, interregional seams management and a multitude of other operational and reliability benefits.

### III. 2018 NET REVENUE REQUIREMENT

#### NET REVENUE REQUIREMENT (NRR)

*Operating expenses (excluding depreciation and FERC fees) are the main component of the NRR. The 2018 operating expenses are expected to increase by three percent over the 2017 forecast.*



SPP's services provide net benefits to members in excess of \$1.7 billion annually at a benefit-to-cost ratio of more than 11-to-1.



SPP's role is to ensure the reliable supply of power, adequate transmission infrastructure and competitive wholesale electricity prices for a 546,000-square-mile region. The reliable planning and operation of the wholesale electric grid is SPP's main focus. Resources identified in the annual budget allow SPP to successfully perform these responsibilities.

| <b>Income Statement</b>       |                    |                      |                    |                   |
|-------------------------------|--------------------|----------------------|--------------------|-------------------|
| <u>\$ millions</u>            | <u>2017 Budget</u> | <u>2017 Forecast</u> | <u>2018 Budget</u> | <u>2018 Prior</u> |
| <b>Income</b>                 |                    |                      |                    |                   |
| Tariff Administration Service | \$160.5            | \$162.4              | \$164.0            | \$168.2           |
| Fees & Assessments            | 28.1               | 26.7                 | 26.1               | 28.8              |
| Contract Services Revenue     | 0.5                | 0.5                  | 0.2                | 0.5               |
| Miscellaneous Income          | 5.0                | 5.2                  | 4.0                | 5.1               |
| <b>Total Income</b>           | <b>\$194.1</b>     | <b>\$194.8</b>       | <b>\$194.2</b>     | <b>\$202.6</b>    |
| <b>Expense</b>                |                    |                      |                    |                   |
| Salary & Benefits             | \$91.3             | \$93.0               | \$96.1             | \$94.0            |
| Depreciation                  | 30.5               | \$29.1               | 19.4               | 23.7              |
| Communications & Maintenance  | 22.2               | \$20.3               | 22.8               | 25.6              |
| Outside Services              | 14.5               | \$13.2               | 14.6               | 15.8              |
| Administrative / Other        | 16.1               | \$15.4               | 14.5               | 16.3              |
| Assessments & Fees            | 18.6               | \$21.7               | 20.3               | 19.2              |
| Travel & Meetings             | 3.3                | \$3.1                | 3.1                | 3.5               |
| <b>Total Expense</b>          | <b>\$196.4</b>     | <b>\$195.8</b>       | <b>\$190.8</b>     | <b>\$198.1</b>    |
| <b>Net Income (Loss)</b>      | <b>(\$2.3)</b>     | <b>(\$1.0)</b>       | <b>\$3.5</b>       | <b>\$4.5</b>      |
| Debt Repayment                | \$23.2             | \$23.2               | \$23.4             | \$28.0            |
| MWh Forecast (in millions)    | 383.0              | 387.5                | 382.1              | 383.0             |
| Net Revenue Requirement       | \$160.5            | \$160.9              | \$164.0            | \$168.2           |
| Recommended Admin Fee / MWh   | \$0.419            | \$0.419              | \$0.429            | \$0.439           |

Operating expenses (excluding depreciation and FERC assessments) are expected to be \$151.0 million in 2018, an increase of \$3.7 million compared to the 2017 budget. Growth in operating expenses results primarily from compensation increases due to additional staff and merit increases; and enterprise technology maintenance and communication infrastructure increases as SPP continues to expand the quality and quantity of its services through IT-intensive capital projects and investments in SPP's IT infrastructure. The increase is partially offset by lower interest expense in 2018 due to delays in funding requirements.

Maintenance expense is expected to increase in 2018 by \$1.7 million over the 2017 forecast. The increase results from new capital expenditures and projects expected to be implemented throughout 2018. For new capital expenditures, the majority of maintenance expense will support new and replacement servers, new storage and networking equipment (primarily



driven by critical infrastructure protection (CIP) and electronic security perimeter (ESP separation) and increased software licensing.

Debt repayments comprise the second largest component of NRR after operating expenses. Although debt repayments remain relatively consistent with the 2017 budget and forecast, the 2018 budget is lower than the 2018 prior budget. The prior budget assumed additional funding for capital expenditures would be necessary in 2017, with principal payments due beginning in 2018. Capital purchases trailed budget during 2017 therefore the need for additional funding also was delayed.

## BILLING DETERMINANTS

SPP allocates the NRR to transmission customers based on their purchase of point-to-point transmission service (PtP) and/or network integrated transmission service (NITS). Customers purchasing PtP represent approximately 10 percent of total annual billing determinants while NITS customers represent approximately 90 percent of total annual billing determinants. PtP service is billed based on reserved hourly transmission capacity. NITS is billed based on the prior year's 12-month average monthly peak demand (12CP) for each customer.



The 2018 budget assumes a 1 percent reduction in billing units from the 2017 forecast.

SPP collected monthly peak demand data from its membership for the months of January through July 2017. The average monthly peak demand through July 2017 is 1.52 percent higher than the same period in 2016 and 0.74 percent below the same period in 2015.

The growth in monthly peak demand experienced in the SPP footprint in 2017 is largely due to higher peak demand in the first quarter of 2017 compared to the first quarter of 2016. Average peak demand in the first quarter of 2017 increased over 3 percent compared to the same period in 2016. This growth was largely due to the extremely weak demand experienced in the first quarter of 2016, which was down over 10 percent from the first-quarter peak demand of 2015. Peak demand in the April–July period of 2017 is consistent with the same period of 2016.

Several of SPP's larger utility systems have indicated disappointment with the energy demand in the months of August and September of 2017. Based on this information and the knowledge that fourth-quarter peak demand from 2016 was unexpectedly strong, SPP forecasts a 2 percent year-over-year reduction in peak demand for the months of August through November.

A 12 percent reduction in peak demand will be used for December to bring the December forecasted peak demand to 2015 levels.

Based on the above analysis and illustrated in the table below, the 2018 budget assumes a 1 percent reduction in billing units from the 2017 forecast. The units below represent Schedule 9 average monthly peaks.

|     | Peak Demand (GW) |             |             | Percent Change Year over Year |                      |                      |
|-----|------------------|-------------|-------------|-------------------------------|----------------------|----------------------|
|     | <u>2015</u>      | <u>2016</u> | <u>2017</u> | <u>2016 vs. 2015</u>          | <u>2017 vs. 2016</u> | <u>2017 vs. 2015</u> |
| Jan | 41.7             | 38.2        | 40.3        | -8.53%                        | 5.61%                | -3.40%               |
| Feb | 39.5             | 36.1        | 35.4        | -8.60%                        | -2.08%               | -10.50%              |
| Mar | 38.2             | 32.9        | 34.8        | -13.85%                       | 6.02%                | -8.66%               |
| Apr | 32.0             | 32.6        | 33.0        | 1.91%                         | 1.22%                | 3.15%                |
| May | 34.7             | 36.9        | 39.6        | 6.34%                         | 7.43%                | 14.24%               |
| Jun | 46.6             | 48.7        | 46.9        | 4.56%                         | -3.71%               | 0.68%                |
| Jul | 50.2             | 51.0        | 50.7        | 1.71%                         | -0.55%               | 1.16%                |
| Aug | 49.3             | 50.9        | 49.9        | 3.29%                         | -2.00%               |                      |
| Sep | 46.6             | 44.8        | 43.9        | -3.95%                        | -2.00%               |                      |
| Oct | 36.3             | 37.8        | 37.0        | 4.03%                         | -2.00%               |                      |
| Nov | 33.0             | 34.2        | 33.5        | 3.50%                         | -2.00%               |                      |
| Dec | 35.6             | 41.0        | 36.1        | 15.23%                        | -12.00%              |                      |

## COMPONENTS OF 2018 NRR AND ADMINISTRATIVE FEE

The following table illustrates the calculation of the administrative fee. The 2018 calculation includes funding of the 2018 capital reserve and an adjustment to NRR to account for expected over-recovery in 2017.

### Net Revenue Requirement (NRR) & Administrative Fee (\$ millions)

|  | 2017<br>Budget | 2017<br>Forecast <sup>(1)</sup> | 2018<br>Budget | 2018 Prior<br>Estimate <sup>(2)</sup> |
|--|----------------|---------------------------------|----------------|---------------------------------------|
| <b>Total expense (excluding deprec. and FERC exp.)</b> | <b>\$147.3</b> | <b>\$146.5</b>                  | <b>\$151.0</b> | <b>\$155.2</b>                        |
| Debt service   | 23.2           | 23.2                            | 23.4           | 28.0                                  |
| Capital expenditure reserve                            | 3.9            | 3.9                             | 3.6            | 5.6                                   |
| <b>Gross revenue requirement</b>                       | <b>\$174.4</b> | <b>\$173.7</b>                  | <b>\$177.9</b> | <b>\$188.8</b>                        |
| Less:  |                |                                 |                |                                       |
| NERC revenue   | (\$10.8)       | (\$10.0)                        | (\$4.7)        | (\$11.2)                              |
| Other revenues   | (6.1)          | (6.5)                           | (4.7)          | (6.2)                                 |
| NRR adjustments <sup>(3)</sup>                         | 3.0            | 3.7                             | (4.5)          | (3.2)                                 |
| <b>Net revenue requirement</b>                         | <b>\$160.5</b> | <b>\$160.9</b>                  | <b>\$164.0</b> | <b>\$168.2</b>                        |
| Billing determinants (MWh millions) <sup>(4)</sup>     | 383.0          | 387.5                           | 382.1          | 383.0                                 |
| Calculated admin fee / MWh                             | \$0.419        | \$0.415                         | \$0.429        | \$0.439                               |
| <b>Proposed admin fee / MWh</b>                        | <b>\$0.419</b> | <b>\$0.419</b>                  | <b>\$0.429</b> | <b>\$0.439</b>                        |
| Admin fee tariff cap                                   | \$0.430        | \$0.430                         | \$0.430        | \$0.430                               |

(1) Total expense for 2017 also excludes \$1.6 non-cash items such as swap valuation adjustments and realized/unrealized gains on investments

(2) 2018 Prior Year Estimate refers to the 2018 estimate made during the 2017 budget presentation

(3) Refer to section below

(4) Defined as prior-year average monthly coincident peak for network service and capacity for point-to-point service in MWh

### NRR Adjustments (\$ millions)

|   | 2017<br>Budget | 2017<br>Forecast | 2018<br>Budget | 2018 Prior<br>Estimate <sup>(2)</sup> |
|---|----------------|------------------|----------------|---------------------------------------|
| <b>NRR Adjustments (\$ millions)</b>    |                |                  |                |                                       |
| Pension & retiree healthcare (non-cash) | (\$2.5)        | (\$3.0)          | (\$2.6)        | (\$2.8)                               |
| Capital lease maintenance (non-cash)    | (0.4)          | (0.4)            | (0.4)          | (0.4)                                 |
| 2016 Under-recovery                     | 5.9            | 7.1              |                |                                       |
| 2017 Over-recovery                      |                |                  | (1.5)          |                                       |
| <b>Total NRR adjustments</b>            | <b>\$3.0</b>   | <b>\$3.7</b>     | <b>(\$4.5)</b> | <b>(\$3.2)</b>                        |

## FUTURE FORECASTING

SPP constructs a three-year budget plan each year in accordance with the tariff. The 2018–2020 budget is used as the basis for the five-year forecast. Consistent with the original three-year budget, the billing units for 2021 and 2022 remain equal to the 382.1 MWh forecast for 2018 thru 2020, and only inflation adjustments were applied to the operating expenses.

Capital expenditures also are assumed to be consistent with the 2020 forecast with inflation adjustments. SPP has included in its rate recovery in 2021 and 2022 collection of 20 percent of the forecast capital expenditures for each year. This collection will serve to reduce interest costs going forward.

## SPP Five Year Forecast

|                               | <u>2018 Budget</u> | <u>2019 Budget</u> | <u>2020 Budget</u> | <u>2021 Budget</u> | <u>2022 Budget</u> |
|-------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| <b>Income</b>                 |                    |                    |                    |                    |                    |
| Tariff Administration Service | \$164.0            | \$178.8            | \$182.4            | \$189.5            | \$196.3            |
| Fees & Assessments            | 26.1               | 21.4               | 21.4               | 21.8               | 22.3               |
| Contract Services Revenue     | 0.2                | 0.0                | 0.0                | 0.0                | 0.0                |
| Miscellaneous Income          | 4.0                | 4.0                | 4.1                | 4.1                | 4.2                |
| <b>Total Income</b>           | <b>\$194.2</b>     | <b>\$204.2</b>     | <b>\$207.9</b>     | <b>\$215.6</b>     | <b>\$222.8</b>     |
| <b>Expense</b>                |                    |                    |                    |                    |                    |
| Salary & Benefits             | \$96.1             | \$101.6            | \$103.9            | \$106.0            | \$108.1            |
| Depreciation & Amortization   | 19.4               | 22.0               | 22.7               | 23.1               | 23.6               |
| Communications & Maintenance  | 22.8               | 24.3               | 25.6               | 26.1               | 26.6               |
| Outside Services              | 14.6               | 13.7               | 12.8               | 13.1               | 13.4               |
| Administrative / Other        | 14.5               | 14.2               | 13.8               | 14.1               | 14.4               |
| Assessments & Fees            | 20.3               | 20.3               | 20.3               | 20.7               | 21.1               |
| Travel & Meetings             | 3.1                | 2.9                | 2.9                | 3.0                | 3.1                |
| <b>Total Expense</b>          | <b>\$190.8</b>     | <b>\$198.9</b>     | <b>\$202.0</b>     | <b>\$206.1</b>     | <b>\$210.2</b>     |
| <b>Net Income (Loss)</b>      | <b>\$3.5</b>       | <b>\$5.3</b>       | <b>\$5.9</b>       | <b>\$9.5</b>       | <b>\$12.6</b>      |
| Debt Repayment                | \$23.4             | \$26.6             | \$28.2             | \$32.2             | \$35.7             |
| MWh Forecast (in millions)    | 382.1              | 382.1              | 382.1              | 382.1              | 382.1              |
| Net Revenue Requirement       | \$164.0            | \$178.8            | \$182.4            | \$189.5            | \$196.3            |
| Recommended Admin Fee / MWh   | \$0.429            | \$0.468            | \$0.477            | \$0.496            | \$0.514            |

## IV. BUDGET OVERVIEW

This budget document provides an overview and outlines details of the cost of services and components of the net revenue requirement, which consists of the following:

- Capital projects (discussed in Section V)
- Operating expenses (discussed in Sections VI and VII)
- Debt service (discussed in Section VIII)

Operating expenses represent the largest component of the net revenue requirement and consist of budgeted costs for ongoing operations.

Capital projects are investments in long-term assets required by SPP to meet its strategic goals and operational requirements. These capital expenditures represent costs incurred to enhance or expand current systems and services and to maintain existing capabilities.

In addition to the foundation projects, the budget identifies nine capital projects impacting 2018–2020. Foundation projects include capital spending to replace or extend the useful life of

existing assets or systems. The foundation budget also includes expenditures for new enterprise technologies (servers, data storage, networking equipment and software licenses) driven by security requirements, application and architectural enhancements, and legacy growth.

SPP's longstanding policy has been to fund capital expenditures through issuance of debt with terms somewhat consistent with the expected useful life of the assets acquired. This policy is designed to best recover the cost of the assets from the customers benefiting from the assets. Debt service costs are principal payments and interest expense related to various borrowings obtained to fund SPP's capital expenditures.

## **BUDGET GUIDANCE AND ASSUMPTIONS**

*The SPP 2018 Operating Plan was used as a guide for development of the budget, with the strategic plan serving as the foundation.*

Planning meetings that began in June 2017 provided guidance in developing the 2018 budget. Although a zero-based methodology was utilized in certain previous years, under the direction of the executive team, each department director created an incremental-based budget for operating expenses. The incremental-based method also was utilized in the 2017 budget process.

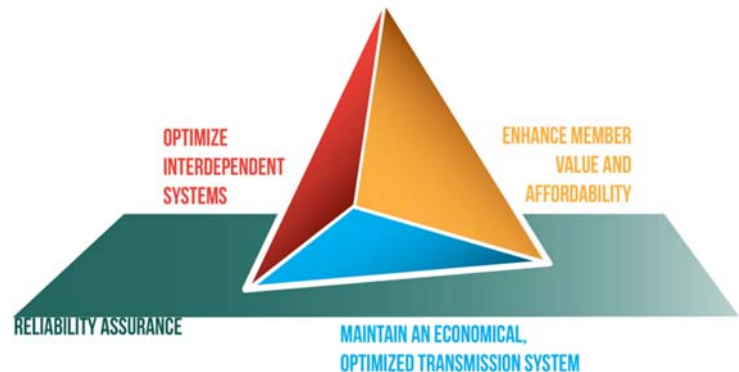
Adhering to SPP's fiscal responsibility, justifications for significant changes from the current 2017 forecast were required and reviewed by management. These material changes are discussed in detail in the Resource Utilization Section VI.

The combined efforts of identifying required operating expenses, and planning for capital projects along with the associated funding resulted in the recommended NRR and associated administrative fee.

## ALIGNMENT OF 2018 BUDGET WITH SPP'S STRATEGIC PLAN

*The Finance Committee (FC) and the Strategic Planning Committee (SPC) endorsed the 2018 Operating Plan as consistent with the alignment with SPP's strategic plan.*

The four foundational strategies of SPP's strategic plan are 1) ensuring reliability in planning and operation of the electric power grid, 2) optimizing interdependent systems, 3) enhancing member value and affordability, and 4) maintaining an economical, optimized transmission system.



The focus of these foundational strategies is to create the capabilities and operational processes necessary to fulfill SPP's mission and to maintain or improve its value propositions in the face of a rapidly changing environment. These four strategies are interdependent, with reliability assurance as the basis and the enhancement of member value and affordability as the discipline to drive all SPP strategies.

The SPC meets annually to consider "signposts," which are issues that may require adjustments to the way the organization strategizes and tactically addresses industry trends that may affect SPP and its members. During its 2017 annual meeting, the SPC reviewed a number of trends including organized markets, reduced demand for energy, declining marginal energy prices, new generation, distributed energy, demand response, energy efficiency and member-company retail rate considerations.

The committee also discussed other pressing concerns affecting the market and transmission planning services SPP provides on behalf of its membership. With all these items identified, the SPC maintained that the four foundational strategies inherent in the most recent strategic plan remain relevant to the organization today.

Changes to the previous plan include the revision of the initial strategic initiatives under each of the foundational strategies to reflect either their completion or reprioritization. The committee also added new strategic initiatives to foundational strategies based on signpost observations.

More information on the relationship between these foundational strategies and major projects investments in 2018 can be found in the 2018 Operating Plan document in the Supplementary Schedules Section X.

## V. CAPITAL PROJECTS

*SPP expects 2018-2020 capital expenditures to be approximately \$47.4 million.*

Beginning in early 2017, a comprehensive list of new and ongoing projects was compiled in consideration for the 2018–2020 budget under the direction of SPP’s project review and prioritization committee (PRPC) and in collaboration with staff from the project management office (PMO), accounting and IT departments. These projects are in addition to the foundation capital expenditures for IT, operations, settlements and facilities for routine refresh and upkeep.

The PRPC worked closely with project managers, IT directors and vendor managers to create scope requirements and to estimate anticipated workload associated with the implementation of the projects.

The PRPC reviewed 18 new and carryover project requests for the 2018-2020 budget cycle. The committee reviewed, ranked and assessed the value of the submitted projects and ultimately submitted its recommendation to the SPP officers in August 2017 for the approval of all foundation initiatives and 9 of the 18 proposed projects. The projects that were not recommended were declined generally due to uncertainty concerning regulatory requirements and timelines.

### CAPITAL PROJECTS AND THE STRATEGIC PLAN

*The capital budget was designed to support foundational strategies within the 2018 Strategic Plan, with the capital initiatives acting as guidelines for the tactical implementation.*

The IT foundation initiatives are discussed in greater detail in the Foundation Capital Expenditures section following the discussion on capital projects and the strategic plan.

Following is a table with budgeted amounts for each of the foundational strategies including a list of deferred, contingent or declined projects, which are not included in the 2018–2020 capital budget.

### 2018 - 2020 Capital Expenditures (\$ millions)

|   | Prior<br>Year(s) | 2018<br>Budget | 2019<br>Forecast | 2020<br>Forecast | Total<br>Capital |
|---|------------------|----------------|------------------|------------------|------------------|
| Reliability Assurance                       | \$ 1.8           | \$ 1.0         | \$ 3.8           | \$ -             | \$ 6.6           |
| Enhance and Optimize Interdependent Systems | -                | 2.7            | 2.4              | 2.3              | 7.4              |
| Enhance Member Value and Affordability      | 1.9              | 3.8            | 1.0              | 0.4              | 7.1              |
| IT Service Management Tool Upgrade          | -                | 1.0            | -                | -                | 1.0              |
| IT Foundation *                             | -                | 9.3            | 9.4              | 10.3             | 29.0             |
| <b>Total Capital Budget</b>                 | <b>\$ 3.7</b>    | <b>\$ 17.9</b> | <b>\$ 16.6</b>   | <b>\$ 13.0</b>   | <b>\$ 51.2</b>   |

### 2018 - 2020 Capital Budget

**\$ 47.4**

#### Deferred, Contingent or Declined Projects

|   |               |                |                |                |                |
|---|---------------|----------------|----------------|----------------|----------------|
| Reliability Communications Tool               | \$ -          | \$ 0.3         | \$ -           | \$ -           | \$ 0.3         |
| Replicated Data Server                        | -             | 0.2            | -              | -              | 0.2            |
| Freeze Date Replacement Allocation Calculator | -             | -              | 0.2            | -              | 0.2            |
| Storage & Distributed Generation              | -             | -              | 0.2            | -              | 0.2            |
| <b>Total Deferred or Contingent Projects</b>  | <b>\$ -</b>   | <b>\$ 0.5</b>  | <b>\$ 0.5</b>  | <b>\$ -</b>    | <b>\$ 0.9</b>  |
| Gen DC Market Modeling                        | -             | 0.4            | -              | -              | 0.4            |
| Online SSAT                                   | -             | -              | -              | 0.2            | 0.2            |
| Enhanced Public Data                          | -             | -              | 0.1            | -              | 0.1            |
| Order 831 Offer Cap                           | -             | 0.1            | -              | -              | 0.1            |
| Shadow Allocation Calculator                  | -             | -              | 0.0            | -              | 0.0            |
| <b>Total Declined Projects</b>                | <b>\$ -</b>   | <b>\$ 0.5</b>  | <b>\$ 0.1</b>  | <b>\$ 0.2</b>  | <b>\$ 0.8</b>  |
| <b>Original Recommendation</b>                | <b>\$ 3.7</b> | <b>\$ 18.8</b> | <b>\$ 17.2</b> | <b>\$ 13.2</b> | <b>\$ 52.9</b> |

\* Foundation projects are reforecast during each budget cycle and do not include any carry-over funds.

The following narrative provides a brief explanation of how major initiatives are designed to support the strategies. Capital expenditures for IT foundation include expenditures for both improving and maintaining SPP's technology infrastructure. Such expenditures support services across all areas of the company and are not specifically tied to any specific foundational strategy. The IT Service Management Tool Upgrade project also supports improving and maintaining the technology infrastructure.

## RELIABILITY ASSURANCE

*The reliability assurance foundation strategy seeks a proactive approach to the changing dynamics of the transmission system to maintain and enhance the reliable transmission of energy over member facilities.*



|   | Prior<br>Year(s) | 2018<br>Budget | 2019<br>Forecast | 2020<br>Forecast | Total<br>Capital |
|---|------------------|----------------|------------------|------------------|------------------|
| <b>Reliability Assurance</b>                      |                  |                |                  |                  |                  |
| Training and Testing Simulated Environment (TTSE) | \$ 0.3           | \$ -           | \$ 3.0           | \$ -             | \$ 3.3           |
| Voltage Security Assessment Tool (VSAT)           | 1.3              | 0.1            | -                | -                | 1.4              |
| Transient Stability Tool (TSAT)                   | -                | 0.6            | 0.8              | -                | 1.4              |
| Identity and Access Management (IAM)              | 0.2              | 0.3            | -                | -                | 0.5              |
| <b>Total Reliability Assurance</b>                | <b>\$ 1.8</b>    | <b>\$ 1.0</b>  | <b>\$ 3.8</b>    | <b>\$ -</b>      | <b>\$ 6.6</b>    |

- Training and Testing Simulated Environment (TTSE): The TTSE initiative will fully integrate energy management system (EMS) and Integrated Marketplace data into existing operator training systems. This will provide SPP’s operators with real-time and real-world training scenarios to prepare for better management of the system when faced with challenging real-time situations.
- Voltage Security Assessment Tool (VSAT): The VSAT will help determine at what point a voltage collapse might occur on the transmission system for a defined set of contingencies. This will allow SPP’s operators and engineers to take proactive measures to protect highly valued transmission assets if certain scenarios appear plausible.
- Transient Stability Assessment Tool (TSAT): The TSAT will help detect transient stability constraints on the transmission system that current tools cannot identify. Situational awareness will increase, resulting in SPP operators’ ability to respond to potentially critical events in a timelier manner.
- Identity and Access Management System (IAM): The IAM system will provide centralized provisioning and removal of access to certain critical SPP reliability and market systems. This will help increase SPP’s cybersecurity posture and compliance objectives.

## ENHANCE AND OPTIMIZE INTERDEPENDENT SYSTEMS

*This foundational strategy seeks to both enhance and protect the interdependency of critical energy systems within the region and along regional seams, and includes the further optimization of SPP’s Integrated Marketplace.*

|  | Prior<br>Year(s) | 2018<br>Budget | 2019<br>Forecast | 2020<br>Forecast | Total<br>Capital |
|--|------------------|----------------|------------------|------------------|------------------|
| <b>Enhance and Optimize Interdependent Systems</b>       |                  |                |                  |                  |                  |
| Operations Foundation *                                  |                  | \$ 2.4         | \$ 2.3           | \$ 2.3           | \$ 7.0           |
| Data Lake Phase 3  | -                | 0.3            | 0.1              | -                | 0.4              |
| <b>Total Enhance and Optimize Interdependent Systems</b> | <b>\$ -</b>      | <b>\$ 2.7</b>  | <b>\$ 2.4</b>    | <b>\$ 2.3</b>    | <b>\$ 7.4</b>    |

\* Foundation projects are reforecast during each budget cycle and do not include any carry-over funds.

- **Operations Foundation Capital Spending:** Enhancements to the Integrated Marketplace systems are continually contemplated by staff and stakeholders. These changes offer opportunities for increased efficiencies, regulatory compliance and other benefits for a robust market.
- **Data Lake Phase 3:** The Integrated Marketplace has created massive amounts of stored data, which can encumber server and database efficiency. The Data Lake initiative continues SPP's efforts to offload less frequently used data onto more cost-effective storage devices, resulting in increased performance and cost effectiveness for critical data access.

## ENHANCE MEMBER VALUE AND AFFORDABILITY

*This strategy seeks to improve the value SPP provides to its members through efficiency and effectiveness of processes and deliverables.*

|   | Prior<br>Year(s) | 2018<br>Budget | 2019<br>Forecast | 2020<br>Forecast | Total<br>Capital |
|---|------------------|----------------|------------------|------------------|------------------|
| <b>Enhance Member Value and Affordability</b>       |                  |                |                  |                  |                  |
| Settlement Systems Replacement                      | \$ 1.8           | \$ 3.3         | \$ 0.2           | \$ -             | \$ 5.3           |
| Facilities Foundation *                             |                  | 0.2            | 0.3              | 0.3              | 0.8              |
| Settlements Foundation *                            |                  | 0.3            | 0.1              | 0.1              | 0.5              |
| Project Management Tool Replacement                 | -                | -              | 0.4              | -                | 0.4              |
| Circuit Redesign                                    | 0.2              | 0.0            | -                | -                | 0.2              |
| <b>Total Enhance Member Value and Affordability</b> | <b>\$ 1.9</b>    | <b>\$ 3.8</b>  | <b>\$ 1.0</b>    | <b>\$ 0.4</b>    | <b>\$ 7.1</b>    |

\* Foundation projects are reforecast during each budget cycle and do not include any carry-over funds.

- **Settlement Systems Replacement:** Development of a new settlement system will provide SPP settlement analysts with greater flexibility to respond to SPP and member-driven initiatives with respect to transmission and market transactions. The system will be wholly supported by SPP staff resulting in significant long-term savings.
- **Facilities Foundation Capital Spend:** Enhancements to SPP's facilities are often required for security, safety and extension of its usable life. Capital spending associated with

SPP's facilities are designed to support the company's compliance, contractual and fiduciary requirements.

The following section describes noteworthy projects in greater detail. A complete list of initiatives and associated capital budgets appears in the Supplementary Schedules Section X.

## **MAJOR CAPITAL PROJECTS**

### **Settlement Systems Replacement**

The objective of this project is to replace the current market and transmission settlement systems with a custom designed, single, high-performance and scalable system solution that will provide greater flexibility to respond to SPP initiatives and member requests.

The new settlement system solution will be supported by internal IT staff, which will improve the response time for enhancements and reduce support costs. The current settlement system solution includes two separate systems for market and transmission settlements. These systems currently experience performance and stability issues and create obstacles for the settlements department to seamlessly execute the processes and procedures required to meet SPP's tariff obligations. This project kicked off in 2016 and is expected to be completed by mid-2019.

### **Training and Testing Simulated Environment (TTSE)**

This project is a phased evolution of the dispatcher-training simulator (DTS) to a more fully integrated training and testing simulated environment that incorporates the energy management system (EMS) and market systems. This fully integrated simulator will provide a platform to help simulate the operations environment and prepare SPP operators for normal and emergency situations.

Phase 1 was completed in 2016 and included an independent, stand-alone DTS environment for EMS along with some vendor enhancements. Phase 2 considers the addition of a stand-alone interactive market simulator and is not expected to be completed until 2019 following a thorough analysis and testing of potential solutions. Phase 3 consists of the addition of visualization tools and is expected to be completed in 2018.

### **Voltage Security Assessment Tool (VSAT)**

VSAT will identify constraints on the system to enable real-time operators to mitigate the constraints by using current congestion-management tools. VSAT also will enable real-time operators and operational planning engineers to prepare for and react to stability concerns to maintain reliable operation of the bulk electric system. The tool will provide more in-depth data

to determine at what point voltage collapse will occur for the defined contingencies. This allows SPP to make proactive decisions if studies indicate post-contingent voltage collapse could occur outside the threshold of current criteria.

The project kicked off in 2017 with the installation of the VSAT software in the quality assurance (QA) environment along with testing and training on the tool. The project will conclude in 2018 with the implementation into the production environment.

### **Transient Stability Assessment Tool (TSAT)**

The TSAT application will enable real-time operators and planning engineers to perform transient stability assessments to prepare for and react to stability concerns. The system will monitor transient stability by taking an EMS snapshot and performing power system transfers that stress the current case. If the tool indicates transient stability issues, corrective actions will be made to maintain reliable operation of the transmission system. TSAT will be used to ensure power transfers do not cause a voltage collapse event or blackout. The inability to monitor transient stability could hinder SPP's reaction to a system disturbance as SPP's footprint continues to increase its usage of renewable generation.

The project is scheduled to start in 2018 after the VSAT project is in production. Software enhancements, interfaces and QA hardware setup is expected to be completed in 2018 with additional hardware for the production environment to be acquired in early 2019. TSAT is anticipated to be ready for real-time operations during the first quarter of 2019.

### **IT Service Management Tool Upgrade**

The current version of SPP's service management system will no longer be supported by the vendor beginning in February 2018. The tool is critical for performing processes related to change and configuration management that provide evidence of compliance with CIP standards and with the service organization control (SOC 1) audit report. The project will consist of a complete review of service management needs to determine whether an upgrade to the next available version is appropriate or if a complete replacement of the system with an alternative solution provides greater value.

Failure to complete this project would expose SPP to the risks associated with utilizing a system that is unsupported by the vendor (i.e. receiving no functional or security patches). Implementation of a newer system should result in the reduction of IT support and maintenance costs. Work has already begun in 2017 with the research of potential vendors. The project should be completed by the end of 2018.

### **Identity and Access Management (IAM)**

IAM addresses the need to ensure appropriate access to resources across diverse technology environments and to meet increasingly rigorous compliance requirements. SPP is exposed to significant cybersecurity and compliance risk along with reduced operating efficiency due to continued use of manual processes.

An integrated software solution that manages identity and access has become a necessity for SPP due to various factors including the constant threat of external and internal cyberattacks, the addition of the Integrated Marketplace, and the increased rigor of SOC 1 objectives and NERC CIP Version 5. The project kicked off in 2017 and is expected to be completed in early 2018.

### **Data Lake Phase 3**

The maturation of SPP's Integrated Marketplace resulted in the need to access a higher volume (than originally anticipated) of historical data for business analytics and reporting by certain groups. The data growth and new business requirements resulted in the origination of the Data Lake project, which commenced in 2016 as an IT foundation project.

In phase 1 of the project, less frequently used data from high-capacity data warehouse appliances were successfully offloaded to a cost-economical BigData storage solution that provides SQL access to the data, scales incrementally at both compute and storage levels depending on the need, and postpones the need for purchasing new high-capacity data warehouse appliances for the production environment. Data Lake phase 2 (currently in progress) concentrates on the data access controls, improving the checkpoint/restart capabilities, improving the SQL query performance, evaluating/implementing transactional capabilities, offloading more historical data from high capacity data warehouse appliances, and evaluating technologies to feed data directly to Data Lake infrastructure.

The 2018 goals for Data Lake Phase 3 are to 1) provide more functionality to allow business users the ability to run the existing processes on the Data Lake infrastructure, 2) provide high availability infrastructure between data centers (i.e. providing greater automation in a fail-over situation between locations), 3) provide visualization and data analysis capabilities using the tools supported by the data services team, 4) implement technologies to allow certain data to bypass the data storage warehouse and feed directly to the Data Lake, and 5) reduce the dependency on costly high capacity data warehouse type appliances.

### **Project Management Tool Replacement**

The current project management tool is utilized for project and program management as well as for resource management in the IT applications and engineering departments. Mainstream

support for the tool expires in 2018 and hardware reaches end of life in 2020. This project will encompass a cost-benefit analysis to evaluate whether an upgrade to the current product or selection of an entirely new solution is more feasible. Failure to upgrade or replace the current system along with its underlying infrastructure would expose SPP to the risks associated with utilizing a system that is not supported by the vendor and maintaining hardware that is operating past its recommended lifespan. The project is currently scheduled to be completed in two phases. Phase 1 would occur in 2018 and would include discovery and analysis activities. Phase 2 would follow in 2019 with the implementation of the proposed solution.

## FOUNDATION CAPITAL EXPENDITURES

The following section describes the various categories of foundation capital expenditures in greater detail.

|                                | 2018<br>Budget | 2019<br>Forecast | 2020<br>Forecast | Total<br>Capital |
|--------------------------------|----------------|------------------|------------------|------------------|
| <b>Foundation</b>              |                |                  |                  |                  |
| IT Operations                  | \$ 6.4         | \$ 5.3           | \$ 7.3           | \$ 19.0          |
| IT Applications                | 0.9            | 2.0              | 0.8              | 3.7              |
| IT Cyber Security and Controls | 0.7            | 0.6              | 0.7              | 2.0              |
| IT Architecture                | 0.2            | 0.8              | 0.7              | 1.7              |
| Miscellaneous Departments      | 1.2            | 0.8              | 0.8              | 2.7              |
| <b>IT Foundation Total</b>     | <b>\$ 9.3</b>  | <b>\$ 9.4</b>    | <b>\$ 10.3</b>   | <b>\$ 29.0</b>   |
| Operations Foundation          | 2.4            | 2.3              | 2.3              | 7.0              |
| Facilities                     | 0.2            | 0.3              | 0.3              | 0.8              |
| Settlements                    | 0.3            | 0.1              | 0.1              | 0.5              |
| <b>Total Foundation *</b>      | <b>\$ 12.2</b> | <b>\$ 12.1</b>   | <b>\$ 13.0</b>   | <b>\$ 37.3</b>   |

*\* Foundation projects are reforecast during each budget cycle and do not include any carry-over funds.*

### IT Operations

The IT operations budget is subdivided between the following primary areas: systems administration, network/telecom and service management.

|                        | <b>2018<br/>Budget</b> | <b>2019<br/>Forecast</b> | <b>2020<br/>Forecast</b> | <b>Total<br/>Capital</b> |
|------------------------|------------------------|--------------------------|--------------------------|--------------------------|
| <b>IT Operations</b>   |                        |                          |                          |                          |
| Systems Administration | \$ 4.0                 | \$ 3.3                   | \$ 4.6                   | \$ 11.9                  |
| Network / Telecom      | 2.1                    | 1.8                      | 2.4                      | 6.3                      |
| Service Management     | 0.3                    | 0.2                      | 0.3                      | 0.7                      |
| IT Operations Total    | \$ 6.4                 | \$ 5.3                   | \$ 7.3                   | \$ 19.0                  |

## Systems Administration

The systems administration budget encompasses all enterprise hardware and software infrastructure, including servers, storage, backup systems, operating systems and systems-management tools. The major initiatives in the 2018 budget include the following:

- Technology/server refresh: IT’s policy is to replace physical server hardware after a five-to-six year useful life based on exposure to increased hardware failure rates, discontinued or unaffordable vendor support, operating system incompatibility and the need for faster application performance and connectivity requirements.
- Additional data storage: Based on the current outlook, nominal amounts of additional storage will be needed for the production and test/development environments, as well as for backup capacity at Chenal, Maumelle and the third offsite location. The additional production capacity will likely be in the form of “flash storage” technology, given its declining cost curve and heightened performance capabilities.
- Incremental software license: A relatively small amount of incremental purchases will be needed in 2018 related to software and licenses for anti-virus, server security, virtualization and backup/recovery.

## Network/Telecom

Network/telecom encompasses the hardware and software network, including the core data network as well as voice, telephony, firewall and network security solutions. A large portion of the 2018 budget is earmarked for hardware/software upgrades, as described below:

- Network lab: Over the next few years, several production appliances utilized within the IT network/security lab will require technology refreshes due to the expiration of vendor support or increased performance requirements. These production upgrades will

introduce new equipment into the lab environment and will include new firewalls, internet protection software and zero-day vulnerability tools.

- Load-balancing platform: Support agreements for the current platforms used to provide load-balancing services across multiple systems to achieve higher availability will expire in 2018. It is anticipated that current physical appliances will be replaced with virtual appliances.
- Routing platform: The current routing platform provides connectivity between the SPP data centers. The platform is seven years old and lacks the physical interface capacity to upgrade beyond 10G. The plan is to refresh the technology to support future capacity growth beyond 10G.
- Communications services: The current suite of communications tools provides session management, voice, video, messaging, mobility and web-conferencing services. The current version is nearing end-of-support and will require a software and hardware upgrade.
- Firewall refresh: It is anticipated that the current firewall management station hardware will require a technology refresh in 2018. This is based on storage capacity for log files and the performance requirements to push policies to the firewall.
- IPS upgrades: The corporate intrusion prevention system (IPS) is becoming more saturated with high volumes of traffic. It is anticipated that either a technology refresh or additional modules (that allow for performance gains while inspecting traffic) will be required in 2018.

Other items within the networking budget include additional firewall capacity, data center cabling and consulting services required for the communications upgrade.

## **Service Management**

Service management encompasses IT's process and control systems, including performance/asset monitoring, change management and enterprise support services (i.e. service desk).

The 2018 budget includes a relatively small amount that will be used for additional licenses and upgrade/consulting services for the monitoring and discovery products. Additional licenses are anticipated for SPP's baseline management product, along with implementation services associated with up to two major releases that incorporate software updates, new asset support



and security enhancements. Due to the size and complexity of these releases, assistance is required from the vendor for appropriate installation in SPP’s environment.

## IT Applications

The majority of the items budgeted for 2018 for IT applications are targeted for additional software licenses and/or new software tools.

|                 | 2018<br>Budget | 2019<br>Forecast | 2020<br>Forecast | Total<br>Capital |
|-----------------|----------------|------------------|------------------|------------------|
| IT Applications | \$ 0.9         | \$ 2.0           | \$ 0.8           | \$ 3.7           |

### Incremental Software License

- Database platform: The anticipated growth in new production and QA servers in 2018 will drive the need for additional database program licenses.
- Data management: SPP utilizes a data-management tool to develop, manage and transform the flow of data within the data warehouse environment. Staff anticipates additional licenses to support an increase in usage and data in 2018.

### New Software Tools/Upgrades

- Data-services workflow efficiency: A dynamic mapping module will allow streamlined support and consolidation of data-management tool flows used for table mappings.
- Automated test tools: Additional software tools are required for automating testing activities.
- Database security: Data-encryption mechanisms are necessary to improve the SPP security posture and application infrastructure upgrades in support of SPP’s evergreen roadmap.
- Data warehouse: SPP’s data warehouse runs on a high-capacity platform that continues to experience growth (currently at 70 percent capacity) and will go out of vendor support in September 2019. Evaluation of a replacement plan will occur during 2017, with implementation likely in 2018 involving new equipment and capacity.

## IT Cybersecurity and Controls

The budget for cybersecurity and controls generally encompasses costs associated with SPP’s compliance efforts with cybersecurity standards, as well as the implementation and

enforcement of quality security practices throughout the organization. A number of budget items have been identified given the increased focus in this area by SPP.

|                                | <b>2018<br/>Budget</b> | <b>2019<br/>Forecast</b> | <b>2020<br/>Forecast</b> | <b>Total<br/>Capital</b> |
|--------------------------------|------------------------|--------------------------|--------------------------|--------------------------|
| IT Cyber Security and Controls | \$ 0.7                 | \$ 0.6                   | \$ 0.7                   | \$ 2.0                   |

### Software Enhancements and Consulting

- Identity and Access Management (IAM): IAM is the security discipline that ensures appropriate access to resources across diverse technology environments, allowing SPP to meet increasingly rigorous compliance requirements. Continued enhancements to the current IAM software are planned in 2018 to keep up with the growing demands of cybersecurity.
- Security software customization: Security software provides insight into machine data generated from security technologies such as network, endpoint, access, malware, vulnerability and identity information. Several customizations have been identified to the current software, which may require implementation services from the associated vendor.
- Risk-management software customization: The current software solution assists SPP in measuring and managing potential risk to network security. Several customizations to the software have been identified, which may require implementation services from the associated vendor.

### Incremental Software, License and Storage

- Security software license and storage: More assets and data are anticipated to be added to the current security software application in 2018, which will require additional licenses and physical storage to meet compliance, auditing and security requirements.
- Risk-management software licenses: A second instance of the current risk-management software is planned for implementation in 2018. This will allow for separation of the ESP and non-ESP environments, which will enhance compliance efforts with NERC/CIP requirements for performing vulnerability assessments. Licenses will be purchased to handle incremental qualifying assets during 2018.
- Application whitelisting software: Implementation of a software solution known as application whitelisting is planned for 2018. This solution will only allow programs

recognized as trustworthy instead of attempting to identify and block malicious files and activity. Whitelisting is considerably more effective in that it changes the traditional anti-virus model from a “default allow” to a “default deny” for all executable files.

- **Public key infrastructure (PKI):** PKI entails hardware, software and processes for the creation and management of encryption keys to encrypt sensitive data. Implementation of PKI will improve SPP's security posture and provide protection from accidental exposure of sensitive data.

## IT Architecture

The budget for architecture generally encompasses costs associated with IT’s architectural roadmap, which includes current investments that are expected to yield longer-term technical, financial, security and productivity benefits. The 2018 architecture budget includes initiatives to consolidate development infrastructures between IT and operations, as well as software to allow the use of application containers to automate application deployment.

|                 | 2018<br>Budget | 2019<br>Forecast | 2020<br>Forecast | Total<br>Capital |
|-----------------|----------------|------------------|------------------|------------------|
| IT Architecture | \$ 0.2         | \$ 0.8           | \$ 0.7           | \$ 1.7           |

The following architecture initiatives identified for 2018 are related to the Data Lake Phase 3 project, which is discussed in detail in an earlier section along with other enterprise projects.

- Real-time analytics and data visualization
- Data Lake high-availability deployment

## Miscellaneous Departments (included in IT Foundation)

Items included in this foundation budget encompass all other software and hardware needs for departments outside of IT. A significant amount of the 2018 budget relates to the engineering department’s investments in tools and systems to improve modeling, planning and study activities. Further enhancements to transmission congestion rights (TCR) and other custom applications, as well as additional licensing for engineering-support software are anticipated in 2018.

|   | 2018<br>Budget | 2019<br>Forecast | 2020<br>Forecast | Total<br>Capital |
|---|----------------|------------------|------------------|------------------|
| <b>Miscellaneous Other Departments</b>  |                |                  |                  |                  |
| Engineering                             | \$ 1.0         | \$ 0.6           | \$ 0.6           | \$ 2.3           |
| Human Resources and Training            | 0.1            | 0.1              | 0.1              | 0.2              |
| Corporate Communications and Regulatory | 0.1            | 0.1              | 0.1              | 0.2              |
| Total Miscellaneous Other Departments   | \$ 1.2         | \$ 0.8           | \$ 0.8           | \$ 2.7           |

## Operations Marketplace and Other System Enhancements

The operations foundation budget primarily consists of planned enhancements to the market operations system (MOS). This includes modifications to the market operator interface (MOI), market user interface (MUI) and market clearing engine (MCE) applications as well as the market database (MDB). Maintenance costs to these systems are budgeted separately from the operations foundation capital budget.

|   | 2018<br>Budget | 2019<br>Forecast | 2020<br>Forecast | Total<br>Capital |
|---|----------------|------------------|------------------|------------------|
| <b>Operations Marketplace and Other System Enhancements</b>   |                |                  |                  |                  |
| Market Operation System (MOS)                                 | \$ 2.0         | \$ 2.0           | \$ 2.0           | \$ 6.0           |
| Dispatch Training Simulator (DTS)                             | 0.1            | 0.1              | 0.0              | 0.2              |
| Control Room Operations Window (CROW)                         | 0.1            | 0.0              | 0.0              | 0.1              |
| Energy Management System (EMS)                                | 0.1            | 0.1              | 0.1              | 0.2              |
| Open Access Technology Int'l/ Native Network Limit (OATI/NNL) | 0.1            | 0.1              | 0.1              | 0.2              |
| Miscellaneous Other *   | 0.2            | 0.2              | 0.1              | 0.5              |
| Total Operations Marketplace and Other System Enhancements    | \$ 2.4         | \$ 2.3           | \$ 2.3           | \$ 7.0           |

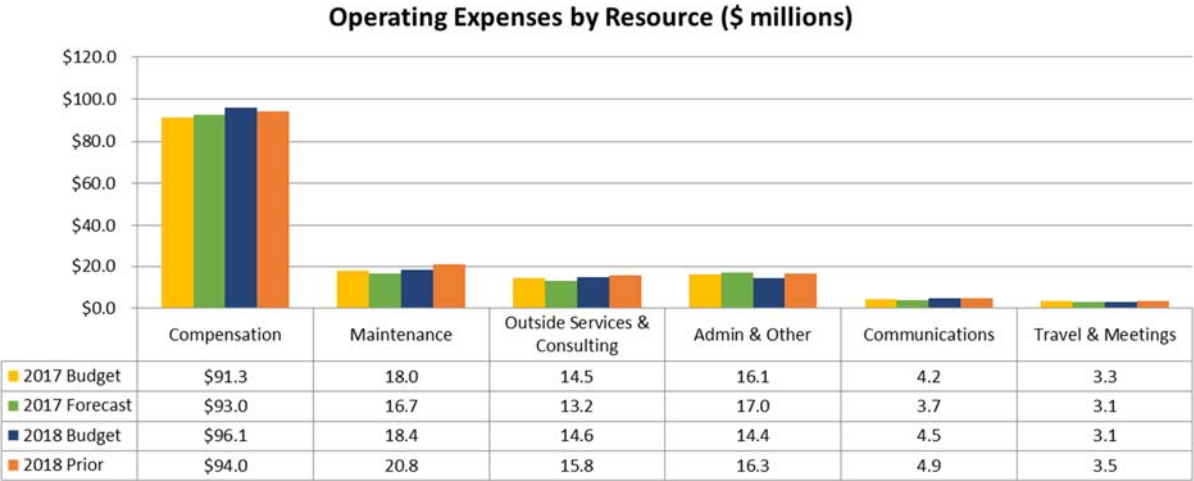
\* Includes Open Access Same-Time Information System (OASIS), Centralized Modeling Tool (CMT), Phasor Measurement Unit (PMU), Seams and PI.

The existing MOS was implemented with the SPP Integrated Marketplace go-live March 1, 2014. The SPP marketplace will continue to experience the need for higher levels of modification as both staff and market participants identify opportunities for continuous improvement for market efficiency. The budget also reflects funding for system changes as mandated by FERC orders. This trend is expected to continue throughout upcoming years as design changes are needed to improve upon certain assumptions made during the earlier stages of market rules development. This has been a consistent practice observed with other RTO energy markets.

MOS enhancements represent approximately 80 percent of the operations foundation budget. The remaining 20 percent includes budgeted enhancements for the energy management system (EMS), control-room operations window (CROW), open access same-time information system (OASIS), dispatch training simulator (DTS), centralized modeling tool (CMT) and PI systems.

## VI. RESOURCE UTILIZATION

SPP’s 2018 budget encompasses the resources necessary for SPP to carry out strategic goals and organizational objectives. The chart below shows SPP’s resources and the corresponding 2018 budget amounts in comparison to 2017 budget and forecast, as well as a comparison to amounts forecast for 2018 during the 2017 budget cycle. The following section discusses each component in detail.



**Operating Expenses by Resource (\$ millions)**

|                                  | <b>2017 Budget</b> | <b>2017 Forecast</b> | <b>2018 Budget</b> | <b>2018 Prior</b> |
|----------------------------------|--------------------|----------------------|--------------------|-------------------|
| Compensation                     | \$91.3             | \$93.0               | \$96.1             | \$94.0            |
| Maintenance                      | 18.0               | 16.7                 | 18.4               | 20.8              |
| Outside Services & Consulting    | 14.5               | 13.2                 | 14.6               | 15.8              |
| Admin & Other                    | 16.1               | 17.0                 | 14.4               | 16.3              |
| Communications                   | 4.2                | 3.7                  | 4.5                | 4.9               |
| Travel & Meetings                | 3.3                | 3.1                  | 3.1                | 3.5               |
| <b>Total Operating Expense *</b> | <b>\$147.3</b>     | <b>\$146.5</b>       | <b>\$151.0</b>     | <b>\$155.2</b>    |

*\* Excludes depreciation & FERC fees. Other expense in 2017 Forecast also excludes non-cash items.*


## STAFFING

### Valuing Resources

*SPP's recruiting process includes outreach practices that promote diversity in the workplace. SPP management is committed to recruiting and attracting candidates who best match its culture and to retaining career employees by providing an environment where employees are challenged and engaged. Doing so allows SPP to provide the highest level of service and value for its members.*

Management regularly evaluates staffing levels across all areas of the organization and makes organizational changes as necessary to align with evolving resource needs. Such efforts are evident and described in detail in the following section.

The SPP Human Resources Committee is responsible for the review and approval of employee and executive benefit plans, organizational structure and compensation programs. SPP benefit plans support the organization's goal of attracting and retaining career employees that are well-suited to the SPP corporate culture.



Dedication to continuous improvement is demonstrated by the numerous training opportunities available to employees.

The committee periodically engages consultants to benchmark SPP compensation and benefit programs and annually reviews these plans to ensure competitiveness in the marketplace while adhering to a cost-effective budget. Compensation elements are developed using benchmarks of the peer group as determined by the SPP Human Resources Committee. SPP establishes compensation elements that competitively target the 50th percentile for paygrades.

Dedication to continuous improvement is one of SPP's culture drivers. In adherence to this, the compensation budget includes funds for annual employee training and tuition reimbursement. Employees are offered various learning opportunities, including an annual leadership conference, supervisor-approved outside training and access to multiple online and in-person training classes through the SPP corporate training and professional development department. SPP administers an in-house Engineer-in-Rotation program, which seeks the most talented engineering graduates for an expansive training program. The rotating staff of engineers gain experience through on-the-job training and are placed in permanent roles as positions become available through normal employee turnover.

Staffing costs include funding for base salaries, benefits and taxes. The compensation budget includes assumptions for vacancy rates, merit increases and promotions. These assumptions are discussed in detail in the staffing components section.

## Staffing Levels

### 2017 Staffing Changes

“Evolutionary, not revolutionary” is one component of SPPs value proposition. As the organization matures and resource needs evolve, staffing levels throughout the organization are assessed. As a result, various changes were made in the 2017 headcount forecast as compared to the 2017 budget.

The focus on cybersecurity has become increasingly more critical, and SPP has consequently become increasingly proactive in its emphasis on preparedness, response, recovery and resiliency. SPP evaluated the staffing requirements necessary to foster a robust security and compliance program befitting an organization with SPP’s responsibilities on the bulk electric system and to ensure compliance with CIP standards. As a result, SPP officers approved the recommendation for five incremental staff (four in IT and one in compliance) in 2017 to facilitate these goals.

|  |                  |                    |                      |                    |
|--|------------------|--------------------|----------------------|--------------------|
| Operations management identified the need to evaluate the staffing requirements of real-time operations due to an increased attrition rate | <b>Headcount</b> | <b>2017 Budget</b> | <b>2017 Forecast</b> | <b>2018 Budget</b> |
|  | RTO Total        | 582                | 593                  | 598                |
|  | Regional Entity  | 28                 | 23                   | 11                 |
|  | SPP Total        | 610                | 616                  | 609                |

pending upcoming staff retirements. The operator-in-training (OIT) program is utilized for the development of qualified personnel to facilitate the staffing of system operator vacancies as they occur through natural attrition. A review of future attrition risks indicated the SPP operations division required the development of three additional operators in preparation of expected vacancies due to anticipated retirements and normal turnover. SPP officers approved the recommendation for three incremental OIT positions in early 2017.

In July 2017, it was announced SPP and NERC mutually agreed to terminate the Amended and Restated Delegation Agreement between NERC and SPP, which will result in the dissolution of the SPP Regional Entity (RE). Five open positions within the RE were removed from the 2017 forecast after the announcement. SPP remained committed to ensure the continued employment of the remaining SPP RE staff. As a result of this commitment to absorb additional staff upon the dissolution of the RE, the

| <b>2017 Staffing Changes</b> |     |
|------------------------------|-----|
| 2017 Budget                  | 610 |
| Out-of-budget in 2017        | 8   |
| Eliminations added back      | 3   |
| Removed RE open in 2017      | (5) |
| 2017 Forecast                | 616 |

unidentified headcount reductions originally proposed in the 2017 budget were added back to the 2017 headcount forecast.

Various other positions were reprioritized and responsibilities were reassigned throughout the year as positions became vacant due to staff turnover, retirements or internal transfers.

### 2018 Staffing Changes

Future staffing needs were evaluated during the 2018 budget process. Management identified the need for incremental staff associated with the Settlement System Upgrade and other member services. These five incremental positions were assessed by the senior management team and recommended for inclusion in the 2018 budget.

Total RE staff was 23 after removing 5 open positions in 2017. Although SPP committed to ensuring the continued employment of the RE staff, the 2018 budget includes assumptions that some of the staff will either retire or seek employment with another electric reliability compliance enforcement authority.

The 2018 budget assumes the RE will be dissolved by July 2018, and SPP will retain 11 of the 23 staff members, a net reduction of 12. This assumption is for budgeting purposes only and does not negate the possibility of retaining all 23 staff members if necessary.

|   | Approved Staffing Levels |             |             |             |
|---|--------------------------|-------------|-------------|-------------|
|   | <u>2017</u>              | <u>2018</u> | <u>2019</u> | <u>2020</u> |
| <b>2017 Budget</b>                              | <b>610</b>               |             |             |             |
| Net incremental (5 IT/Compliance, 3 Operations) | 8                        |             |             |             |
| Net reductions (5 RE reductions)                | <u>(2)</u>               |             |             |             |
| <b>2017 Forecast</b>                            | <b>616</b>               |             |             |             |
| IT Applications (2 Settlements project) *       |                          | 3           |             |             |
| Communications (Web content)                    |                          | 1           |             |             |
| Training (Reliability trainer)                  |                          | 1           |             |             |
| Net reductions (12 RE reductions)               |                          | <u>(12)</u> |             |             |
| <b>2018 Budget</b>                              |                          | <b>609</b>  |             |             |
| Compliance (GRC administrator) *                |                          |             | <u>1</u>    |             |
| <b>2019 Forecast</b>                            |                          |             | <b>610</b>  |             |
| IT Applications (DTS, SSAT) *                   |                          |             |             | <u>2</u>    |
| <b>2020 Forecast</b>                            |                          |             |             | <b>612</b>  |
| Prior Budget / Forecast                         |                          | 616         | 617         | n/a         |

*\* Refer to capital project section for details on project descriptions*



The table below shows the staff numbers by executive division:

| 2017 - 2020 APPROVED POSITIONS BY DIVISION |             |               |             |               |               |
|--|-------------|---------------|-------------|---------------|---------------|
| Headcount                                  | 2017 Budget | 2017 Forecast | 2018 Budget | 2019 Forecast | 2020 Forecast |
| Operations                                 | 158         | 162           | 162         | 162           | 162           |
| Information Technology                     | 156         | 161           | 164         | 164           | 166           |
| Engineering                                | 80          | 80            | 80          | 80            | 80            |
| Finance & Corporate Services               | 69          | 68            | 68          | 68            | 68            |
| Process Integrity <sup>(1)</sup>           | 52          | 53            | 54          | 55            | 55            |
| Regulatory & Legal                         | 27          | 27            | 27          | 27            | 27            |
| Market Monitoring (MMU)                    | 16          | 16            | 16          | 16            | 16            |
| Officer                                    | 11          | 11            | 11          | 11            | 11            |
| Interregional Relations & Market Design    | 9           | 9             | 9           | 9             | 9             |
| Corporate Communications & Gov't Affairs   | 6           | 6             | 7           | 7             | 7             |
| Other <sup>(2)</sup>                       | -2          | 0             | 11          | 11            | 11            |
| RTO Total                                  | 582         | 593           | 609         | 599           | 601           |
| Regional Entity                            | 28          | 23            | 0           | 0             | 0             |
| SPP Total                                  | 610         | 616           | 609         | 610           | 612           |

1) The Process Integrity division includes compliance, project management, training, customer relations, internal audit and interregional relations departments.

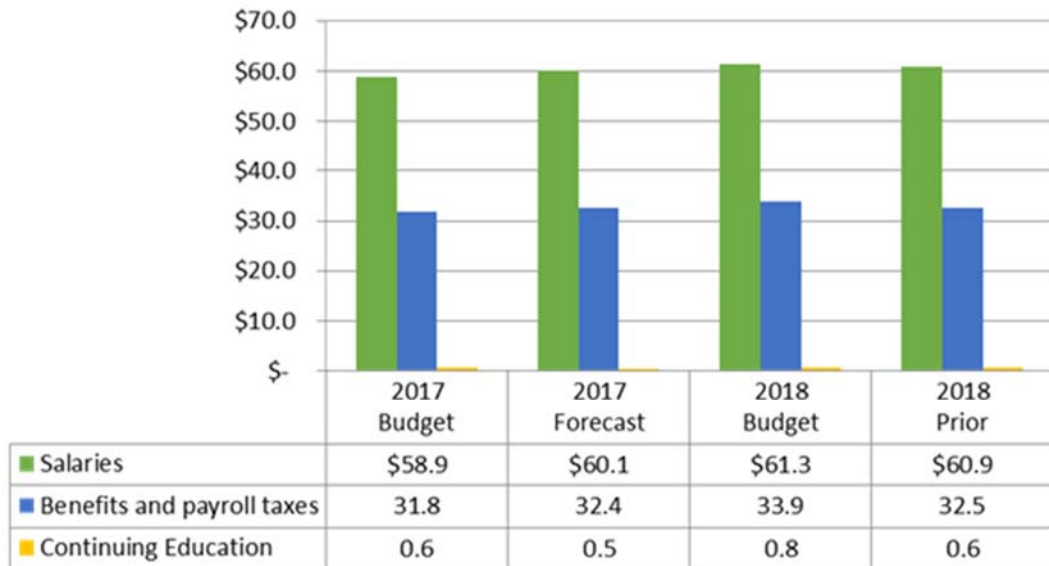
2) "Other" in the 2017 Budget represents 2 unidentified reductions (1 additional reduction was reflected in Operations). The Regional Entity positions committed to be retained by the RTO are included in "Other" in the 2018 - 2020 budgets.

## Staffing Components

*The base salary budget assumes a merit increase of 3 percent, a promotion increase of 0.75 percent and a 3 percent vacancy factor.*

The staffing budget for 2018 includes funding for salaries (including base salary and overtime pay), benefits and payroll taxes, and continuing education.

## Compensation (\$millions)



The 2017 salary forecast exceeds the 2017 salary budget as a result of variances from the vacancy rate assumed in the original budget and incremental staff added during the year. The 2017 budget assumed a 5 percent vacancy rate; however, the 2017 forecast reflects an average vacancy rate of 3 percent based on the year-to-date trend.

| Salary Expenses (\$ millions)      | 2017 Budget <sup>(1)</sup> | 2017 Forecast | 2018 Budget <sup>(2)</sup> | 2018 Prior    |
|------------------------------------|----------------------------|---------------|----------------------------|---------------|
| Base salaries at beginning of year | \$58.6                     | \$58.6        | \$59.6                     | \$60.4        |
| Incremental staff                  | 0.1                        | 1.0           | 0.3                        | 0.3           |
| RE reductions                      | 0.0                        | (0.5)         | 0.0                        | 0.0           |
| Merit Increase                     | 1.7                        | 1.7           | 1.8                        | 1.8           |
| Promotions                         | 0.5                        | 0.5           | 0.5                        | 0.5           |
| Premium Pay                        | 1.0                        | 1.1           | 1.0                        | 1.1           |
| Vacancy                            | (3.0)                      | (2.2)         | (1.9)                      | (3.1)         |
| <b>Total Salary Expenses</b>       | <b>\$58.9</b>              | <b>\$60.1</b> | <b>\$61.3</b>              | <b>\$60.9</b> |

(1) 2017 budget vacancy 5.0%, merit 3.0%

(2) 2018 budget vacancy 3.0%, merit 3.0%

## Vacancy and Merit Assumptions

During the 2017 budget planning process, 2016 vacancy levels averaged 5.5 percent. A vacancy factor of 5 percent was applied to 2017–2019 based on this data. By the end of 2017, headcount is expected to be within 2.8 percent of the projected 2017 level (599 of 616). SPP anticipates staff turnover in 2018 to be consistent with its experience in 2017. A vacancy rate of

3 percent was applied to the 2018 budget. This equates to turnover averaging 18 positions during the calendar year (591 of 609 positions).

Zero vacancy rate was applied to the 2019 – 2020 forecast based on the commitment to integrate the RE positions.

|              | <u>2017 Budget</u> | <u>2017 Forecast</u> | <u>2018 Budget</u> | <u>2018 Prior</u> |
|--------------|--------------------|----------------------|--------------------|-------------------|
| Vacancy rate | 5.0%               | 3.0%                 | 3.0%               | 5.0%              |

The Human Resources Committee (HRC) recommended an overall merit increase of \$1.8 million (3.0 percent) for 2018 based on their review of several regional and industry factors, including SPP members. The promotion pool budget of \$0.5 million is also based on the HRC recommended percentage and remains consistent with the past several years at 0.75 percent.

| <b>Merit and Promotion Budget</b> |             |             |             |             |             |
|-----------------------------------|-------------|-------------|-------------|-------------|-------------|
|                                   | <u>2014</u> | <u>2015</u> | <u>2016</u> | <u>2017</u> | <u>2018</u> |
| Merit Increase                    | \$1.4       | \$1.1       | \$1.4       | \$1.7       | \$1.8       |
| Promotion Pool                    | \$0.4       | \$0.4       | \$0.4       | \$0.5       | \$0.5       |
| Merit %                           | 2.4%        | 2.0%        | 2.5%        | 3.0%        | 3.0%        |
| Promotion %                       | 0.75%       | 0.75%       | 0.75%       | 0.75%       | 0.75%       |

## Benefits and Taxes

The budget for benefits and payroll taxes includes performance compensation; retirement plan contributions; medical, dental and life insurance benefits; relocation expenses; employee events; and payroll taxes. Below is a breakdown of employee benefits and taxes:

| <b>Benefits &amp; Taxes (\$ millions)</b>          | <u>2017 Budget</u> | <u>2017 Forecast</u> | <u>2018 Budget</u> | <u>2018 Prior</u> |
|--|--------------------|----------------------|--------------------|-------------------|
| Retirement Plans (401k and Pension)                | \$11.1             | \$11.1               | \$11.7             | \$11.4            |
| Performance Compensation                           | 9.5                | 10.0                 | 10.2               | 9.8               |
| Payroll Taxes                                      | 4.6                | 4.7                  | 5.0                | 4.8               |
| Medical Benefits                                   | 5.0                | 4.7                  | 4.9                | 4.9               |
| Other Employee Benefits                            | 0.8                | 1.1                  | 1.3                | 0.8               |
| Dental Benefits                                    | 0.4                | 0.4                  | 0.4                | 0.4               |
| Life Insurance Benefits                            | 0.4                | 0.4                  | 0.4                | 0.4               |
| <b>Total Benefits &amp; Taxes</b>                  | <b>\$31.8</b>      | <b>\$32.4</b>        | <b>\$33.9</b>      | <b>\$32.5</b>     |
| Continuing Education                               | 0.6                | 0.5                  | 0.8                | 0.6               |
| <b>Total Benefits, Taxes &amp; Con't Education</b> | <b>\$32.4</b>      | <b>\$32.9</b>        | <b>\$34.7</b>      | <b>\$33.1</b>     |

Retirement plan expense comprises the largest component of benefits and taxes, followed by performance compensation, payroll taxes and medical benefits.

The 2017 forecast and 2018 budget amounts for pension and retiree healthcare expense are based on the most recent actuarially calculated pension costs. SPP will make cash contributions of \$5.2 million to the pension plan during 2017. Contributions to the plan are expected to be \$5.9 million in 2018. The accrued expenses are included in compensation, but have no cash impact to the current year NRR. The difference between the accrued amounts and the expected cash contributions is included as a non-cash adjustment in the NRR calculation.

|                                    | <u>2017 Budget</u> | <u>2017 Forecast</u> | <u>2018 Budget</u> | <u>2018 Prior</u> |
|------------------------------------|--------------------|----------------------|--------------------|-------------------|
| <b><u>Pension</u></b>              |                    |                      |                    |                   |
| Cash contribution                  | \$5.7              | \$5.2                | \$5.9              | \$5.7             |
| Accrued pension expense            | 7.3                | 7.0                  | 7.4                | 7.5               |
| Non-cash adjustment                | \$1.6              | \$1.8                | \$1.5              | \$1.8             |
| <b><u>Retiree healthcare</u></b>   |                    |                      |                    |                   |
| Cash contribution                  | \$0.3              | \$0.0                | \$0.0              | \$0.3             |
| Accrued retiree healthcare expense | 1.2                | 1.1                  | 1.1                | 1.2               |
| Non-cash adjustment                | \$1.0              | \$1.1                | \$1.1              | \$1.0             |
| <b>Total NRR impact</b>            | <b>\$2.5</b>       | <b>\$3.0</b>         | <b>\$2.6</b>       | <b>\$2.8</b>      |

Performance compensation is budgeted at the target level of 15 percent of base salary and is paid in March of the following year. Funding for 401(k) matching contribution is estimated at 4.7 percent of the salary expense (including performance compensation) based on recent company trends.

Insurance benefits are budgeted based on projected per participant costs, with medical benefits as the primary component.

**Medical Benefits Costs**

**The net cost of the self-funded medical plan in the 2018 budget is \$4.9 million, which is in line with the 2017 budget and represents a 2.7 percent increase from the 2017 forecast.**

| <b>Healthcare Costs (\$ millions)</b> |                    |                      |                    |                   |
|---------------------------------------|--------------------|----------------------|--------------------|-------------------|
|                                       | <b>2017 Budget</b> | <b>2017 Forecast</b> | <b>2018 Budget</b> | <b>2018 Prior</b> |
| Gross Claims                          | \$5.4              | \$5.2                | \$5.3              | \$5.4             |
| Admin Fees                            | 1.0                | 1.0                  | 1.0                | 1.0               |
| Employee Contributions                | (1.4)              | (1.4)                | (1.4)              | (1.4)             |
| Net Expenses                          | \$5.0              | \$4.7                | \$4.9              | \$4.9             |
| Number of employee participants       | 539                | 556                  | 549                | 556               |

SPP experienced an increase in medical claims beginning in 2015 and continuing throughout 2016. The increase has since leveled off during 2017. Total gross claims are estimated to be \$5.3 million in 2018, which is consistent with the 2017 forecast.

Approximately 93 percent of employees participate in the medical plan, which is comparable with previous years. The total estimated number of employee participants in 2018 is 549, compared to 556 in 2017. SPP retirees were removed from SPP’s self-funded plan in 2015. SPP now provides eligible retirees fixed monthly payments through a tax-free health reimbursement account to pay for individual Medicare supplement health-insurance plans or other eligible healthcare expenses. This change decreased SPP’s medical funding exposure for those retiree participants.

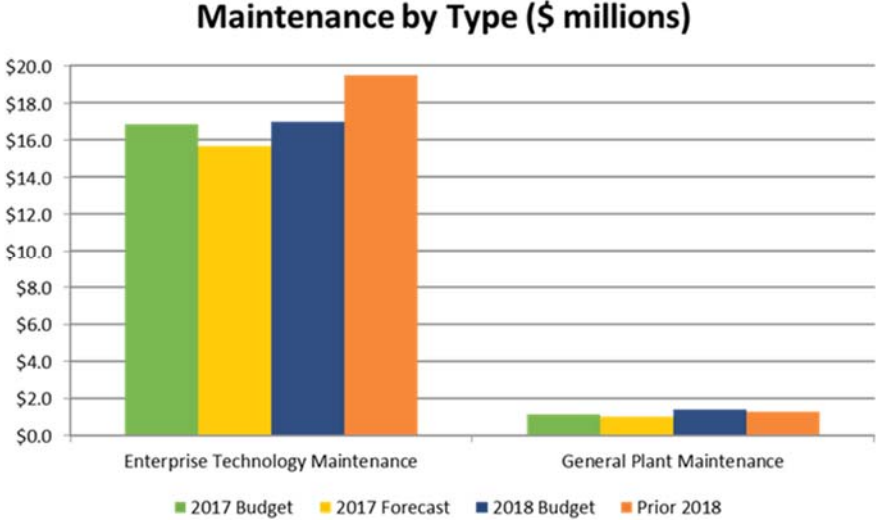
Fees are paid to the insurance provider to cover administrative costs and insure against excessive losses at both the participant and corporate level. These fees are estimated to be \$1.0 million in 2018, which is also consistent with 2017. Staff plans to implement certain changes to the plan in 2018 to limit the increase in claims and administrative costs, as well as provide cost savings to employees with differing medical insurance needs and priorities.

Employee contributions to the medical plan offset the overall cost and are estimated to be \$1.4 million in 2018. The net annual cost of the medical plan to SPP per participant is expected to be approximately \$8.9 thousand in 2018. SPP’s Human Resource Committee continues to target an 80/20 cost share between employer and employee for the medical benefit costs.

## **MAINTENANCE**

*The increase in the maintenance budget is primarily driven by capital expenditures for incremental hardware and software, which contributes to the continued expansion of SPP infrastructure and results in increases in maintenance costs to sustain the health and operation of the system.*

Although housed in the IT division, the enterprise technology maintenance budget includes expenses to maintain SPP’s enterprise hardware and applications. Another component of maintenance expense is for corporate facilities (general plant maintenance).



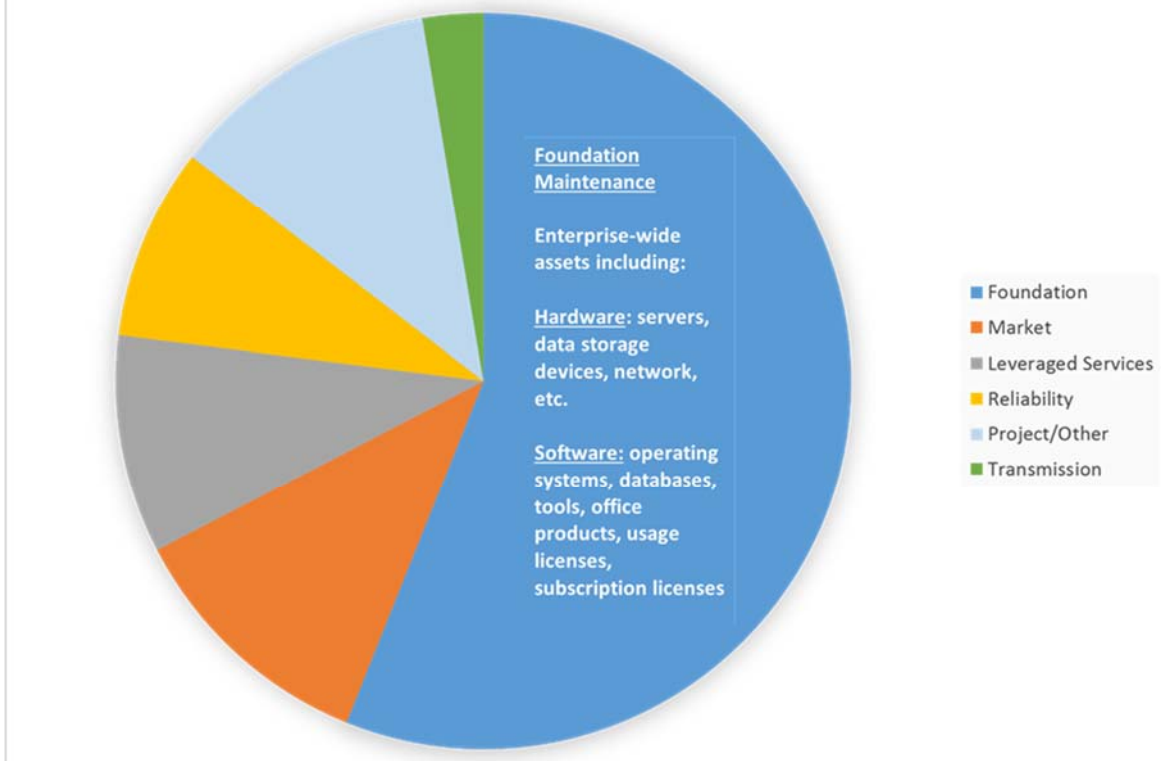
| Maintenance Expense (\$ millions) | 2017 Budget   | 2017 Forecast | 2018 Budget   | Prior 2018    |
|-----------------------------------|---------------|---------------|---------------|---------------|
| Enterprise Technology Maintenance | \$16.8        | \$15.7        | \$17.0        | \$19.5        |
| General Plant Maintenance         | 1.1           | 1.0           | 1.4           | 1.3           |
| <b>Total</b>                      | <b>\$18.0</b> | <b>\$16.7</b> | <b>\$18.4</b> | <b>\$20.8</b> |

### Enterprise Technology Maintenance

*Enterprise technology maintenance expense covers hardware and software assets in the existing portfolio as well as incremental purchases or new systems developed across the organization.*

Enterprise technology maintenance agreements encompass necessary coverage such as defect restorations, security patches, product updates and version upgrades of software products. SPP retains maintenance agreements on the majority of installed hardware and software currently in use. The level of maintenance is selected based on several factors including the criticality of the application and the environment (testing, development or production).

## 2018 Enterprise Technology Maintenance Budget



Three primary components of enterprise technology maintenance include hardware maintenance, perpetual software maintenance and software subscriptions.

Components within each maintenance category include:

- Maintenance/support agreements for hardware (servers, storage, network, etc.)
- Maintenance/support agreements for software (operating systems, databases, tools, office products, usage licenses, subscription licenses)
- Maintenance/support agreements for business applications (market, reliability, transmission, leveraged services, etc.)

Enterprise technology maintenance budget includes expenses to maintain SPP's enterprise hardware and applications across the company, not only specific to the IT division.

Approximately 80 percent of the maintenance budget is under a multi-year contract in support of the existing environment, with expenses being amortized over the life of the agreement and carried forward each year. In addition to maintaining the existing environment, the budget is also driven by new capital projects requiring annual support agreements to maintain the health and operation of the system.



Approximately 80 percent of the maintenance budget is under a multi-year contract in support of the existing environment.

***The IT sourcing staff remains focused on scrutinizing maintenance costs and trends. The staff makes every effort to minimize maintenance costs through negotiating multi-year term and price-protection agreements, alignment and leveraging of product purchases, and rightsizing the level of support with the criticality of the environment.***

Over the past few years, the foundation maintenance budget was estimated to correspond with original business plans under the expectation that new capital expenditures (which drive incremental maintenance) would occur early in the project cycle. Based on research and analysis, many budgeted capital expenditures become deferred (or avoided altogether), resulting in a corresponding delay or elimination of maintenance expenses. In consideration of this recurring trend, a more aggressive approach was utilized in 2018, which results in a maintenance budget of \$17.0 million. This is relatively flat as compared to the 2017 budget and significantly lower than previous estimates for 2018.

## **General Plant Maintenance**

In addition to maintenance for hardware and software, a variety of other facility expenses are included in the general plant maintenance budget such as janitorial expense, landscape services and preventive maintenance.

SPP utilizes historical data to estimate costs associated with general upkeep such as waste removal, landscape maintenance, janitorial services, etc. These costs remain fairly constant with only minimal increases projected. Costs associated with facilities systems and equipment maintenance are generally defined within multi-year service agreements (e.g. elevators, chillers, generators, etc.).

Additional maintenance costs are required for general repairs and upkeep of the SPP facilities.

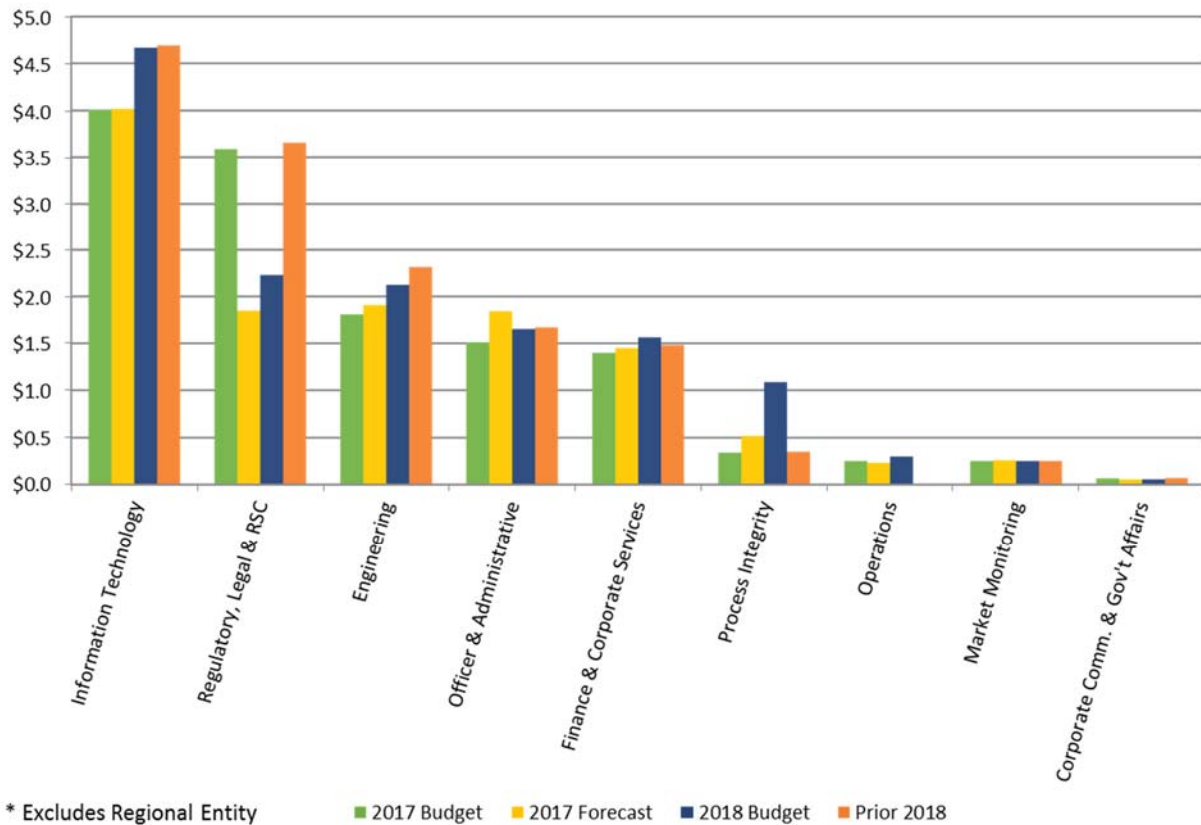


## OUTSIDE SERVICES AND CONSULTING

*Outside services and consulting expenses have increased from the 2017 forecast but still remain lower than previous estimates for 2018.*

Outside services consist of third-party expertise to assist SPP in deploying various services, from providing legal representation and advice to satisfying audit requirements.

**Outside Services and Consulting by Division (\$ millions) \***



## Outside Services and Consulting by Division (\$ millions)

|                                 | <u>2017 Budget</u> | <u>2017 Forecast</u> | <u>2018 Budget</u> | <u>Prior 2018</u> |
|---------------------------------|--------------------|----------------------|--------------------|-------------------|
| Information Technology          | \$4.0              | \$4.0                | \$4.7              | \$4.7             |
| Regulatory, Legal & RSC         | 3.6                | 1.9                  | 2.2                | 3.7               |
| Engineering                     | 1.8                | 1.9                  | 2.1                | 2.3               |
| Officer & Administrative        | 1.5                | 1.8                  | 1.7                | 1.7               |
| Finance & Corporate Services    | 1.4                | 1.4                  | 1.6                | 1.5               |
| Process Integrity               | 0.3                | 0.5                  | 1.1                | 0.4               |
| Operations                      | 0.3                | 0.2                  | 0.3                | 0.0               |
| Market Monitoring               | 0.2                | 0.3                  | 0.2                | 0.2               |
| Corporate Comm. & Gov't Affairs | 0.1                | 0.1                  | 0.1                | 0.1               |
| <b>RTO Total</b>                | <b>\$13.2</b>      | <b>\$12.1</b>        | <b>\$13.9</b>      | <b>\$14.5</b>     |
| Regional Entity                 | 1.2                | 1.0                  | 0.7                | 1.3               |
| <b>SPP Consolidated Summary</b> | <b>\$14.5</b>      | <b>\$13.2</b>        | <b>\$14.6</b>      | <b>\$15.8</b>     |

Consulting services for the Regional Entity is related to trustee compensation, audits and legal services. The dissolution of the Regional Entity is expected to be complete by July 2018, therefore the 2018 budget only reflects consulting costs for half of the year.

## Information Technology

*The largest component of the 2018 outside services budget resides in the information technology (IT) department.*

| <b>Outside Services and Consulting by Division (\$ millions)</b> | <u>2017 Budget</u> | <u>2017 Forecast</u> | <u>2018 Budget</u> | <u>Prior 2018</u> |
|--|--------------------|----------------------|--------------------|-------------------|
| Information Technology   | \$4.0              | \$4.0                | \$4.7              | \$4.7             |

The IT department utilizes outside services for a variety of functions including:

- Hosted services (i.e., “Software-as-a-service”) for WebOasis, Webtrans and related transmission reservation services
- Third-party data center services for remote data storage
- Consulting for key projects and initiatives (security assessments, etc.)
- Vendor support for key application systems (e.g., settlements)
- Staff augmentation for interim resource and/or skill requirements
- Interchange distribution calculator (IDC) association fees



FERC Order 1000. The prior budgets also included revenue to be recovered from the participants in the competitive bidding process, which offsets the expense in outside services and consulting. It is impossible to predict how many (or if any) projects will be approved in a given year. Given no projects qualified for the bidding process in 2017 and the offsetting revenue has no impact to the NRR, no consulting expense or revenue was included in the 2018 budget.



A notable decrease in regulatory consulting services is related to FERC Order 1000 costs excluded from the 2018 budget (with no net impact to NRR).

Outside legal counsel is employed for various litigation matters throughout the year in the legal department. These services provide unique legal expertise on specific FERC matters and allows SPP to leverage the counsel’s relationships with FERC staff, while also utilizing their knowledge of RTO-specific matters. Consulting expense in the legal department remains reasonably consistent year-over-year, with a slight increase reflected in the 2018 budget for litigation contingency.

| Outside Services and Consulting (\$ millions) | 2017 Budget | 2017 Forecast | 2018 Budget | Prior 2018 |
|---|-------------|---------------|-------------|------------|
| Legal   | \$2.1       | \$1.6         | \$1.9       | \$2.1      |
| Regulatory                                    | 1.2         | 0.0           | 0.0         | 1.3        |
| Regional State Committee                      | 0.3         | 0.2           | 0.3         | 0.3        |
| Regulatory, Legal & RSC                       | \$3.6       | \$1.9         | \$2.2       | \$3.7      |

## Engineering

The engineering division engages consultants for many aspects of the planning and tariff services processes, with the largest components related to staff augmentation for engineering studies and administering the detailed project proposal (DPP) process and transmission project cost estimation related to FERC Order 1000. The continued growth of renewable generation in the SPP footprint has driven a tremendous increase in generator interconnection study requests, and consulting services are engaged to complete these studies when requests are greater than SPP staff capacity. As appropriate, the consulting costs in these studies are passed through to the participants in the process. Revenue offsetting the consulting expense for studies is \$1.4 million, with an additional \$1.6 million expected for engineering staff time dedicated to activities, which are also billable to the study participants.

Consultants are also engaged to assess new approaches and tools to refine performance objectives that align with future planning needs. In addition to such research and development

activities, consulting for tariff services improvements are budgeted in 2018 to increase efficiency and effectiveness of existing processes related to regional planning as well as the impacts to markets regarding transmission service deliverability and congestion hedging mechanisms. Additional resources will be required to finalize action plans with stakeholder and regulatory approvals, as well as implementation of recommendations for efforts to improve the Generator Interconnection process.

A provision in the tariff requires SPP to perform a regional cost allocation review (RCAR) to evaluate the reasonableness of the base plan allocation methodology and associated factors every three years. The last review was performed in 2016. Estimated costs are included in the 2019 budget for the next review to be performed.

| Outside Services and Consulting (\$ millions) | 2017 Budget | 2017 Forecast | 2018 Budget | Prior 2018 |
|---|-------------|---------------|-------------|------------|
| Engineering                                   | \$1.8       | \$1.9         | \$2.1       | \$2.3      |

## Other Outside Services Expenses

The 2018 budget includes outside services and consultants in various other areas including the following:

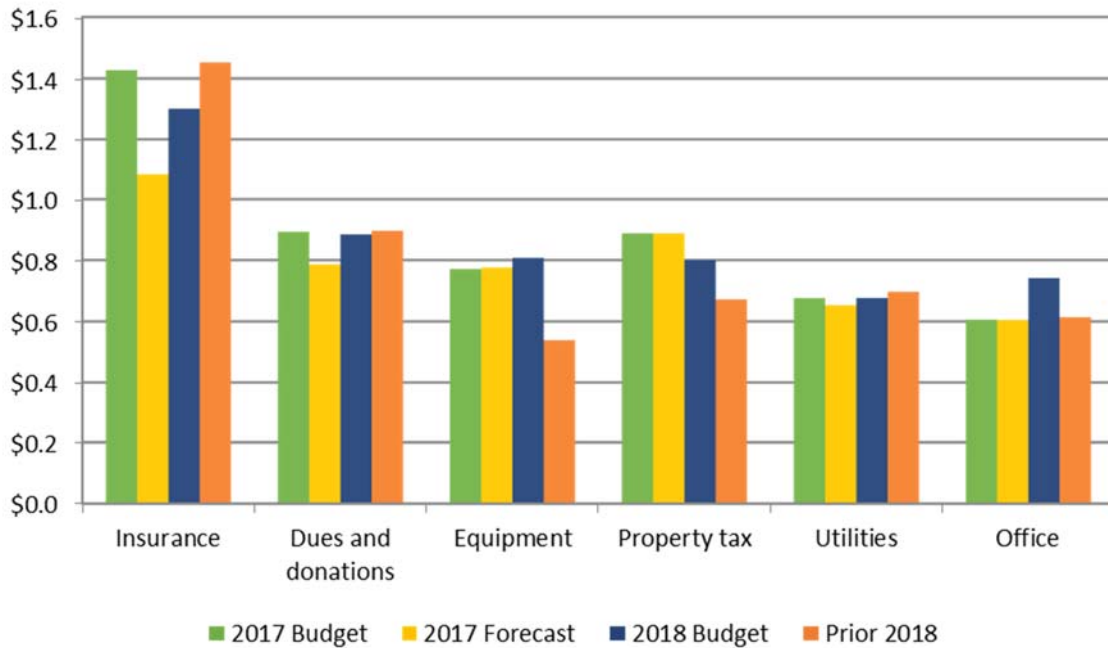
- Officer and Administrative: Board of directors compensation and miscellaneous consulting engagements  
\$1.7 million
- Finance and Corporate Services: Security and employee services and financial audits  
\$1.6 million
- Process Integrity: Compliance and project management staff augmentation (CIP V5 mock audit, compliance program review, GRC tool support) and SOC 1 audit services  
\$1.1 million
- Other Departments: Remaining outside services expense is spread across numerous departments including operations (wind studies), market monitoring (legal counsel and special studies), and communications and government affairs (reporting and data services)  
\$0.6 million

## ADMINISTRATIVE EXPENSES

*Overall administrative expenses are expected to remain relatively consistent with the 2017 budget and forecast.*

Administrative expenses include items such as insurance premiums, small equipment purchases, property taxes, professional dues and utility and office expenses.

### Administrative (\$ millions)



| Administrative (\$ millions)            | 2017 Budget   | 2017 Forecast | 2018 Budget   | Prior 2018    |
|---|---------------|---------------|---------------|---------------|
| Insurance                               | \$1.4         | \$1.1         | \$1.3         | \$1.5         |
| Dues and donations                      | 0.9           | 0.8           | 0.9           | 0.9           |
| Equipment                               | 0.8           | 0.8           | 0.8           | 0.5           |
| Property tax                            | 0.9           | 0.9           | 0.8           | 0.7           |
| Utilities                               | 0.7           | 0.7           | 0.7           | 0.7           |
| Office                                  | 0.6           | 0.6           | 0.7           | 0.6           |
| <b>Total Administrative</b>             | <b>\$5.3</b>  | <b>\$4.8</b>  | <b>\$5.2</b>  | <b>\$4.9</b>  |
| Other *                                 | 10.8          | 12.2          | 9.2           | 11.4          |
| <b>Total Administrative &amp; Other</b> | <b>\$16.1</b> | <b>\$17.0</b> | <b>\$14.4</b> | <b>\$16.3</b> |

\* Other expense includes interest expense (2017 Forecast also excludes non-cash items)

The largest component of the administrative expense is insurance expense which is discussed in the following section.

## Insurance Expense

SPP's corporate insurance policies allow for the transfer of certain insurable risks from the corporation to third-party insurers. The majority of SPP's policies provide additional indemnification related to commercial excess liability and directors' and officers' liability. Commercial excess liability policies provide additional indemnification from claims arising from SPP's administration of its Open Access Transmission Tariff and other contractual arrangements. Directors' and officers' liability policies provide additional indemnification to SPP's independent directors, management and employees from claims arising from certain actions taken in oversight of the corporation. Both policies include the insurer's obligation to pay for legal costs for claims made, which can be very extensive.

The only notable change is related to pension benefit insurance. The estimate for the 2018 premium is expected to be higher than the actual 2017 premium due to anticipated changes in the life expectancy/mortality tables utilized by the IRS, which would impact the funding measurement component of the premium calculation. The lower expense in the 2017 forecast is the result of continued improvement in the funded level of the plan, which was favorably impacted by significant contributions made in recent years.

| <b>Insurance Expense (\$ millions)</b> | <b>2017 Budget</b> | <b>2017 Forecast</b> | <b>2018 Budget</b> | <b>Prior 2018</b> |
|--|--------------------|----------------------|--------------------|-------------------|
| Commercial excess liability            | \$0.8              | \$0.8                | \$0.8              | \$0.8             |
| Directors & Officers (D&O) liability   | 0.1                | 0.1                  | 0.1                | 0.1               |
| General liability and pension          | 0.5                | 0.1                  | 0.4                | 0.5               |
| Workers compensation                   | 0.1                | 0.1                  | 0.1                | 0.1               |
| <b>Total</b>                           | <b>\$1.4</b>       | <b>\$1.1</b>         | <b>\$1.3</b>       | <b>\$1.5</b>      |

## Dues and Donations

Dues are budgeted for professional or technical licenses and memberships in professional organizations related to employment by SPP, are required to maintain professional standing for employees or are otherwise beneficial to SPP.

A substantial portion of the dues budget is for Electric Power Research Institute (EPRI) membership (\$0.4 million), which allows access to research conducted on issues related to the electric power industry. SPP's engagement with EPRI enables the participation in existing programs in grid operations, planning and renewable integration and high voltage direct current (HVDC) ties applications. This agreement includes support for new markets initiatives,

new tools to enable additional and more efficient NERC transmission planning compliance activities and operational needs such as tools for system restoration. Engagement by SPP staff at EPRI provides value in terms of development of new tools and analytics such as case studies using SPP data to address ramping needs for wind integration studies.

## Other Administrative Expenses

Equipment, property taxes, utilities and general office expenses make up the remainder of the administrative expenses and remain reasonably constant. Small equipment purchases reflect items less than \$5,000 in value (expensed rather than capitalized) and include such items as personal computers and related equipment, server cabinets and equipment, member routers and LAN access points, and fixtures and furniture.

## COMMUNICATIONS INFRASTRUCTURE

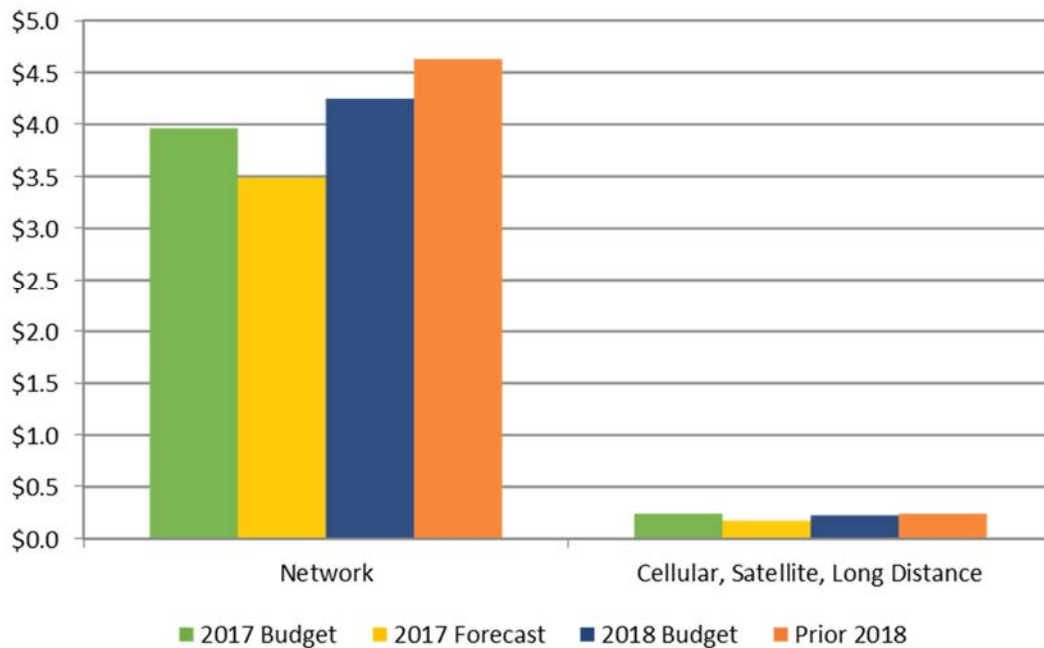
Communications infrastructure includes all expenditures related to SPP's internal and external networks and telecommunications. Network communications include frame relay and circuit costs, including components for bandwidth between data centers, as well as circuits to members, market participants, etc. The majority of expenses within this budget are ongoing and are under long-term contracts, making the composition of the overall spend fairly consistent each year. The increase in 2018 is attributed to a number of factors.

- Circuit costs to share phasor measuring unit (PMU) data over secure network: Phase 1 of the PMU project was implemented during 2017 with the long-term objective of capturing and sharing more granular voltage data with members and other RTOs. A limited amount of PMU data is currently shared across the internet. Additional and more secure bandwidth will be required as the volume of data and number of participants increase.
- Security features on mobile phone devices: SPP employees retain company information on both personal and corporate mobile phones without any security requirements or ability for SPP to manage mobile content. Mobile security management services will secure corporate information and email on cellular phones, as well as allow SPP to manage mobile content.
- Additional bandwidth for cloud storage data backup: SPP's data requirements continue to increase, including the need to store/archive data. IT is exploring the use of cloud technologies for offsite data storage, which, if deemed valuable and secure, will require appropriate internet bandwidth between SPP and the storage provider.



- Additional circuits between Chenal and Maumelle data centers to separate traffic related to the electronic security perimeter (ESP) and general corporate: This requirement is driven by CIP standards of that SPP is required to comply.

## Communications Infrastructure (\$ millions)

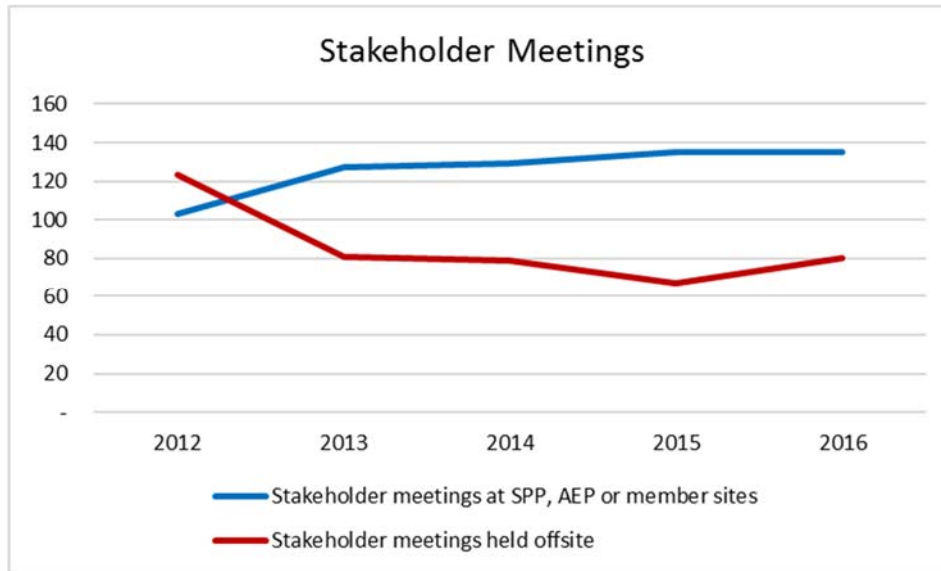


| Communications (\$ millions)       | 2017 Budget  | 2017 Forecast | 2018 Budget  | Prior 2018   |
|------------------------------------|--------------|---------------|--------------|--------------|
| Network                            | \$4.0        | \$3.5         | \$4.2        | \$4.6        |
| Cellular, Satellite, Long Distance | 0.2          | 0.2           | 0.2          | 0.2          |
| <b>Total</b>                       | <b>\$4.2</b> | <b>\$3.7</b>  | <b>\$4.5</b> | <b>\$4.9</b> |

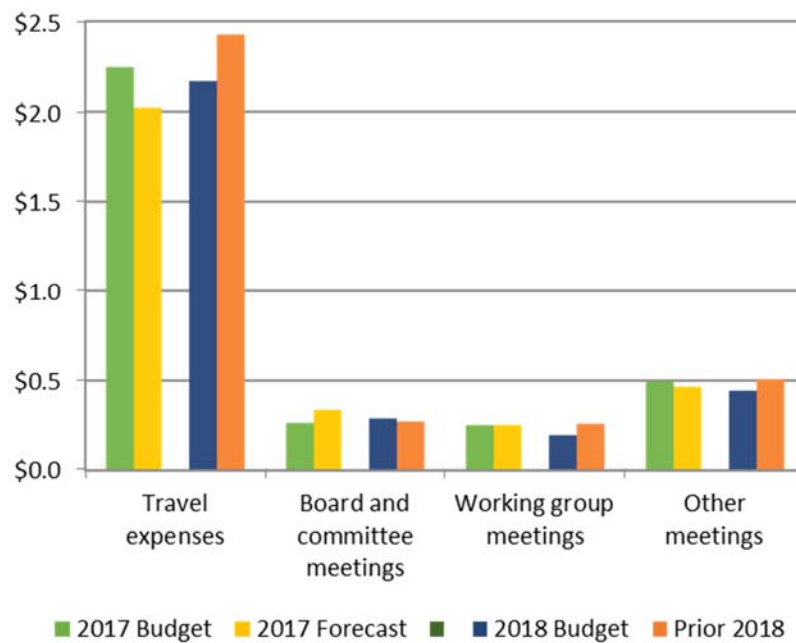
## TRAVEL AND MEETINGS

*Travel and meetings expenses in 2018 remain relatively consistent as compared to the 2017 forecast and budget.*

In an effort to maintain lower travel and meeting expenses, SPP encourages the use of corporate facilities or member facilities when planning for external meetings. Additionally, SPP encourages organizational groups to include Little Rock in the rotation for working group meetings. There has been a notable decrease in the number of stakeholder meetings held offsite as compared to the number held at SPP or other member sites.



### Travel & Meetings (\$ millions)



| Travel & Meetings (\$ millions) | 2017 Budget  | 2017 Forecast | 2018 Budget  | Prior 2018   |
|---------------------------------|--------------|---------------|--------------|--------------|
| Travel expenses                 | \$2.2        | \$2.0         | \$2.2        | \$2.4        |
| Board and committee meetings    | 0.3          | 0.3           | 0.3          | 0.3          |
| Working group meetings          | 0.3          | 0.3           | 0.2          | 0.3          |
| Other meetings                  | 0.5          | 0.5           | 0.4          | 0.5          |
| <b>Total</b>                    | <b>\$3.3</b> | <b>\$3.1</b>  | <b>\$3.1</b> | <b>\$3.5</b> |

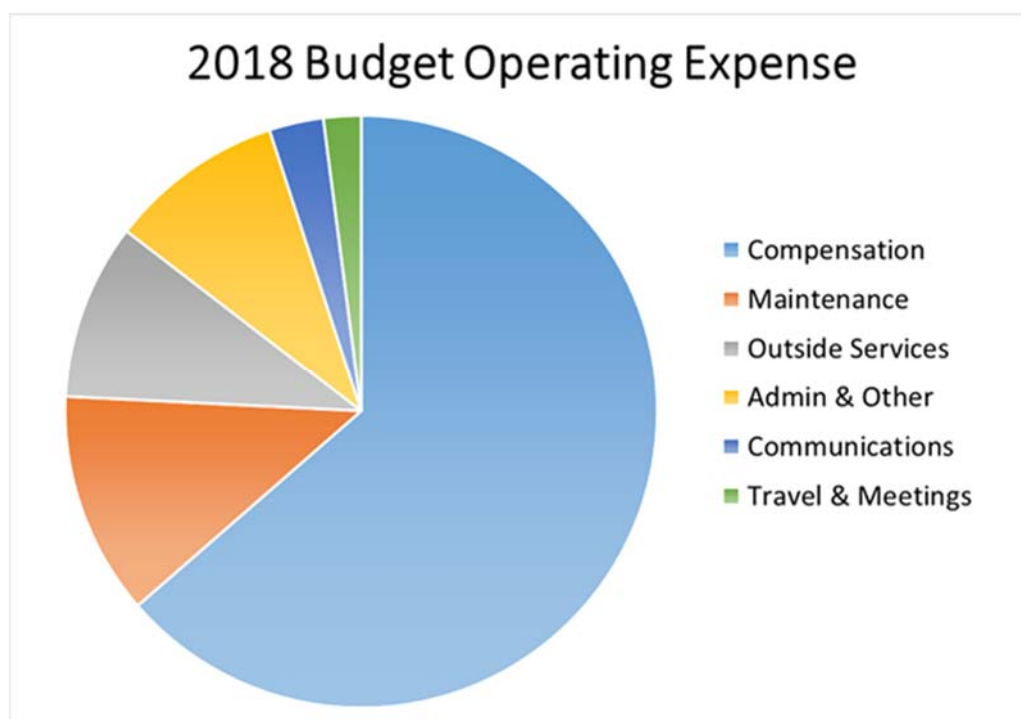
## VII. OPERATING EXPENSE BY DIVISION

Total operating expenses for each division is illustrated below.

### Operating Expense by Division (\$ millions)

|   | <u>2017 Forecast</u> |              | <u>2018 Budget</u> |              | <u>Variance Fav/(Unfav)</u> |              |            |
|---|----------------------|--------------|--------------------|--------------|-----------------------------|--------------|------------|
|   | <u>Expense</u>       | <u>Staff</u> | <u>Expense</u>     | <u>Staff</u> | <u>Expense</u>              | <u>Staff</u> | <u>%</u>   |
| <b>Operating Expense (\$ millions)</b>  |                      |              |                    |              |                             |              |            |
| Information Technology                  | \$44.3               | 161          | \$48.4             | 164          | (\$4.1)                     | (3)          | -9%        |
| Officer & Administrative                | 29.9                 | 11           | 27.6               | 11           | 2.3                         | -            | 8%         |
| Operations                              | 21.9                 | 162          | 23.1               | 162          | (1.2)                       | -            | -6%        |
| Engineering                             | 12.6                 | 80           | 13.7               | 80           | (1.0)                       | -            | -8%        |
| Finance & Corporate Services            | 12.1                 | 68           | 13.3               | 68           | (1.1)                       | -            | -9%        |
| Process Integrity                       | 7.9                  | 53           | 9.4                | 54           | (1.5)                       | (1)          | -19%       |
| Regulatory, Legal & RSC                 | 7.6                  | 27           | 6.8                | 27           | 0.8                         | -            | 11%        |
| Market Monitoring (MMU)                 | 2.8                  | 16           | 3.0                | 16           | (0.3)                       | -            | -10%       |
| Interregional Relations & Market Design | 1.2                  | 9            | 1.3                | 9            | (0.1)                       | -            | -6%        |
| Corp Communications & Gov't Affairs     | 0.8                  | 6            | 0.9                | 7            | (0.1)                       | (1)          | -14%       |
| <b>RTO Total *</b>                      | <b>\$141.2</b>       | <b>593</b>   | <b>\$147.6</b>     | <b>598</b>   | <b>(\$6.4)</b>              | <b>(5)</b>   | <b>-5%</b> |
| Regional Entity                         | 5.4                  | 23           | 3.4                | 11           | 2.0                         | 12           | 36%        |
| <b>SPP Total</b>                        | <b>\$146.5</b>       | <b>616</b>   | <b>\$151.0</b>     | <b>609</b>   | <b>(\$4.5)</b>              | <b>7</b>     | <b>-3%</b> |

\* Excludes depreciation & FERC fees. Total expense for 2017 also excludes \$1.6 non-cash items such as swap valuation adjustments and realized/unrealized gains on investments.



## Overall Variances in Compensation

The largest expense included in each division is compensation, which also comprises approximately 70 percent of the variance in the 2018 budget compared to the 2017 forecast (\$3.0 million of the \$4.5 million increase). This increase is primarily attributed to an annual merit increase of 3 percent in the 2018 budget.

After the vacancy rate is determined for the budget, an adjustment for vacancies is included as an expense reduction in the administrative department. Although vacancies are not budgeted at the department level, vacancies are represented at the department level in the 2017 forecast through August 2017. Since the budgeted vacancy is reflected in the administrative department, a decrease is noted in the 2018 budget in the officer and administrative division as compared to the 2017 forecast.

The Regional Entity shows a favorable variance in compensation due to the reduction of staff in July 2018.

| <b>Compensation by Division (\$ millions)</b> |                          |                        |                                 |
|---|--------------------------|------------------------|---------------------------------|
|   | <b>2017<br/>Forecast</b> | <b>2018<br/>Budget</b> | <b>Fav/(Unfav)<br/>Variance</b> |
| <b>Compensation (\$ millions)</b>             |                          |                        |                                 |
| Information Technology                        | \$20.1                   | \$21.7                 | (\$1.6)                         |
| Officer & Administrative                      | 14.6                     | 13.7                   | 0.9                             |
| Operations                                    | 21.4                     | 22.5                   | (1.1)                           |
| Engineering                                   | 9.9                      | 10.6                   | (0.7)                           |
| Finance & Corporate Services                  | 8.1                      | 8.6                    | (0.5)                           |
| Process Integrity                             | 7.1                      | 7.9                    | (0.8)                           |
| Regulatory & Legal                            | 3.8                      | 4.2                    | (0.3)                           |
| Market Monitoring (MMU)                       | 2.3                      | 2.5                    | (0.2)                           |
| Interregional Relations & Market Design       | 1.1                      | 1.2                    | (0.1)                           |
| Corp Communications & Gov't Affairs           | 0.6                      | 0.7                    | (0.1)                           |
| <b>RTO Total</b>                              | <b>\$89.1</b>            | <b>\$93.6</b>          | <b>(\$4.5)</b>                  |
| Regional Entity                               | 3.9                      | 2.5                    | 1.4                             |
| <b>SPP Total</b>                              | <b>\$93.0</b>            | <b>\$96.1</b>          | <b>(\$3.0)</b>                  |

## Other Notable Variances (Other Than Compensation)

| <b>2017 Forecast vs 2018 Budget</b>               |                                  |                           |                                 |
|---|----------------------------------|---------------------------|---------------------------------|
|   | <b>Compensation<br/>Variance</b> | <b>Other<br/>Variance</b> | <b>Fav/(Unfav)<br/>Variance</b> |
| <b><u>Variances by Division (\$ millions)</u></b> |                                  |                           |                                 |
| Officer & Administrative                          | \$0.9                            | \$1.4                     | \$2.3                           |
| Regulatory, Legal & RSC                           | (0.3)                            | 1.2                       | 0.8                             |
| Information Technology                            | (1.6)                            | (2.5)                     | (4.1)                           |
| Process Integrity                                 | (0.8)                            | (0.7)                     | (1.5)                           |
| Finance & Corporate Services                      | (0.5)                            | (0.7)                     | (1.1)                           |
| Engineering                                       | (0.7)                            | (0.3)                     | (1.0)                           |
| Operations  | (1.1)                            | (0.1)                     | (1.2)                           |
| Market Monitoring (MMU)                           | (0.2)                            | (0.1)                     | (0.3)                           |
| Corp Communications & Gov't Affairs               | (0.1)                            | (0.0)                     | (0.1)                           |
| Interregional Relations & Market Design           | (0.1)                            | (0.0)                     | (0.1)                           |
| <b>RTO Total</b>                                  | <b>(\$4.5)</b>                   | <b>(\$1.9)</b>            | <b>(\$6.4)</b>                  |
| Regional Entity                                   | 1.4                              | 0.5                       | 2.0                             |
| <b>SPP Total</b>                                  | <b>(\$3.0)</b>                   | <b>(\$1.4)</b>            | <b>(\$4.5)</b>                  |
| <i>RTO Variance Percentage</i>                    | <i>70%</i>                       | <i>30%</i>                | <i>100%</i>                     |

- Officer and administrative: Interest expense is lower beginning in 2018 as a result of decreased interest payments due to lower outstanding balances on debt, which contributes to the favorable variance in addition to the variance in associated with compensation.  
\$1.4 million
- Regulatory, legal and Regional State Committee: The remaining favorable variance is the result of litigation during 2017 that resulted in \$1.6 million in fees paid. This is partially offset by additional consulting costs for contingency included in the 2018 budget.  
\$1.2 million
- Information technology: The remaining unfavorable variance is driven by: 1) increased *maintenance* costs associated with capital expenditures for incremental hardware and software, 2) increased *communications* expense associated with circuits for securing network shared data (PMU), additional security/encryption for mobile devices, and increased internet costs to support additional bandwidth for cloud storage data backup, and 3) increased *outside services* expense for staff augmentation to support various new

initiatives, mostly associated the with cybersecurity program.  
\$2.5 million

- Process integrity: Staff augmentation in the project management office (PMO) and compliance departments is the primary driver of the remaining unfavorable variance to budget. The PMO identified the need for short-term assistance in managing the workload for the upcoming 2018 projects. Staff augmentation identified in the compliance budget is related to: 1) CIP V5 mock audit, 2) continued support of the GRC tool, and 3) consulting for an overall compliance program review.  
\$0.7 million
- Finance and corporate services: The remaining unfavorable variance is related to the increase in the pension benefit insurance premium and increased maintenance costs associated with the upkeep of the campus facilities.  
\$0.7 million

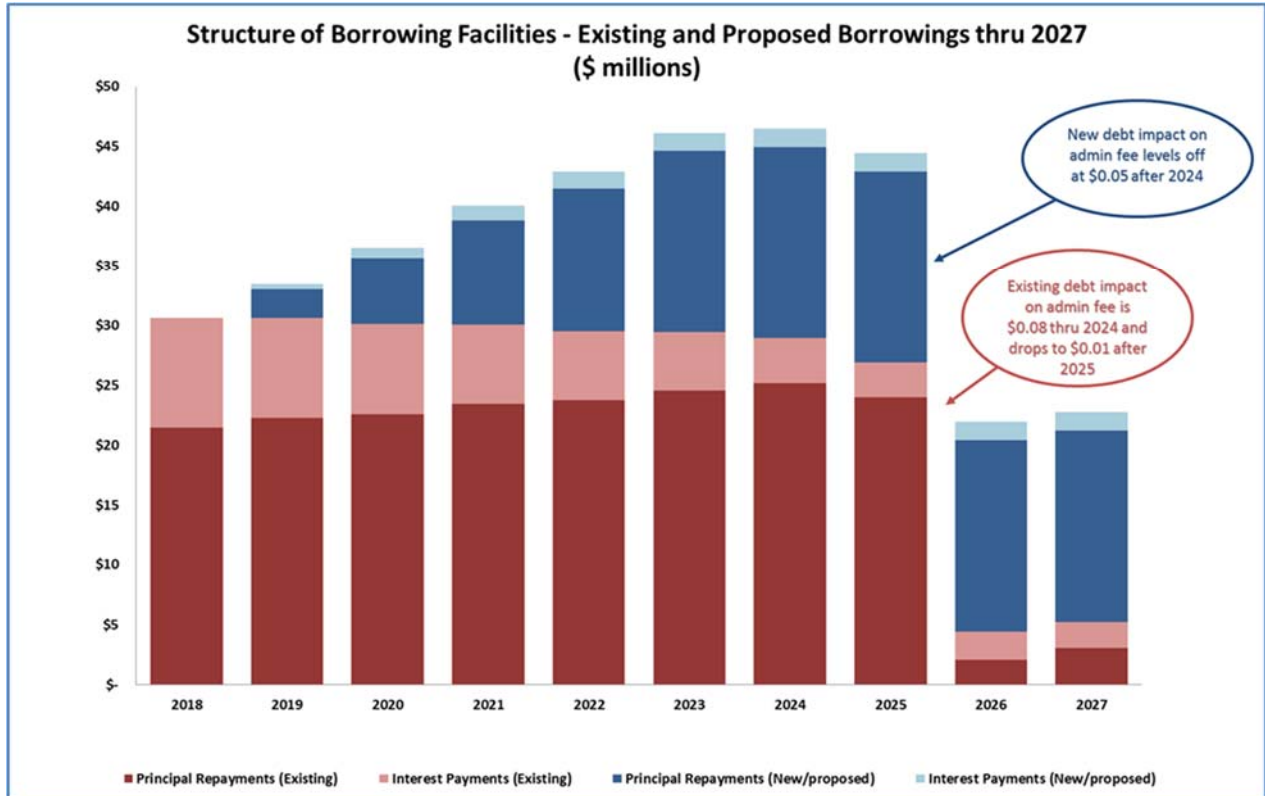
Other variances are individually immaterial.

## VIII. DEBT SERVICE

*SPP's capital spending is financed through borrowings that SPP has historically successfully secured from financial institutions and investors at competitive terms.*

SPP's capital projects are funded from monies borrowed under medium and long-term credit agreements, primarily with institutional investors. SPP generally aims to match the duration of these borrowings to the useful life of assets acquired through borrowings. The entire capital project costs are not included in the NRR calculation; however, annual principal and interest payments for borrowings (net of capitalized interest) are considered in the calculation. SPP's outstanding borrowings are projected to equal \$239.9 million as of Jan. 1, 2018, with principal payments of \$23.4 million, \$26.6 million and \$28.1 million in 2018, 2019 and 2020, respectively.

SPP anticipates utilizing cash on hand from prior debt issuances of approximately \$10.0 million, as well as short-term credit resources to fund capital expenditures during 2018. SPP plans to fund anticipated capital spending in 2019 and 2020 by issuing five-year term debt of approximately \$16.0 million each year. The following chart illustrates SPP's principal and interest payment obligations including projected new borrowings through 2027.



The schedule below shows the principal amounts outstanding for each borrowing at the beginning and end of the 2018-2020 budget periods, as well as annual principal payments.

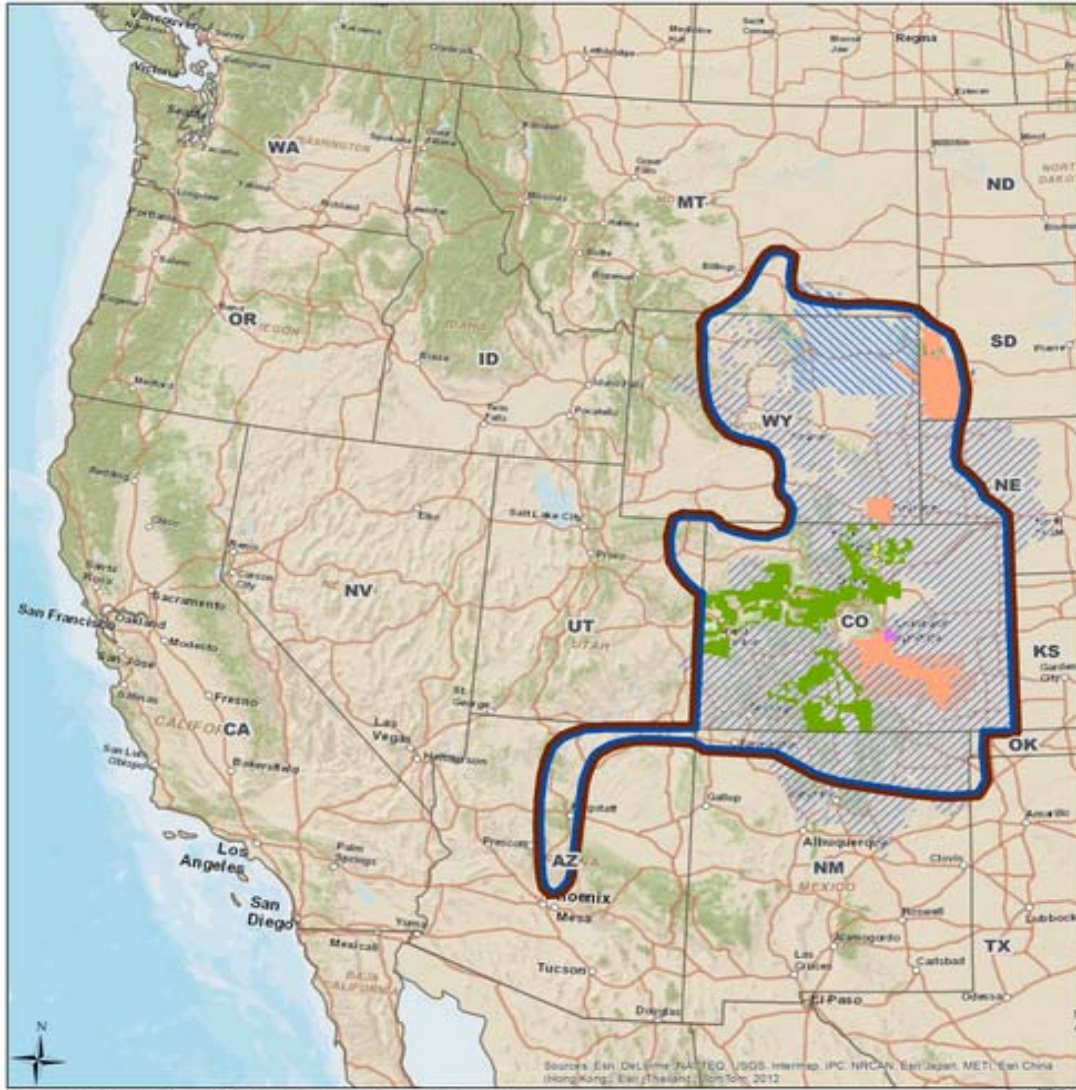
| <b>Future Debt Repayments (\$ millions)</b>      |                    |                     |                 |                         |                         |                         |                         |                           |
|--|--------------------|---------------------|-----------------|-------------------------|-------------------------|-------------------------|-------------------------|---------------------------|
|  | <b>Issue Date</b>  | <b>Issue Amount</b> | <b>Due Date</b> | <b>Balance 1/1/2018</b> | <b>2018 Prin. Pmts.</b> | <b>2019 Prin. Pmts.</b> | <b>2020 Prin. Pmts.</b> | <b>Balance 12/31/2020</b> |
| 5.51% notes due 2027                             | 3/23/2007          | \$5.1               | Feb-2027        | \$2.9                   | (\$0.2)                 | (\$0.2)                 | (\$0.2)                 | \$2.3                     |
| 4.82% construction notes due 2042 (2010A, 2010B) | 10/31 & 12/28/2010 | \$65.0              | Dec-2042        | \$59.5                  | (\$1.3)                 | (\$1.3)                 | (\$1.3)                 | \$55.6                    |
| 3.55% integrated markets notes due 2024 (2010C)  | 3/30/2011          | \$70.0              | Mar-2024        | \$43.8                  | (\$7.0)                 | (\$7.0)                 | (\$7.0)                 | \$22.8                    |
| 3.00% capital funding notes due 2024 (2012D-1)   | 5/30/2012          | \$50.0              | Mar-2024        | \$31.3                  | (\$5.0)                 | (\$5.0)                 | (\$5.0)                 | \$16.3                    |
| 3.25% capital funding notes due 2024 (2012D-2)   | 11/30/2012         | \$50.0              | Sep-2024        | \$33.8                  | (\$5.0)                 | (\$5.0)                 | (\$5.0)                 | \$18.8                    |
| 3.8% capital funding notes due 2025 (2014-E)     | 3/21/2014          | \$37.0              | Dec-2025        | \$37.0                  | \$0.0                   | \$0.0                   | \$0.0                   | \$37.0                    |
| 4.95% senior notes due 2024                      | 3/10/2014          | \$33.0              | Mar-2024        | \$27.8                  | (\$3.0)                 | (\$3.8)                 | (\$4.0)                 | \$17.0                    |
| Capital lease obligation                         | 2/1/2015           | \$6.9               | Nov-2019        | \$4.0                   | (\$1.9)                 | (\$2.1)                 | \$0.0                   | \$0.0                     |
| New borrowing - 2019                             | 3/31/2019          | \$16.0              | Mar-2024        | -                       | -                       | (\$2.3)                 | (\$3.3)                 | \$10.4                    |
| New borrowing - 2020                             | 3/31/2020          | \$16.0              | Mar-2025        | -                       | -                       | -                       | (\$2.4)                 | \$13.6                    |
| <b>Total</b>                                     |                    | <b>\$349.0</b>      |                 | <b>\$239.9</b>          | <b>(\$23.4)</b>         | <b>(\$26.6)</b>         | <b>(\$28.2)</b>         | <b>\$193.7</b>            |



# IX. MEMBERSHIP EXPANSION

## MOUNTAIN WEST TRANSMISSION GROUP (MOUNTAIN WEST)

The Mountain West Transmission Group is an informal collaboration of electricity service providers formed in early 2013 to evaluate an array of options ranging from a common transmission tariff to Regional Transmission Organization (RTO) membership.



**Mountain West Transmission Group**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li> Mountain West Footprint</li> <li><b>PARTICIPANT BY PLANNING AREA</b></li> <li> Platte River Power Authority</li> <li><b>PARTICIPANT BY MEMBERSHIP AREA</b></li> <li> Basin Electric Power Cooperative</li> <li> Tri-State Generation &amp; Transmission</li> </ul> | <ul style="list-style-type: none"> <li><b>PARTICIPANT BY SERVICE AREA</b></li> <li> Black Hills Companies</li> <li> Colorado Springs Utilities</li> <li> Public Service Co of Colorado</li> <li><b>WESTERN AREA POWER ADMINISTRATION</b></li> <li> Loveland Area Projects and Colorado River Storage Project Transmission</li> </ul> |
|--|--|

Source <https://www.wapa.gov/About/keytopics/Pages/Mountain-West-Transmission-Group.aspx>

SPP has cultivated meaningful relationships with certain utilities located in the Western Interconnection, specifically within Mountain West. As a result of these efforts, Mountain West utilities have jointly entered into formal negotiations seeking SPP membership to benefit from the combined services SPP has to offer.

SPP anticipates the negotiations to conclude by the end of 2017 and expects Mountain West utilities to execute membership agreements in 2019. At the time of the membership execution date, the Mountain West transmission facilities will be placed under the SPP tariff and the Mountain West utilities will receive reliability coordination, system planning, market administration and other services provided by SPP as defined in the tariff.



The budget as presented in this document does not include any costs expected for the integration of Mountain West into SPP membership.

Since the timing and costs to implement are dependent on the results of the negotiations, the budget as presented in this document does not include any costs expected for the integration of Mountain West into SPP membership. SPP staff will recommend an addendum to this budget to include incremental operating and capital costs needed for this integration effort at the appropriate time. Such costs will include changes to key reliability and market systems as well as additional staffing resources required to investigate, integrate and operate the additional western transmission facilities.

## X. SUPPLEMENTAL ANALYSIS AND SCHEDULES

### INCOME STATEMENT 2017-2018 COMPARISON (\$ MILLIONS)

|                                | <b>2017<br/>Budget</b> | <b>2017<br/>Forecast</b> | <b>2018<br/>Budget</b> | <b>2018<br/>Prior</b> |
|--------------------------------|------------------------|--------------------------|------------------------|-----------------------|
| <b>Income</b>                  |                        |                          |                        |                       |
| Tariff Administration Service  | \$160.5                | \$162.4                  | \$164.0                | \$168.2               |
| Fees & Assessments             | 28.1                   | 26.7                     | 26.1                   | 28.8                  |
| Contract Services Revenue      | 0.5                    | 0.5                      | 0.2                    | 0.5                   |
| Miscellaneous Income           | 5.0                    | 5.2                      | 4.0                    | 5.1                   |
| <b>Total Income</b>            | <b>\$194.1</b>         | <b>\$194.8</b>           | <b>\$194.2</b>         | <b>\$202.6</b>        |
| <b>Expense</b>                 |                        |                          |                        |                       |
| Salary & Benefits              | \$91.3                 | \$93.0                   | \$96.1                 | \$94.0                |
| Employee Travel                | 2.2                    | 2.0                      | 2.2                    | 2.4                   |
| Administrative                 | 5.3                    | 4.8                      | 5.2                    | 4.9                   |
| Assessments & Fees             | 18.6                   | 21.7                     | 20.3                   | 19.2                  |
| Meetings                       | 1.0                    | 1.1                      | 0.9                    | 1.0                   |
| Communications                 | 4.2                    | 3.7                      | 4.5                    | 4.9                   |
| Maintenance                    | 18.0                   | 16.7                     | 18.4                   | 20.8                  |
| Services                       | 14.2                   | 12.9                     | 14.3                   | 15.5                  |
| Regional State Committee       | 0.3                    | 0.2                      | 0.3                    | 0.3                   |
| Depreciation                   | 30.5                   | 29.1                     | 19.4                   | 23.7                  |
| Other Expense                  | 10.8                   | 10.6                     | 9.3                    | 11.4                  |
| <b>Total Expense</b>           | <b>\$196.4</b>         | <b>\$195.8</b>           | <b>\$190.8</b>         | <b>\$198.1</b>        |
| <b>Net Income (Loss)</b>       | <b>(\$2.3)</b>         | <b>(\$1.0)</b>           | <b>\$3.5</b>           | <b>\$4.5</b>          |
| Debt Repayment                 | \$23.2                 | \$23.2                   | \$23.4                 | \$28.0                |
| MWh Forecast (in millions)     | 383.0                  | 387.5                    | 382.1                  | 383.0                 |
| Net Revenue Requirement        | \$160.5                | \$160.9                  | \$164.0                | \$168.2               |
| Calculated Admin Fee / MWh     | \$0.419                | \$0.415                  | \$0.429                | \$0.439               |
| Recommended Admin Fee / MWh    | \$0.419                | \$0.419                  | \$0.429                | \$0.439               |
| <i>Tariff Cap on Admin Fee</i> | <i>\$0.430</i>         | <i>\$0.430</i>           | <i>\$0.430</i>         | <i>\$0.430</i>        |
| Capital Expense                | \$19.5                 | \$16.0                   | \$17.9                 | \$27.8                |
| Headcount                      | 610                    | 616                      | 609                    | 616                   |

## INCOME STATEMENT 2018-2020 (\$ MILLIONS)

|                                | <b>2018</b>    | <b>2019</b>    | <b>2020</b>    |
|--------------------------------|----------------|----------------|----------------|
|                                | <b>Budget</b>  | <b>Budget</b>  | <b>Budget</b>  |
| <b>Income</b>                  |                |                |                |
| Tariff Administration Service  | \$164.0        | \$178.8        | \$182.4        |
| Fees & Assessments             | 26.1           | 21.4           | 21.4           |
| Contract Services Revenue      | 0.2            | 0.0            | 0.0            |
| Miscellaneous Income           | 4.0            | 4.0            | 4.1            |
| <b>Total Income</b>            | <b>\$194.2</b> | <b>\$204.2</b> | <b>\$207.9</b> |
| <b>Expense</b>                 |                |                |                |
| Salary & Benefits              | \$96.1         | \$101.6        | \$103.9        |
| Employee Travel                | 2.2            | 2.0            | 2.0            |
| Administrative                 | 5.2            | 5.2            | 5.2            |
| Assessments & Fees             | 20.3           | 20.3           | 20.3           |
| Meetings                       | 0.9            | 0.9            | 0.9            |
| Communications                 | 4.5            | 4.6            | 4.6            |
| Maintenance                    | 18.4           | 19.7           | 21.0           |
| Services                       | 14.3           | 13.3           | 12.5           |
| Regional State Committee       | 0.3            | 0.3            | 0.3            |
| Depreciation                   | 19.4           | 22.0           | 22.7           |
| Other Expense                  | 9.3            | 9.0            | 8.6            |
| <b>Total Expense</b>           | <b>\$190.8</b> | <b>\$198.9</b> | <b>\$202.0</b> |
| <b>Net Income (Loss)</b>       | <b>\$3.5</b>   | <b>\$5.3</b>   | <b>\$5.9</b>   |
| Debt Repayment                 | \$23.4         | \$26.6         | \$28.2         |
| MWh Forecast (in millions)     | 382.1          | 382.1          | 382.1          |
| Net Revenue Requirement        | \$164.0        | \$178.8        | \$182.4        |
| Calculated Admin Fee / MWh     | \$0.429        | \$0.468        | \$0.477        |
| Recommended Admin Fee / MWh    | \$0.429        | \$0.468        | \$0.477        |
| <i>Tariff Cap on Admin Fee</i> | <i>\$0.430</i> | <i>\$0.430</i> | <i>\$0.430</i> |
| Capital Expense                | \$17.9         | \$16.6         | \$13.0         |
| Headcount                      | 609            | 610            | 612            |

## BALANCE SHEET (\$ MILLIONS)

|                                       | <u>12/31/2017</u>     | <u>12/31/2018</u>     |
|---------------------------------------|-----------------------|-----------------------|
| <b>ASSETS</b>                         |                       |                       |
| Current Assets                        |                       |                       |
| Cash & Equivalents                    | \$90.5                | \$92.1                |
| Restricted Cash Deposits              | 329.7                 | 362.6                 |
| Accounts Receivable (net)             | 31.2                  | 25.9                  |
| Other Current Assets                  | 10.3                  | 13.3                  |
| Total Current Assets                  | <u>461.7</u>          | <u>493.9</u>          |
| Total Fixed Assets                    | 76.5                  | 75.0                  |
| Total Other Assets                    | 4.9                   | 5.0                   |
| Investments                           | 23.7                  | 24.0                  |
| <b>TOTAL ASSETS</b>                   | <b><u>\$566.7</u></b> | <b><u>\$597.9</u></b> |
| <b>LIABILITIES &amp; EQUITY</b>       |                       |                       |
| Liabilities                           |                       |                       |
| Current Liabilities                   |                       |                       |
| Accounts Payable (net)                | \$34.3                | \$34.3                |
| Customer Deposits                     | 329.7                 | 362.6                 |
| Current Maturities of LT Debt         | 23.4                  | 24.2                  |
| Other Current Liabilities             | 90.2                  | 102.3                 |
| Deferred Revenue                      | 2.3                   | 0.1                   |
| Total Current Liabilities             | <u>479.9</u>          | <u>523.6</u>          |
| Long Term Liabilities                 |                       |                       |
| Long-Term Debt                        | 213.6                 | 191.3                 |
| Capital Lease Obligation              | 2.0                   | 0.0                   |
| Other Long Term Liabilities           | 38.9                  | 47.2                  |
| Total Long Term Liabilities           | <u>254.4</u>          | <u>238.5</u>          |
| Net Income                            | (1.0)                 | 3.5                   |
| Members' Equity                       | (166.7)               | (167.6)               |
| Total Members' Equity                 | <u>(167.6)</u>        | <u>(164.2)</u>        |
| <b>TOTAL LIABILITIES &amp; EQUITY</b> | <b><u>\$566.7</u></b> | <b><u>\$597.9</u></b> |

## CASH FLOW FORECAST 2018-2020 (\$ MILLIONS)

|   | <b>2018</b>   | <b>2019</b>   | <b>2020</b>   |
|---|---------------|---------------|---------------|
|   | <b>Budget</b> | <b>Budget</b> | <b>Budget</b> |
| <b>Operating Activities</b>                             |               |               |               |
| Net Income/(Loss)                                       | \$3.5         | \$5.3         | \$5.9         |
| Items not Requiring Cash                                |               |               |               |
| Depreciation  | 19.4          | 22.0          | 22.7          |
| Changes in Current Assets and Liabilities               | 17.7          | -             | -             |
| <b>Net Cash Provided by Operating Activities</b>        | <b>40.6</b>   | <b>27.3</b>   | <b>28.6</b>   |
| <b>Investing Activities</b>                             |               |               |               |
| Acquisition of Property and Equipment                   | (17.9)        | (16.6)        | (13.0)        |
| <b>Net Cash Used in Investing Activities</b>            | <b>(17.9)</b> | <b>(16.6)</b> | <b>(13.0)</b> |
| <b>Financing Activities</b>                             |               |               |               |
| Repayments of Long-Term Debt                            | (23.4)        | (26.7)        | (28.1)        |
| Issuance of Long-Term Debt                              | -             | 16.0          | 16.0          |
| <b>Net cash Provided/(Used) in Financing Activities</b> | <b>(23.4)</b> | <b>(10.7)</b> | <b>(12.1)</b> |
| Increase/(Decrease) in Cash and Cash Equivalents        | (0.7)         | -             | 3.5           |
| <b>Cash and Cash Equivalents, Beginning of Year *</b>   | <b>17.8</b>   | <b>17.1</b>   | <b>17.1</b>   |
| <b>Cash and Cash Equivalents, End of Year *</b>         | <b>\$17.1</b> | <b>\$17.1</b> | <b>\$20.6</b> |

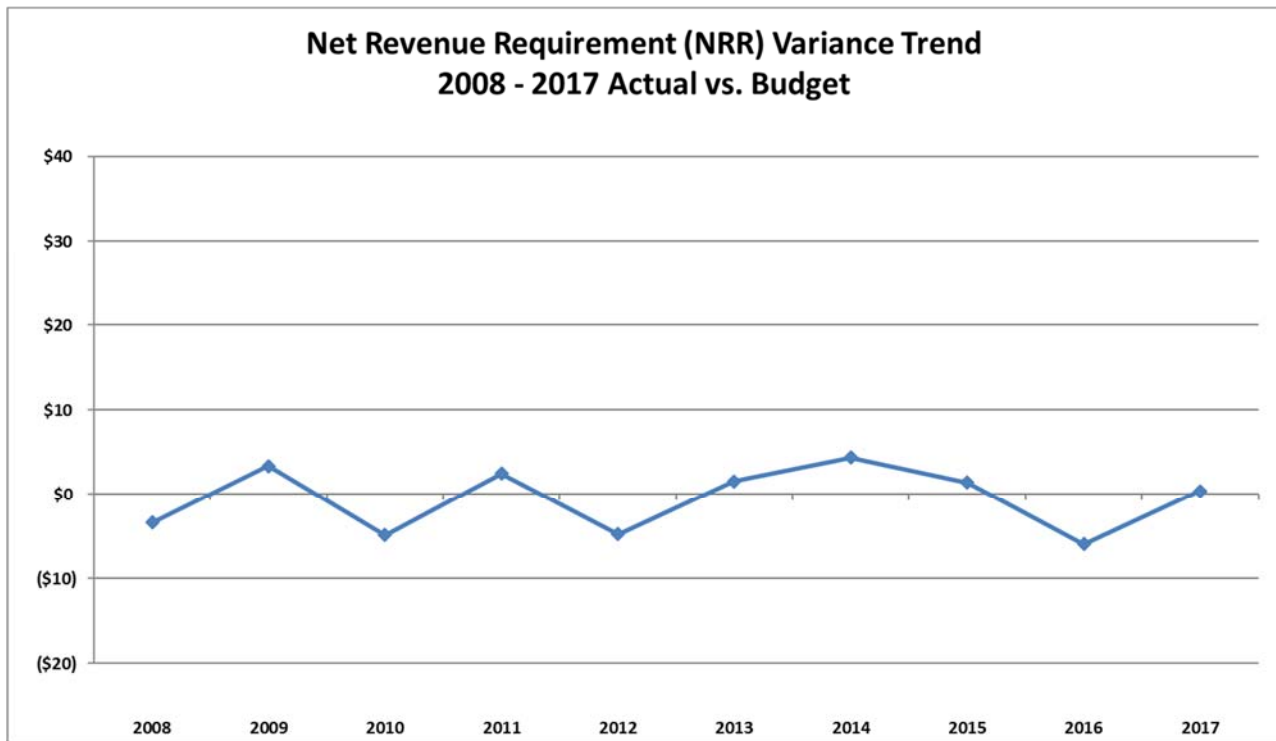
\* Operating and capital spending cash accounts

## CAPITAL PROJECTS LIST (\$ MILLIONS)

|  | Prior<br>Year(s) | 2018<br>Budget | 2019<br>Forecast | 2020<br>Forecast | Total<br>Capital |
|--|------------------|----------------|------------------|------------------|------------------|
| <b>Reliability Assurance</b>                             |                  |                |                  |                  |                  |
| Training and Testing Simulated Environment (TTSE)        | \$ 0.3           | \$ -           | \$ 3.0           | \$ -             | \$ 3.3           |
| Voltage Security Assessment Tool (VSAT)                  | 1.3              | 0.1            | -                | -                | 1.4              |
| Transient Stability Assessment Tool (TSAT)               | -                | 0.6            | 0.8              | -                | 1.4              |
| Identity and Access Management (IAM)                     | 0.2              | 0.3            | -                | -                | 0.5              |
| <b>Total Reliability Assurance</b>                       | <b>\$ 1.8</b>    | <b>\$ 1.0</b>  | <b>\$ 3.8</b>    | <b>\$ -</b>      | <b>\$ 6.6</b>    |
| <b>Enhance and Optimize Interdependent Systems</b>       |                  |                |                  |                  |                  |
| Operations Marketplace and Other System Enhancements *   | \$ -             | \$ 2.4         | \$ 2.3           | \$ 2.3           | \$ 7.0           |
| Data Lake Phase 3  | -                | 0.3            | 0.1              | -                | 0.4              |
| <b>Total Enhance and Optimize Interdependent Systems</b> | <b>\$ -</b>      | <b>\$ 2.7</b>  | <b>\$ 2.4</b>    | <b>\$ 2.3</b>    | <b>\$ 7.4</b>    |
| <b>Enhance Member Value and Affordability</b>            |                  |                |                  |                  |                  |
| Settlement Systems Replacement                           | \$ 1.8           | \$ 3.3         | \$ 0.2           | \$ -             | \$ 5.3           |
| Facilities Foundation *                                  | -                | 0.2            | 0.3              | 0.3              | 0.8              |
| Settlements Foundation *                                 | -                | 0.3            | 0.1              | 0.1              | 0.5              |
| Project Management Tool Replacement                      | -                | -              | 0.4              | -                | 0.4              |
| Circuit Redesign   | 0.2              | 0.0            | -                | -                | 0.2              |
| <b>Total Enhance Member Value and Affordability</b>      | <b>\$ 1.9</b>    | <b>\$ 3.8</b>  | <b>\$ 1.0</b>    | <b>\$ 0.4</b>    | <b>\$ 7.1</b>    |
| IT Service Management Tool Upgrade                       | -                | 1.0            | -                | -                | 1.0              |
| IT Foundation *  | -                | 9.3            | 9.4              | 10.3             | 29.0             |
| <b>Total Capital Budget</b>                              | <b>\$ 3.7</b>    | <b>\$ 17.9</b> | <b>\$ 16.6</b>   | <b>\$ 13.0</b>   | <b>\$ 51.2</b>   |
| <b>2018 - 2020 Capital Budget</b>                        |                  |                |                  |                  | <b>\$ 47.4</b>   |
| <b>Foundation Details</b>                                |                  |                |                  |                  |                  |
| IT Operations  |                  | \$ 6.4         | \$ 5.3           | \$ 7.3           | \$ 19.0          |
| IT Applications  |                  | 0.9            | 2.0              | 0.8              | 3.7              |
| IT Cyber Security  |                  | 0.7            | 0.6              | 0.7              | 2.0              |
| IT Architecture  |                  | 0.2            | 0.8              | 0.7              | 1.7              |
| Miscellaneous Departments                                |                  | 1.2            | 0.8              | 0.8              | 2.7              |
| <b>IT Foundation Total</b>                               |                  | <b>\$ 9.3</b>  | <b>\$ 9.4</b>    | <b>\$ 10.3</b>   | <b>\$ 29.0</b>   |
| Operations Marketplace and Other System Enhancements     |                  | 2.4            | 2.3              | 2.3              | 7.0              |
| Facilities   |                  | 0.2            | 0.3              | 0.3              | 0.8              |
| Settlements  |                  | 0.3            | 0.1              | 0.1              | 0.5              |
| <b>Total Foundation *</b>                                |                  | <b>\$ 12.2</b> | <b>\$ 12.1</b>   | <b>\$ 13.0</b>   | <b>\$ 37.3</b>   |

\* Foundation projects are reforecast during each budget cycle and do not include any carry-over funds.

## NRR VARIANCE HISTORY (\$ MILLIONS)



|            | <u>2008</u> | <u>2009</u> | <u>2010</u> | <u>2011</u> | <u>2012</u> | <u>2013</u> | <u>2014</u> | <u>2015</u> | <u>2016</u> | <u>2017</u> |
|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Actual NRR | \$58.1      | \$59.8      | \$63.5      | \$80.8      | \$84.8      | \$123.3     | \$137.0     | \$142.6     | \$144.5     | \$160.9 *   |
| Budget NRR | \$61.5      | \$56.5      | \$68.4      | \$78.4      | \$89.6      | \$121.8     | \$132.6     | \$141.2     | \$150.5     | \$160.5     |
| Variance   | (\$3.4)     | \$3.4       | (\$4.9)     | \$2.5       | (\$4.8)     | \$1.5       | \$4.4       | \$1.4       | (\$5.9)     | \$0.4       |
|            | (6%)        | 6%          | (7%)        | 3%          | (5%)        | 1%          | 3%          | 1%          | (4%)        | 0%          |

The graph and table above highlight the range of variance between SPP's actual and budgeted Net Revenue Requirement (NRR) by year. As SPP's NRR has increased over the years, the variances between actual and budget remain relatively small.

\* The 2017 NRR represents the forecast as of August 2017.



## PRIOR YEAR BUDGET COMPARISONS (\$ MILLIONS)

|   | <u>2014</u> | <u>2015</u> | <u>2016</u> | <u>2017</u> | <u>2018</u> | <u>2019</u> | <u>2020</u> |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Net Revenue Required Estimations</b> |             |             |             |             |             |             |             |
| 2014 Budget - NRR Estimations           | \$132.6     | \$148.5     | \$145.2     |             |             |             |             |
| 2015 Budget - NRR Estimations           |             | \$141.2     | \$147.1     | \$145.9     |             |             |             |
| 2016 Budget - NRR Estimations           |             |             | \$146.8     | \$148.5     | \$158.6     |             |             |
| 2017 Budget - NRR Estimations           |             |             |             | \$160.5     | \$168.2     | \$179.9     |             |
| 2018 Budget - NRR Estimations           |             |             |             |             | \$164.0     | \$178.8     | \$182.4     |
| <i>Actual NRR</i>                       | \$137.0     | \$142.6     | \$144.5     |             |             |             |             |
| <b>Billing Unit Estimations</b>         |             |             |             |             |             |             |             |
| 2014 Budget - Billing Units Estimations | 348.2       | 348.2       | 348.2       |             |             |             |             |
| 2015 Budget - Billing Units Estimations |             | 363.5       | 398.0       | 398.0       |             |             |             |
| 2016 Budget - Billing Units Estimations |             |             | 407.2       | 407.2       | 407.2       |             |             |
| 2017 Budget - Billing Units Estimations |             |             |             | 383.0       | 383.0       | 383.0       |             |
| 2018 Budget - Billing Units Estimations |             |             |             |             | 382.1       | 382.1       | 382.1       |
| <i>Actual Billing Units</i>             | 351.0       | 373.6       | 394.5       |             |             |             |             |
| <b>Administrative Fee Estimations</b>   |             |             |             |             |             |             |             |
| 2014 Budget - Admin Fee Estimations     | \$0.381     | \$0.426     | \$0.417     |             |             |             |             |
| 2015 Budget - Admin Fee Estimations     |             | \$0.390     | \$0.370     | \$0.360     |             |             |             |
| 2016 Budget - Admin Fee Estimations     |             |             | \$0.370     | \$0.370     | \$0.389     |             |             |
| 2017 Budget - Admin Fee Estimations     |             |             |             | \$0.419     | \$0.439     | \$0.470     |             |
| 2018 Budget - Admin Fee Estimations     |             |             |             |             | \$0.429     | \$0.468     | \$0.477     |
| <i>Actual Admin Fee</i>                 | \$0.390     | \$0.382     | \$0.366     |             |             |             |             |

The purpose of this schedule is to quantify the year-to-year changes in SPP's three year projections made during each budget cycle as required by the membership agreement. Accuracy of these projections can be significantly influenced by both internal and external pressures such as board and committee directives, incremental membership, environmental

## PROCESS IMPROVEMENTS

SPP staff and management proactively and continuously review processes and procedures to ensure departmental goals are achieved in an efficient and effective manner in line with SPP's cultural drivers of continuous improvement and efficiency, coupled with productive collaboration.

While many process improvements are quantifiable in terms of time, money and resources, many projects support the success of stakeholders in a qualitative way.

The vision for process improvement in 2017 was two-fold:

- 1) Increase **value to stakeholders** by implementing process improvements that increase efficiency, improve productivity, reduce risk and cost, and instill quality, trust and confidence.
- 2) Enhance **employee engagement** by creating opportunities for robust collaboration, critical examination of current state, experimentation and implementation of new ideas.

SPP addressed projects considering both financial and non-financial outcomes. Staff from across the company collaborated on a process-improvement strategic plan to drive actions toward the fulfillment of the vision. While identifying quantifiable process improvements was the goal, creativity of staff was not limited by eliminating nonfinancial improvement ideas. The philosophy and focus was on value and identifying what short-term and long-term value these improvements would bring to the stakeholders — indirectly, directly, financially and non-financially.

A distributed model was used as the framework (performance excellence teams), but many of the improvements were facilitated outside of these performance excellence teams. The business-process-improvement strategic plan was designed to foster continuous improvement throughout the organization.

While 18 process-improvement ideas were actively tracked, many other improvements were occurring on a daily basis throughout the organization.

Listed below are examples of activities and tasks that are now performed more efficiently as a result of process improvement initiatives in various departments.

- 1) General: Stakeholder data request submission calendar

Working with legal, communications, operations, engineering and compliance, the stakeholder data request submission calendar was posted to the SPP website. Working group staff secretaries were advised to employ this new resource.

Future enhancements include a conversion to true calendar functionality similar to the current calendar of events on the SPP website.

2) General: Improve expense tracking process for revision requests

Efforts are underway to determine the scope of the work and select critical players needed to draft a process for tracking and reporting expenditures associated with member-driven revision requests.

3) General: Transmission market improvement project

Various aspects of this project continue to move forward. In 2017, the settlements department automated approximately 90 percent of the transmission adjustment charge types. Settlements is very close to moving all but three of the settlement validations to a more robust and streamlined application. There have been multiple improvements to the transmission-customer/transmission-owner onboarding process, allowing a provision of more timely and accurate information to the downstream systems. A system enhancement was implemented that reduced the time required to post the price matrix to OASIS from approximately 16 hours to 10 minutes.

Efforts are ongoing to automate the revenue requirements and rates (RRR) process to reduce the manual interventions required to calculate transmission rates and to enter those rates into the appropriate systems. The goal is to implement the new RRR process at the same time the new settlement system goes live in May 2019. Additional efforts are underway to increase consistency by improving load definitions included in the tariff.

4) General: Compliance task analysis project

The project includes working with outside consultants to develop a formal controls inventory based on critical infrastructure protection (CIP) processes and procedures, including mapping National Institute of Standard and Technology (NIST) controls to SPP CIP controls.

5) General: Improvements to SPP.org content management procedures

This communications department plan is underway to migrate SPP.org in-house and assign dedicated resources to its maintenance and ongoing enhancement. SPP is also

implementing stricter controls around the timing of postings to provide stakeholders with clearer expectations regarding availability of postings.

- 6) General: Improvements to the budget process through the Corporate Budget Improvement Task Force

The task force enhanced the business case template and associated processes used by the directors and the PRPC to approve capital projects for inclusion in the annual budget.

- 7) General: Develop and implement a crowd collaboration platform for idea sharing and problem solving

Crowd collaboration looks to address an unresolved problem or unmet need and involves employees collaborating rather than competing to provide a solution.

- 8) Information technology: SPP CIP hardware asset management process improvements

This effort to mitigate CIP asset compliance risks will automate and document the checkpoints and stages that each critical infrastructure protection asset must go through in its lifecycle. The information included in this asset lifecycle process will be internal team “build documents” updated to reflect the touchpoints by asset type and/or support team. Asset management checkpoints and stages of an asset through the initial asset build have been designed. System requirements are currently under review.

- 9) Information technology: ID Asset comparison

This project involves developing an automation tool to assist in performing CIP asset changes. The tool will turn what was a time-consuming effort into something more streamlined, which will help IT meet CIP compliance requirements related to baseline comparisons.

- 10) Operations: Request Management System (RMS) ticket enhancements

Operations staff identified a more user-friendly public data layout to enhance the public data portal and provide job aids to SPP stakeholders. File descriptions have been standardized and drafted by each business area and are now consolidated into the public data guide. Efforts are pending an IT build-out in lower environments.

- 11) Operations: A methodology to consolidate all real-time operation contact lists into a master list that feeds all or most of the other systems that require this information.

This effort will be leveraged with the reliability communications tool.

- 12) Operations: Implementation of a change in staffing workload to better accommodate responsibilities of the balancing authority (effective Jan. 1, 2018)

Operations staff is redistributing the workload to allow full coverage of both the reliability coordination (RC) and balancing authority (BA) functions at both locations to provide better coverage of the balancing coordination responsibilities during an evacuation. This will ensure the RC and BA requirements are covered at all times, even during an evacuation. Having two balancing coordinators and reliability unit commitment (BC/RUC) operators on shift will also provide benefit for any future expansion. This project is on schedule for the January 2018 implementation.

- 13) Finance and corporate services: Working group improvements

The impetus of this effort is from stakeholder feedback regarding meeting materials. Staff focused on the following areas:

- a) Development of a formal onboarding process for staff secretaries, similar to the process for new supervisor training.

This onboarding process would include:

- Checklist and initial meetings with appropriate identified parties
- Creation of a best practices document and checklist including recommended curriculum for staff secretaries to access via the learning management system (LMS) tool

- b) Development of an evaluation and survey for distribution after each meeting

A draft of the best practices checklist is currently under review, and staff is creating materials for the SPP learning center internal site. The pilot of the new onboarding curriculum is under development in preparation for the official launch of the onboarding experience by the end of 2017.

- 14) Engineering: Alternating current contingency calculation (ACCC) consistency (contingency analysis)

This effort is complete. Incremental modifications will be made for transmission services and generator interconnection at a later date as specific needs are identified.

Benefits include:

- Improved study results and fewer errors due to consistency within all groups running on same program. This also results in the reduced risk of multiple versions of code. More time for additional analysis based on quicker results may also be considered as a benefit.
- Potential reduction in run time from 105 hours to 8 due to parallel vs. sequential runs.
- Increased efficiency due to centralized data repository for voltage violation reports, etc.

15) Engineering: Standard project naming convention

16) Engineering: Centralized repository for solutions

The goal is to develop applications that quickly search for solutions and associated ideas given a specific SPP steady state criteria violation. Benefits include time savings related to searching for similar solutions or developing new solutions when previous solutions already exist, the ability to identify more severe violations across studies and proactively address, and programmatic use allowing for proactive identification of solutions to members.

17) Engineering: Transmission and generation implementation tracking (TAGIT) backlog cleanup

18) Engineering: Ideas in the pipeline

- System slider files: Create a library of slider files (i.e., specification sheets) for all models that could be used as the basis for quality assurance (QA) and could eventually be automated to indicate GIS coordinates. This could create more visibility into the bigger picture, so engineers can better identify weaknesses in the system.
- Substation information: Create a process for systematically collecting and documenting substation data to assist with siting, detailed project proposals, project solution milestones, etc.

## **XI. SPP OPERATING PLAN DOCUMENT**

The operating plan is attached in its entirety as presented to the Finance Committee on Sept. 26, 2017.



# 2018 OPERATING PLAN

Published September 26, 2017

By the SPP Finance Department



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## BACKGROUND INFORMATION

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### *PURPOSE OF SPP*

SPP’s mission is “Helping our members work together to keep the lights on ... today and in the future.” All of SPP’s services are provided on a regional basis, independently, focused on reliability and cost effectiveness. The benefits of SPP are derived from this mission and the diligence to bring value to SPP members and their customers. SPP administers reliability coordination, transmission services and wholesale markets for the benefit of all electric utility operations in the region SPP serves. SPP is mandated by the Federal Energy Regulatory Commission (FERC) to ensure reliable supplies of power, adequate transmission infrastructure, and a competitive wholesale electricity marketplace.

SPP’s primary services provided to members and customers include:

- Facilitation
- Reliability Coordination
- Tariff Administration
- Transmission Planning
- Market Operations
- Compliance
- Training

### *REGULATORY*

SPP is directly regulated by FERC. All changes to the SPP regional tariff must be filed with and approved by FERC prior to implementation. Failure by SPP to comply with tariff provisions and/or FERC directives must be reported to FERC and may be subject to penalties and fines.

### *GOVERNING DOCUMENTS*

#### **OPEN ACCESS TRANSMISSION TARIFF (OATT, OR “TARIFF”)**

The SPP tariff defines the majority of the required workload for SPP’s operations and engineering departments. Significant duties include, but are not limited to:

- Tariff administration services, including scheduling
- Ancillary service provisions
- Market operations
- Balancing authority operations
- Settlement of all transactions under the OATT
- Administration of credit services for OATT customers
- Complete system impact studies
- Completion of the annual SPP Transmission Expansion Plan
- Study generation interconnection requests
- Evaluate long-term transmission service requests
- Administer the competitive process for transmission expansion
- Administer the Southwestern Power Administration transmission system beyond their tariff
- Monitor activities in SPP’s energy markets and exercise plans to mitigate market power

### **MEMBERSHIP AGREEMENT (MA)**

The MA is an agreement between SPP and each of its members. The MA obligates SPP to perform the services outlined, including those in the OATT. Additionally, the MA describes other significant duties which include, but are not limited to:

- Act as the reliability coordinator for the bulk electric system (BES)
- Develop regional reliability plans and emergency procedures
- Review and approve all planned maintenance of the BES
- Coordinate the maintenance of generation units
- Administer an Open Access Same Time Information System

### **BYLAWS**

The bylaws describe the organizational operation of SPP, specifically outlining the duties of the board of directors and committees advising the board. SPP has a responsibility to facilitate meetings of every organizational group. The scope of the organizational structure is as follows:

- Board of directors (1)
- Regional State Committee (1)
- Members committee (1)
- Board-level committees (6)
- Working groups (19)
- Task forces, subcommittees, strike teams (35+)

### **PROTOCOLS AND BUSINESS PRACTICES**

SPP has well-documented business practices which detail the administrative practices SPP follows in administering the OATT, including coordinating the sale of transmission service. SPP also has well-documented market protocols which detail how customers and SPP are to interact. These documents are developed through SPP's stakeholder process.

### ***ORGANIZATIONAL STRUCTURE***

SPP operates via two distinct organizational structures. The first, referred to as the governance structure (see Appendix A: Group Organizational Chart), begins with the board of directors and cascades into board level committees and then to working groups. This organizational structure is populated largely with representatives from SPP's member companies. Generally, the output of this structure is directives on the work SPP is expected to accomplish.

The second organizational structure, the internal staff (see Appendix B: SPP Organizational Chart), illustrates reporting relationships between employees. The staff structure begins with the SPP president and cascades into vice presidents, departmental directors/managers, etc. The staff structure is generally aligned based on functional responsibilities. This structure receives the directives from the external structure and then goes forward in acting on the directives.

### ***FUNDING***

SPP funds its ongoing operating costs through charges to customers under the tariff and customers of specific non-tariff services. SPP's operating costs are inclusive of scheduled principal and interest payments on its outstanding debt but are exclusive of depreciation and amortization expenses

incurred. SPP is able to collect up to 100% of its operating costs from charges to transmission customers up to a cap of 43¢/MWh. SPP is charging customers 41.9¢/MWh for service in 2017.

SPP's capital expenditures are funded with borrowings from periodic debt issuances and with 20% equity allocation included in the transmission service charge referenced above. SPP's debt issuances are generally unsecured, have a one-to-two year, interest-only payment period and then fully amortize by the maturity of the notes. SPP is required to obtain regulatory approvals prior to issuing new debt. SPP carries an A rating from Fitch Ratings which was last affirmed in August 2017. SPP staff believes SPP will need to issue new notes in 2018 to fund capital expenditures.

Short-term liquidity is provided by managing SPP's cash float. SPP has a committed \$30 million revolving credit facility to provide additional liquidity support. SPP is soliciting funding for a larger committed guidance line with a 5 year maturity to fund capital expenditures. The key aspect requested in the guidance facility is the ability to convert outstanding balances to fixed rate term notes. Staff expects to complete negotiations with lenders late 4Q'17 and, if successful, present a proposal to the SPP Board of Directors in early 2018.

## ***2018 EXPECTED BUSINESS ENVIRONMENT***

The expectations described below largely resemble those in last year's Operating Plan, with attention given to cybersecurity, the proliferation of renewable energy resources, and the impact of energy efficiency on load. An exception, though, is found in the regulatory arena, where a new presidential administration and subsequent changes in policy and regulatory and legislative leadership have brought numerous issues into question.

### ***Cybersecurity***

The threat of cyber-attacks continues to be one of SPP's and the entire industry's top risks. Critical infrastructure protection standards continue to evolve to cover areas such as supply chain protection, and such standards serve as robust, base-level requirements to secure our critical assets. The culture throughout the electric industry, though, is maturing from one of compliance to a culture of security.

SPP and its peers must remain involved in the development and implementation of regulations and standards to ensure that they allow for the flexibility needed to meet the security challenges they face in continuing to provide reliable, affordable electricity to consumers. The industry must continue to prioritize cybersecurity maturity above and beyond that which is required for compliance as evolving threats and emerging technologies surface faster than standards can be contemplated and promulgated.

### ***Energy Efficiency***

Continued innovation in the arena of energy efficiency, and particularly with regard to consumer goods, will continue to impact the load profiles of SPP and the entire electric utility industry. In the short-term, more efficient appliances and consumer electronics will continue to hold demand low. Soon, though, new technology and products – e.g., electric and autonomous cars – will become cheap enough to proliferate the consumer market, at which time the industry should expect load to grow significantly.

### ***Renewable Proliferation***

SPP expects continued growth in wind generation on our system. By the end of 2017, SPP will have more than 17 GW of wind capacity, and there is more than 36 GW of additional wind capacity in the generator interconnection study queue. While SPP has reliably managed wind penetration levels of

more than 50 percent and anticipates levels of 60 percent by 2018, a saturation point will be reached at which wind resources will need to be exported to other regions or curtailed to remain economically and reliably viable.

The SPP region has still seen only limited growth in solar, but that is soon expected to change. With regard to pending generator interconnection requests, solar power is second only to wind with more than 7 GW in SPP's study queue.

### ***Distributed Energy Resources***

Utility experts continue to wrestle with the question of the eventual impact of distributed energy resources (DER) on the reliability of the grid. Former FERC Chairman Cheryl LaFleur has suggested that decentralization may have already reached a tipping point, meaning utilities and grid operators will be forced to deal with DERs, whether as a threat or compliment to existing models. This may be hastened by the nation's changing resource mix (see "Renewable Proliferation" above), which is driving down the cost of solar photovoltaic and energy storage technology. Regardless of how decentralized the grid of tomorrow will become, adequate transmission infrastructure will play a crucial role in ensuring its reliability. SPP will also need to respond to changes prompted by its members and their customer bases, including those related to market support for locational issues.

### ***Regulatory Changes and the Trump Administration***

The election of President Trump and the coupling of his administration with Republican majorities in Congress will likely bring change to the power and utilities sector. Given the decreased threat of a presidential veto, there is potential for comprehensive energy legislation to be passed by Congress for the first time since 2005. Such legislation could lead to a significant amount of planning and analysis by regional transmission organizations (RTO), including SPP. The last attempt at comprehensive energy legislation failed during the previous administration but its policy provisions are likely to resurface during the current session of Congress.

The most notable and potentially relevant policy provisions to SPP are those related to grid hardening and security and provisions related to markets and distributed energy resources. For example, the House version of the 2016 energy bill would have required a "strategic reserve" of spare power transformers and emergency mobile substations to restore the grid after physical or cyberattack, electromagnetic pulse attack, geomagnetic disturbance, severe weather, or seismic events.

In addition to influencing the odds of comprehensive energy legislation, the new administration has resulted in a new FERC with four of the five commissioners being newly appointed to their posts. While there remains some regulatory uncertainty as to the priorities of this new FERC, the Department of Energy's (DOE) grid study provides some insight into the likely policy issues FERC will address in the coming year.

The study calls for FERC to expedite its efforts with states, RTO/ISOs, and other stakeholders to improve energy price formation in centrally-organized wholesale electricity markets, including negative pricing. And it directs the agency to study and make recommendations regarding efforts to require valuation of new and existing essential reliability services by creating fuel-neutral markets.

It is also expected that FERC will continue its focus on energy infrastructure issues that enable policies to streamline permitting for critical energy assets, especially to the degree the facilities support the resiliency and affordability themes laid out in the DOE staff report.

Perhaps the most immediate impact on utilities under the Trump administration is the elimination of aggressive deadlines for carbon emissions reductions from the generation fleet that were prescribed under the Environmental Protection Agency's Clean Power Plan. To comply with the Clean Power Plan, some utilities had taken steps to bring down emission levels, which included the shutting down of old coal-based power plants, investing in emission control equipment, and increasing the share of natural gas and other energy sources in electricity generation.

Although the CPP may be repealed or replaced with a less stringent emission standard, it is unlikely the decline in coal-fired power generation will be reversed; however, coal-focused electric utilities will likely be able to run their coal units for a longer period than expected earlier. This is because in many cases, the switch from coal to natural gas and renewables is being driven by factors beyond federal regulations. The primary driver has been and will continue to be economic. Coal is not competitive with lower-priced and widely-available natural gas, and the cost of developing renewable energy resources continues to decline. Therefore, it is expected that natural gas use increases across the SPP footprint with continued investment in natural gas-fired combined cycle resources while coal consumption decreases as coal loses market share to natural gas and renewable generation in the electric power sector.

Throughout 2018 and beyond, renewable generation will continue to grow. With a continued tax credit and declining capital costs, it is expected that solar capacity growth continues across the SPP footprint in the long term while tax credits provided for plants entering service until, but no later than 2024, provide incentives for new wind capacity in the near term.

## MAJOR 2018 PROJECT INVESTMENTS

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### *SETTLEMENT SYSTEM REPLACEMENT (STARTED IN 2016)*

Replace the current market and transmission settlement systems with a custom designed, single, high-performance, scalable system solution.

#### **BENEFITS**

Expand automation of the settlements processes to improve accuracy, timeliness, and auditability of the processes. Expect significant reduction in long-term support costs for the settlement function.

#### **STRATEGIC PLAN LINKAGE**

**Enhance member value and affordability:** Existing settlement system has proven to be inefficient, resulting in many manual adjustment processes to complete daily settlements.

#### **INVESTMENT AND TIMELINE**

The project initiated in 2016 and is expected to complete in 2Q'19. Significant milestones are:

- Research and evaluation of opportunities ..... **(completed)** 2016
- RFP and vendor selection.....**(completed)** 2017
- Formula builder.....**(completed)** July 2017
- Calculation engine ..... Feb 2018
- User interface ..... July 2018
- Development complete, market trials start..... Dec 2018
- Go-live ..... May 2019

#### Capitalized Development Costs (\$million)

- Software..... \$5.30
- Allocated IT expenditures (virtual servers, storage, etc.)..... \$0.98
- **Total Capitalized Development Costs** ..... **\$6.28**

SPP expects an increase of three full-time IT employees responsible for support and maintenance of the system. Once implemented, SPP will no longer pay for vendor provided support and maintenance of approximately \$1.4 million annually. Additionally, there will be replacements of hardware assets on SPP's standard five-year replacement schedule.

#### **RISKS**

Two significant risks have been identified:

- 1) New solution requires internal ownership for IT support and development of future enhancements. There is a risk internal IT would not be staffed appropriately to facilitate this required support and anticipated cost savings would not be realized. The project includes significant testing by SPP resources throughout code development to ensure familiarity with



the code. Hiring of incremental IT resources will occur early in 2018. These efforts are intended to mitigate the identified risk.

- 2) Settlement system solution represents a paradigm shift in the settlement and IT processes, including system and database approach. Cost savings are dependent on a successful shift in data gathering and processing. The vendor has a proven track record in customized financial system implementations and is nearing completion of similar settlement system replacement at a U.S. RTO.

### ***VOLTAGE SECURITY ASSESSMENT TOOL (VSAT) (STARTED IN 2017)***

The online VSAT will identify constraints on the transmission system that real-time operators will be able to mitigate using current congestion management tools. The VSAT will enable real-time operators and operational planning engineers to prepare for and react to stability concerns in order to maintain reliable operation of the BES.

#### **BENEFITS**

The most significant goal of this project is to identify areas of voltage concerns with real-time and near-term data. This can be done more efficiently using the VSAT's ability to construct a power-voltage curve with multiple defined contingencies. With the increase in variable generation in SPP's service area, power transfers and supply variability will become increasingly less predictable. VSAT will equip SPP to better predict the state of the system in order to facilitate reliable outage coordination, forward unit commitment, reliability assessments, and general reliable operation of the BES. VSAT will bolster SPP's compliance with NERC standards FAC-011-2, IRO-005-3.1a, IRO-008-2, IRO-009-2, and IRO-101-2.

#### **STRATEGIC PLAN LINKAGE**

- Reliability Assurance

#### **INVESTMENT AND TIMELINE**

VSAT implementation began in 2017 and will complete before the end of 2018. Initial capital costs include purchase of software, purchase of computer hardware, and new functionality added to the energy management system (EMS) software to facilitate the export of data. Total capital investment to bring the VSAT project to functional status is expected to be \$1.6 million.

#### **RISKS**

VSAT has been implemented at other RTOs that utilize an EMS on the Alstom (now GE) platform. Their implementations have been straightforward. SPP anticipates a similar implementation since this is a proven application and architecture. Internal resource constraints may impact the timeline for implementation but are not expected to be a factor.

### ***TRANSIENT STABILITY ANALYSIS TOOL (TSAT)***

Online TSAT helps prevent damage to generating equipment. Rotor angle stability, frequency stability and voltage stability are the three main breakdowns for analyzing power system stability. The TSAT application will monitor transient stability by taking an EMS snapshot case and performing power system transfers that stress the current case. Additional dynamic machine characteristics will be mapped to the EMS case. If the tool indicates transient stability issues corrective actions will be made in order to maintain reliable operation of the transmission system. TSAT will be used to ensure power

transfers do not cause a voltage collapse event or blackout. SPP’s current tools are not capable of identifying transient stability issues.

**BENEFITS**

The major benefit of the project is risk avoidance. This project will reduce reliability risk and improve the ability to operate at record variable generation levels. The reliability risk is directly associated with preventing damage to generation equipment. Transient stability is currently not evaluated in real-time operations. The additional awareness will provide SPP operators with increased situational awareness and lead to reduced risk operating the grid. Most North American ISO/RTOs have this tool in operation. SPP is the last to install this type of real-time sophisticated analysis at the ISO/RTO level.

Assuming TSAT prevents damage to one turbine shaft annually and considering the cost of a generator turbine shaft replacement (based on research papers indicating average cost to replace damaged equipment due to transient instability), cost savings would be approximately \$12million - \$21.5 million.

**STRATEGIC PLAN LINKAGE**

- **Reliability Assurance:** The increasing amount of volatility from renewable resources has the potential to create unstable conditions that SPP’s current tools are not equipped to identify. This project addresses issues found in the last two SPP wind studies, closes a potential compliance gap, and largely increases the reliability of the BES with the large amount of changing resource fuel mix. Wind generation has different characteristics than the conventional coal, gas and hydro generation (inertia, frequency response, voltage and reactive control, response to faults, etc.) Having a substantial part of the load covered with wind generation and less with traditional coal, gas and hydro changes the dynamic behavior of the BES. Other contributing areas that create a more complex behavior of the BES: use of phase shifters, high parallel flows from external RTO’s, DC lines parallel to AC lines.

**INVESTMENT AND TIMELINE**

The project will begin once the VSAT application is complete in production, which is expected to be in 1Q’18. The TSAT application is expected to be in production 1Q’19.

Capitalized Development Costs (\$million):

|  |               |
|--|---------------|
| • Hardware .....   | \$0.77        |
| • Licenses .....   | \$0.29        |
| • Consulting.....  | \$0.36        |
| • Other allocated IT Expenditures (virtual servers, storage, etc.) ..... | <u>\$0.20</u> |
| <b>Total Capitalized Development Costs.....</b>                          | <b>\$1.62</b> |

Once implemented, the project is expected to require expenditures for annual license fees and software maintenance. Additionally, there will be replacements of the hardware assets on SPP’s usual five-year replacement schedule.

**RISKS**

The most significant risk to timely implementation is the capacity of SPP staff to perform work associated with this project in addition to its routine daily workload. This project will require meaningful attention from SPP’s operations engineering staff, already operating at full capacity.

### **TRAINING AND TESTING SIMULATED ENVIRONMENT (TTSE)**

SPP’s Dispatcher Training Simulator (DTS) does not meet the requirements of SPP’s Operations department with the addition of balancing authority, reliability unit commitment and real-time balancing market functions, due to the lack of an integrated market system. Since the implementation of the Integrated Marketplace and SPP becoming the consolidated balancing authority, market systems have become integral to maintaining reliability and balancing. Realistic simulation training, using market systems, is imperative to SPP operator readiness and ultimately increased reliability for the SPP footprint.

The project was initially proposed in three phases:

- Phase 1: create stand-alone DTS separate from SPP’s customer training system
- Phase 2: create market system environment
- Phase 3: add virtualization tools mimicking those available in the control center

### **BENEFITS**

The major benefit of the project is risk avoidance. SPP stakeholders expect operations staff performing SPP’s critical real-time functions to be well-trained. Existing capabilities do not contemplate market solutions and impacts, resulting in the unrealistic simulations.

### **STRATEGIC PLAN LINKAGE**

**Reliability Assurance:** Provides realistic training simulations for SPP’s real-time operators to best prepare them for the challenges experienced while on shift.

### **INVESTMENT AND TIMELINE**

Phase 1 of the project initiated in 2016 and resulted in the implementation of a stand-alone training simulation environment for SPP’s operations staff. Phase 2 of the project will result in the addition of market simulation capability and contains two components: a) assembly of market simulation hardware and environment and b) build and integrate market simulation software. Phase 3 of the project will add visualization tools to the simulation environment closely mimicking the screens available at the real-time desks.

The completion timelines for each phase are:

- Phase 1: EMS Simulation ..... **(Complete)** Dec 2016
- Phase 2: Market Simulation
  - 2A.....Sept 2017
  - 2B..... Dec 2019
- Phase 3: Visualization ..... Dec 2018

Capitalized Development Costs (\$million)

- Phase 1 ..... \$0.23
- Phase 2A ..... \$0.18

|   |               |
|---|---------------|
| • Phase 2B .....                                | \$3.00        |
| • Phase 3 .....                                 | \$0.09        |
| <b>Total Capitalized Development Costs.....</b> | <b>\$3.50</b> |

Once implemented, the project is expected to require expenditures for annual license fees and software maintenance of nearly \$0.30 million annually. Additionally, replacement of the hardware assets will occur on SPP’s standard five-year replacement schedule.

**RISKS**

The market integration piece of this project (Phase 2B) was based on a proposal from AREVA/Alstom/GE. Due to the \$3 million turnkey quote, SPP staff has been evaluating a number of potential in-house solutions. In April 2017, as the complexity of Phase 2 evolved, it was split into A and B sub-phases to get the hardware and initial market environment in place to test potential solutions and determine the best path forward before committing more resources and capital.

The primary challenge is synchronizing the market time, which runs on wall clock/server time, with DTS scenario time. The DTS can be paused or restarted from a previous point, whereas the market runs continually. Unlike other RTOs with a GE market system, SPP’s market system has a market control component. This increases the complexity and unknowns of the project, as this is something GE has not utilized in a simulation system before.

*DEFERRED, CONTINGENT OR DECLINED PROJECTS*

The following projects have been identified as valuable but are not recommended for budget approval at this time. Reasons for not recommending the projects generally are due to uncertainty about regulatory requirements, timelines, solution, etc.

**DISTRIBUTED GENERATION FUNCTIONALITY**

Project would enhance SPP’s markets to allow participation by distributed generation resources and storage devices. FERC has issued a notice of proposed rulemaking but has not issued a final order detailing the requirements for compliance.

**Estimated capital investment:** \$1.8 million

**RELIABILITY COMMUNICATIONS TOOL**

Project would create an application to facilitate the systematic issuance, receipt, and auditable documentation of operating instructions.

**Estimated capital investment:** \$0.25 million

**FREEZE DATE REPLACEMENT**

The project will update the process that calculates firm rights used in real-time congestion processes in accordance with new rules and requirements agreed upon by CMP (SPP, MISO, PJM, TVA, AECI, MHEB, LGEE) members.

**Estimated capital investment:** \$0.35 million

**REPLICATED DATA SERVER UPGRADE**

The replicated data server gives SPP transmission operators and transmission owners a near real-time view of SPP's real-time models, substation one-line drawings, SCADA measurements, powerflow solution results, and real-time contingency analysis warnings and violations.

**Estimated capital investment:** \$0.26 million

## 2018 MAJOR TECHNOLOGY INVESTMENTS

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SPP's ability to provide the vast majority of its services is contingent on a robust and resilient technology infrastructure. SPP operates two data center facilities with full fail-over capacity in the event a single data center is unavailable. Within the data centers exist over 1,900 physical and virtual servers across multiple environments interconnected by a high availability network. Significant investments are made annually to maintain the existing capabilities of the technology infrastructure and enhance it to address new demands on the system, cyber security requirements, and incremental additions to SPP's service menu.

### **SYSTEMS ADMINISTRATION**

The major initiatives in the 2018 fiscal year include:

- Technology refresh of aged server systems (*based on IT's lifecycle policy*)
- Additional data storage for both data center sites (*production and backup capacity*)
- IT service management tool upgrade/replacement

### **TECHNOLOGY/SERVER REFRESH**

The systems administration team manages approximately 450 physical servers and roughly 1500 virtual servers. Generally speaking, IT's policy is to replace physical hardware after a five-year useful life based on exposure to increased failure rates, discontinued or unaffordable vendor support, operating system incompatibility, and the need for faster application performance and connectivity requirements.

SPP has approximately 160 physical servers (dedicated and virtualized) targeted for replacement during 2018 at a total expected replacement cost of \$2.8 million. In concert with the server refresh, SPP will continue to deploy and expand virtualization technology to maximize the utilization of computer hardware and software wherever possible.

### **DATA STORAGE**

SPP utilizes multiple storage technologies to manage data based on the speed, confidentiality, and frequency of use of the stored data. The total capacity of all storage platforms and technologies in place at SPP is 1.5 petabytes. SPP's need for additional storage grows annually based on the retention of years of Integrated Marketplace data and due to additional entrants to SPP's transmission and market services. SPP expects to add flash storage technology in 2018 at a cost of nearly \$1.0 million.

### **SERVICE MANAGEMENT**

SPP's current tool to perform incident, problem, change, asset, release, service request, and knowledge management functions is nearing its end of life. This tool is critical for performing processes related to change and configuration management for CIP-010 and SOC-1 as well as patch management related to CIP-007. SPP is performing a complete review of the system to determine if an upgrade is viable or if replacing the tool with a different product is the more viable and reasonable solution to ensure SPP is leveraging the best possible ITSM tool for the best value. SPP is also seeking a more user friendly interface that allows for better self-service, full service visibility with dashboards and reporting to

make better decisions, and drive improvements with service and asset awareness. The costs of upgrade or full replacement are not known at this time.

## ***IT ARCHITECTURE***

SPP maintains an architectural roadmap to guide its evaluation of and evolution to emerging technologies. The 2018 initiatives aligning with the architectural roadmap include the following:

- Data-Lake and Big Data infrastructure foundation
- Analytic and visualization tools

### **DATA-LAKE AND BIG DATA**

SPP utilized Netezza storage appliances as part of Integrated Marketplace project to store historical operational data for business analysis. The Netezza appliances started running out of storage as marketplace data exceeded initial business expectations. Also, the business started requesting access to more historical marketplace operational data (up to five years' worth) and keeping energy imbalance service production data online for time series analysis, data mining, and to produce reports. Data growth and new business requirements gave birth to the Data Lake project, which started in 2016 as an IT foundation project.

The Data Lake project's phase-one goals were to offload less frequently used data from production Netezza appliances to a cost-economical BigData storage solution that provides SQL access to the data, scales incrementally at both compute and storage levels depending on need, and postpones the need for purchasing new Netezza appliances. Phase 1 was successfully implemented and the purchase of new Netezza appliances was postponed.

Data Lake's Phase 2 is currently in progress and concentrates on data access controls, improving checkpoint/restart capabilities, improving SQL query performance, evaluating/implementing transactional capabilities, offloading more historical data from Netezza appliances, and evaluating technologies to feed data directly to Data Lake infrastructure.

Data Lake Phase 3 is slated for 2018. Its goals were to open more Data Lake functionality to business users to run existing processes on the Data Lake infrastructure, provide active-active infrastructure between data centers, implement technologies to feed data directly to Data Lake infrastructure, provide visualization and data analysis capabilities using the tools supported by the data services team, and reduce the dependency on costly Netezza type appliances.

This project reduces the cost of storing historical data for business analysis by reducing the dependency on large Netezza-type appliances. It eliminates the need for either new business tools or rewriting existing queries. It allows incremental scaling at either compute or storage independently which reduces capital and operation expenses. It eliminates time-consuming data migration and verification processes involved with appliance replacements. It also provides federated query capabilities to join the data for future optimizations in data storage.

SPP offloaded 50+ terabytes of data from production Netezza appliances as part of Data Lake phase 1 and postponed \$2.6 million in capital cost (need for purchasing new Netezza appliances).

Phases 1 and 2 included capital costs of \$1 million and allocated staff costs for 4.5 FTEs. Phase 3 capital costs are forecast at \$0.4 million and allocated staff of 2.25 FTEs. The project is expected to provide a 24.47% internal rate of return based on the seven-year cost model.

### ***CYBER SECURITY***

SPP intends to add numerous customizations to its arsenal of cyber monitoring, control, and remediation applications. These customizations will provide additional strength to SPP's already formidable cyber defenses. Additionally, SPP will be adding licenses for its cyber defense applications to allow deployment across other assets and data technologies.



## KEEPING THE LIGHTS ON

Reliability is job number one at SPP. It is the central focus of every decision and action undertaken within the organization. Internally, this is known as “keeping the lights on” or KTLO. It is the central theme of the organization’s mission statement, “Helping our Members work together to **keep the lights on**... today and in the future.” SPP’s responsibility toward reliability and other important services is delineated in numerous agreements, contracts, tariff, protocols, standards, etc. Significant resources are dedicated directly to fulfilling these obligations and significant support resources are invested in helping the direct satisfaction of these obligations.

### INTERNAL WORK GROUPS

SPP’s internal organizational structure is designed to ensure appropriate focus and leadership is deployed to address the KTLO work described above. Many groups have direct responsibilities to accomplish the work while others are available to provide necessary support.

### OPERATIONS

| Operations    | Salary & Benefits | Travel | Services | Other  | Total Exp | Cap Ex | Approved Staff |
|---------------|-------------------|--------|----------|--------|-----------|--------|----------------|
| 2018 Budget   | \$ 22.5           | \$ 0.3 | \$ 0.3   | \$ 0.1 | \$ 23.1   |        | 162            |
| 2017 Forecast | \$ 21.4           | \$ 0.2 | \$ 0.2   | \$ 0.1 | \$ 21.9   |        | 162            |

SPP’s operations department is responsible for many of the duties and responsibilities outlined in the OATT and MA. Operations staff are the front-line employees who engage real-time in the reliability and market aspects of SPP on a 24-hour-a-day, seven-day-a-week basis. Staff consists of engineers, certified system operators and specialized support personnel. The department is organized across three distinct subgroups:

1. System operations
2. Markets
3. Operations support

Significant duties include regional reliability coordination, tariff administration, transmission service, real-time and day-ahead market operations, maintaining models for state estimator and commercial modeling tools, training, and balancing authority operations. Additionally, operations staff work with numerous stakeholder groups including the Markets and Operations Policy Committee, Business Practices Working Group, Balancing Authority Operating Committee, Generation Working Group, Operating Reliability Working Group, and Operations Training Working Group. Finally, staff represents SPP and its members at numerous North American Reliability Corporation working groups.

| 2018 Priorities   | Strategic Plan Linkage   |
|---|--|
| <p>Complete a Renewable Generation Integration Study overseen by the Transmission Working Group. The study will analyze inter-modal oscillations identified in the 2017 Variable Generation Integration Study. Additional studies will analyze the 60% and 80% variable generation penetration cases.</p> | <ul style="list-style-type: none"> <li>• Reliability Assurance</li> <li>• Optimize Interdependent Systems</li> </ul> |
| <p>Enhance operator tools – Implement voltage stability analysis systems, build transient stability analysis systems, continue analysis of PMU data from members and neighboring systems.</p>   | <ul style="list-style-type: none"> <li>• Reliability Assurance</li> </ul>  |
| <p>Enhance operator capabilities – implement formal “learning team” processes, enhance simulation exercises to track closer to real world experiences</p>   | <ul style="list-style-type: none"> <li>• Reliability Assurance</li> </ul>  |

**ENGINEERING**

| Engineering   | Salary & Benefits | Travel | Services | Other  | Total Exp | Cap Ex | Approved Staff |
|---------------|-------------------|--------|----------|--------|-----------|--------|----------------|
| 2018 Budget   | \$ 10.6           | \$ 0.3 | \$ 2.1   | \$ 0.6 | \$ 13.7   |        | 80             |
| 2017 Forecast | \$ 9.9            | \$ 0.3 | \$ 1.9   | \$ 0.5 | \$ 12.7   |        | 80             |

Principal duties of SPP’s engineering department include planning SPP’s transmission system to meet future regional reliability, economic, and public policy needs in an optimized manner; tracking progress and costs of approved transmission expansion projects; and performing longer term (longer than one year) studies necessary to process requests for generation interconnection, transmission service, and transmission congestion rights. The department also performs data gathering and reliability assessment responsibilities in support of the SPP Regional Entity. The predominance of these duties are required by SPP’s tariff, business practices, MA, NERC Reliability Standards, and SPP Criteria.

| 2017 Priorities   | Strategic Plan Linkage  |
|---|---|
| <p><b>Improved Process Alignment:</b> work with stakeholders to identify and recommend improvements to better align the Aggregate Transmission Service Study (ATSS), GI, congestion hedging, and transmission planning assumptions and processes to alleviate concerns about the planning assumptions and the inability of customers to convert transmission rights into transmission congestions rights.</p> | <ul style="list-style-type: none"> <li>• Reliability Assurance</li> <li>• Enhance Member Value</li> </ul>                               |
| <p><b>Planning Studies:</b> Complete the initial ITP assessment under the processes approved by the Board and stakeholders in 2017. Study will complete in 2019.</p>  | <ul style="list-style-type: none"> <li>• Maintain Economical, Optimized Transmission System</li> </ul>                                  |
| <p><b>Customer Initiated Service Studies:</b> Implement any improvements approved through the GI Improvement Task Force to enhance SPP's ability to process growing numbers of GI requests.</p>   | <ul style="list-style-type: none"> <li>• Reliability Assurance</li> </ul>   |
| <p><b>Capacity Margin Refinement:</b> Address FERC identified deficiencies in SPP's reserve adequacy processes and implement the improved process.</p>  | <ul style="list-style-type: none"> <li>• Reliability Assurance</li> <li>• Enhance Member Value</li> </ul>                               |
| <p><b>Rayburn Country Study:</b> Complete PUCT requested study of the impact of moving Rayburn Country's facilities and load from SPP to ERCOT</p>  | <ul style="list-style-type: none"> <li>• Reliability Assurance</li> <li>• Maintain Economical, Optimized Transmission System</li> </ul> |

**INFORMATION TECHNOLOGY**

| Information Technology | Salary & Benefits | Travel | Services | Other   | Total Exp | Cap Ex | Approved Staff |
|------------------------|-------------------|--------|----------|---------|-----------|--------|----------------|
| 2018 Budget            | \$ 21.7           | \$ 0.1 | \$ 4.7   | \$ 22.0 | \$ 48.4   |        | 164            |
| 2017 Forecast          | \$ 20.1           | \$ 0.1 | \$ 4.1   | \$ 20.4 | \$ 44.6   |        | 161            |

The primary mission of IT is to develop, deploy, integrate and support the applications and infrastructure that supply SPP's operational and corporate systems. IT is divided into five primary groups (Enterprise Operations, Applications, Sourcing Strategy, Quality Control, and Cybersecurity), along with a chief architect.

The Enterprise Operations department provides 24x7-support for all communications and networking systems and all computer hardware and environmental needs for SPP's data centers. Each of these activities is critical to SPP's transmission, market, reliability and business processes. IT-Operations also provides technical direction, leadership, and architectural design for the communications, network,

storage, backup/recovery, and computing platforms for all aspects of the IT infrastructure utilized within SPP.

The IT-Applications department provides 24x7-support for existing systems including transmission, reliability, and Integrated Marketplace. The department is responsible for coordinating all software development efforts related to these key business systems, as well as planning and supporting the integration of new members/market participants such as Integrated Systems. IT-Applications plays an integral role in nearly all new projects, including the creation of requirements/test/rollback plans; developing software; providing technical leadership; defining, implementing and reviewing architecture; and providing ongoing maintenance and support for systems.

The Sourcing Strategy team is responsible for managing the IT budget and facilitating/negotiating business activities with major IT vendors. The team works closely with other IT departments to enact an appropriate short- and long-term budget and acquisition philosophy which incorporates vendor leveraging/relationships, asset lifecycles, and adequate maintenance coverage.

The Quality Control team works to identify and implement risk mitigation strategies to assist in compliance and protection of SPP’s assets. The team is responsible for conducting timely internal reviews of evidence to ensure ongoing compliance obligations are met. The team owns and maintains the documentation of all processes and procedures related to compliance for IT and select non-IT departments, including the associated and applicable Reliability Standard Audit Worksheets (RSAWs). The team also plays a significant role in IT EMBC/Recovery Planning, owning and facilitating applicable processes, procedures, and testing activities.

The Cybersecurity team was enhanced and consolidated in 2016 to ensure SPP complies with all requirements of the FERC-approved NERC cybersecurity standards. The team proactively evaluates and employs best practices to ensure SPP’s overall IT security is at optimal levels. They work closely with IT and SPP’s compliance departments to ensure security measures are adopted, implemented and followed according to SPP policies.

| 2018 Priorities  | Strategic Plan Linkage   |
|--|--|
| Automation: Areas of focus that will continue from 2017 into 2018 include patch management, server provisioning, and application testing. In each of these areas, IT staff spends significant time performing manual processes to build, track, replicate, and verify information. Implementation of automated processes will allow the team to reduce manual activities while providing improved quality and consistent outcomes. | <ul style="list-style-type: none"><li>• Enhance Member Value</li></ul> |

Reduce third-party consultant engagements: increased and aligned skills of internal staff to become more self-sufficient in supporting SPP’s infrastructure and applications and better positioned to assume support for enterprise projects (e.g., Z2 and Settlements replacement). Staff augmentation through consultants is projected at less than \$0.5 million in 2018 from a high of \$1.6 million in 2014

- Enhanced Member Value

Cybersecurity and CIP Compliance: The Cybersecurity team plans to perform routine training for all staff to quantify adherence to SPP policies and best -practices. At a corporate level the team plans to mitigate risk by implementing tighter controls over CIP assets/systems while performing ongoing penetration testing, vulnerability assessments and recovery exercises.

- Reliability Assurance
- Enhance Member Value

IT compute and data infrastructure: begin implementation of an alternative compute infrastructure during 2018 and beyond. Migration to the new platform will be a gradual process aligned with the refresh of existing servers and installations of new project requirements. This infrastructure will improve provisioning efficiency and manageability and as SPP adopts new platforms and environments

- Enhance Member Value

Data Governance: IT has attempted to implement a “fit for purpose” approach whereby the most cost-effective storage solution is aligned with user/application requirements. SPP will continue that approach with a focus on implementing effective processes to allocate/control/delete data in accordance with retention policies and/or end-user requirements. Success initiative will eliminate unnecessary/duplicative data and improve data life-cycle management.

- Enhance Member Value

**CORPORATE**

| <b>Corporate *</b> |                              |               |                 |              |                  |               |                       |
|--------------------|------------------------------|---------------|-----------------|--------------|------------------|---------------|-----------------------|
|                    | <u>Salary &amp; Benefits</u> | <u>Travel</u> | <u>Services</u> | <u>Other</u> | <u>Total Exp</u> | <u>Cap Ex</u> | <u>Approved Staff</u> |
| 2018 Budget        | \$ 30.8                      | \$ 0.9        | \$ 5.4          | \$ 6.5       | \$ 43.7          |               | 138                   |
| 2017 Forecast      | \$ 30.7                      | \$ 0.9        | \$ 5.4          | \$ 5.5       | \$ 42.4          |               | 137                   |

\* Includes Admin/Officer, Corporate Services, Reg/Legal/RSC, Interregional Relations/Market Design, Communications/Government Affairs and MMU

The corporate group has responsibility for many broad aspects of the organization and includes the following support areas:

- Executive
- Communications
- Accounting
- Gov’t Affairs
- Legal
- Human Resources
- Regulatory
- Administration
- Settlements
- Facilities
- Credit
- Market Monitoring

This group holds the budget for several expenses which are not allocated across the company such as pension expense, corporate liability insurance, and board of director compensation.

| <b>2018 Priorities</b>   | <b>Strategic Plan Linkage</b>   |
|--|---|
| Membership expansion: to the extent Mountain West Transmission Group proceeds with membership in SPP, considerable focus on ensuring the implementation proceeds timely and smoothly   | <ul style="list-style-type: none"> <li>• Optimize Interdependent Systems</li> </ul> |
| Settlements: build of the replacement system will consume the entire year. The project plan utilizes the “agile” delivery process which enables ongoing testing of the delivered components throughout the construction phase. | <ul style="list-style-type: none"> <li>• Enhance Member Value</li> </ul>            |

**PROCESS INTEGRITY**

| <b>Process Integrity</b> | <u>Salary &amp; Benefits</u> | <u>Travel</u> | <u>Services</u> | <u>Other</u> | <u>Total Exp</u> | <u>Cap Ex</u> | <u>Approved Staff</u> |
|--------------------------|------------------------------|---------------|-----------------|--------------|------------------|---------------|-----------------------|
| 2018 Budget              | \$ 7.9                       | \$ 0.3        | \$ 1.0          | \$ 0.1       | \$ 9.3           |               | 54                    |
| 2017 Forecast            | \$ 7.1                       | \$ 0.2        | \$ 0.5          | \$ 0.1       | \$ 8.0           |               | 53                    |

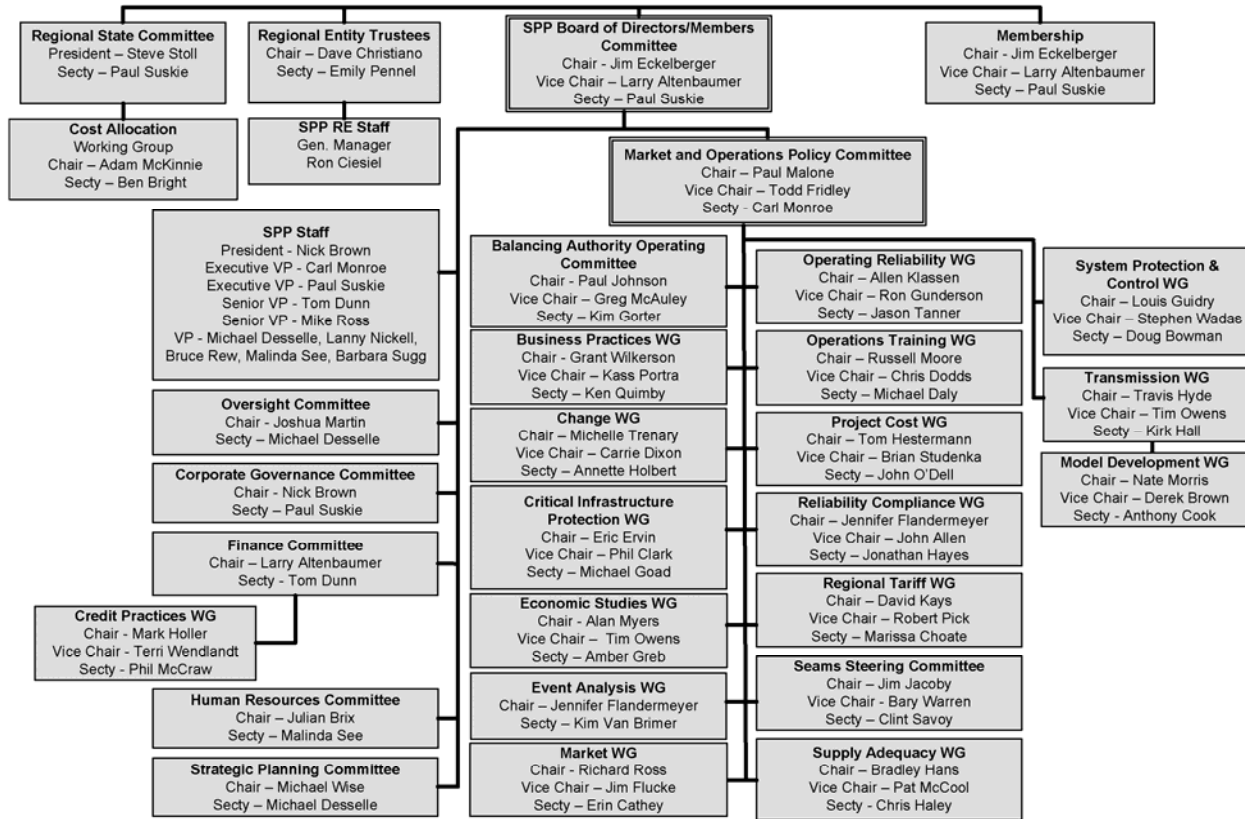
Primary responsibilities in the Process Integrity group include internal audit, reliability standards compliance, stakeholder services (including external member training and customer service), corporate project management, and interregional activities. Departments in this group work closely with the SPP Oversight Committee.

| <b>2018 Priorities</b>   | <b>Strategic Plan Linkage</b>   |
|--|---|
| Compliance: performance of an internal mock audit to gauge effectiveness of SPP’s processes and procedures designed to comply with NERC CIP v5 standards | <ul style="list-style-type: none"> <li>• Reliability Assurance</li> <li>• Enhance Member Value</li> </ul> |

APPENDIX A



# Group Organizational Chart

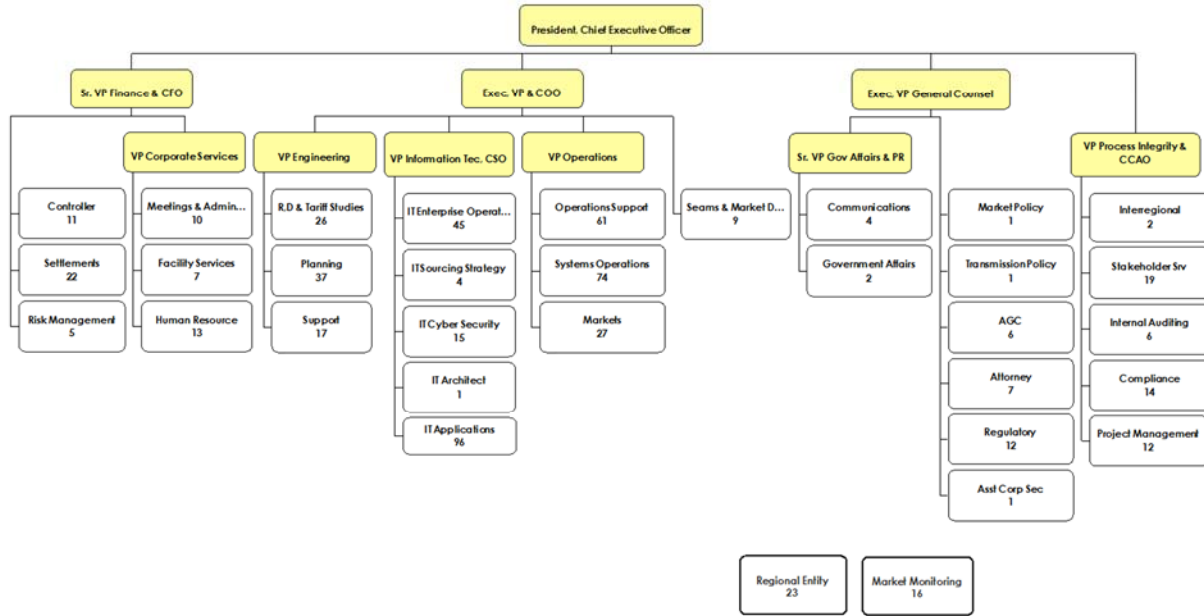


Updated 08/14/17



**APPENDIX B**

**SPP Organizational Chart - September 19, 2017**  
**Officers with detailed headcount**  
**Full Headcount 616**





**Southwest Power Pool  
FINANCE COMMITTEE  
Organizational Group Scope Statement**

**Purpose:**

The purpose of the Finance Committee is to oversee all aspects of SPP's finances and financial operations, primarily insuring appropriate controls, policies and procedures are documented and adhered to allowing SPP to report accurate financial reports, access external capital as required, while not exposing the company or its membership to undue risks.

**Scope of Activities:**

The Committee, in discharging its oversight role, is empowered to study or investigate any matter of interest or concern that the Committee deems appropriate. In this regard, the Committee shall have the authority to retain outside legal, accounting or other advisors for this purpose, including the authority to approve the fees payable to such advisors and any other terms of retention. ~~The Committee is directly responsible for oversight of the work (including both audit and non-audit services) of the independent financial and benefit plan auditors.~~ The Committee will recommend engagement and compensation of the independent auditors to the SPP Board of Directors. The Committee shall be given full access to the corporation's accounting staff, Board of Directors, corporate executives and independent accountants as necessary to carry out these responsibilities.

**Commented [TD1]:** Edit would be to remove the word "controls" from this sentence.

**Deleted:** , controls,

The Committee will have responsibility to approve, monitor/review, recommend, and report, as follows:

**Approve:**

- Annually, significant financial and compliance policies which fall under the purview of the Committee
- Annually, the basic assumptions used by SPP's actuary to determine the financial status and funding requirements of SPP's pension and post-retirement healthcare plans. These basic assumptions include, but are not limited to, discount rate, investment rate of return, rate of compensation change, and mortality tables utilized. The Committee will report these assumptions to the SPP Board of Directors.

**Review/Monitor:**

- The methodology of cost recovery to insure continuing equity for Members
- Any legal matter that could have a significant impact on the corporation's financial statements
- The adequacy of internal financial controls and the resolution of any identified material weaknesses or reportable conditions
- The corporation's guidelines and policies with respect to risk assessment and risk management focusing on the corporation's major financial risk exposures and the steps management has taken to monitor and control such exposures
- The structure of the Company's corporate liability insurance program, including review of retentions, insurance limits and exceptions, quality of underwriters, and activities of the broker(s) engaged to represent the Company to the insurance markets
- Annually, the investment performance of the pension and/or post-retirement healthcare plan assets and compliance with the approved Investment Policy Statements for the plans
- Policies for management of the company's capitalization, financing and long-term contracts
- At least annually, the performance of the Committee and its members, including reviewing the compliance of the Committee with this Charter

**Deleted:** <#>Annually, the Investment Policy Statements for the Company's retirement plan and post-retirement healthcare plan to ensure the Investment Policy Statements continue to be appropriate for the goals of the plans¶



- Changes to the Investment Policy Statements for the Company's retirement plan and post-retirement healthcare plan as approved by the SPP Administrative Committee

For clarification, the review of the investment performance and the investment policy statement for Company's retirement plan shall be for information purposes only, it being understood that all discretion with respect to SPP Retirement Plan investments shall reside with the SPP Administrative Committee.

**Recommend to the Board of Directors:**

- Annually, an operating budget, capital budget and each special budget for the upcoming fiscal year
- Annually, rates to be charged under Schedule 1A and for the assessment of members
- Annually, the corporation's audited financial statements as the corporate record of financial results for the prior fiscal year. The Committee shall review and discuss with management and the independent auditors, prior to public dissemination, the corporation's annual audited financial statements with primary focus on the quality and integrity of the statements
- Annually, the engagement of independent auditors to audit the corporation's annual financial statements, benefit plan financial statements, and controls environments.
- Annually, contributions to SPP's pension and post-retirement healthcare plans
- As needed, issuance of notes to fund capital expenditures, liquidity, and other general corporate purpose

**Report to the Board of Directors:**

- All actions taken by the Committee
- Any issues regarding the quality or integrity of the corporation's financial statements, compliance with legal or regulatory requirements, or the performance and independence of the corporation's independent financial and controls auditors
- Financial results with comparisons to budget
- Any other matters relevant to the Committee's discharge of its responsibilities

The Committee is not responsible for certifying the corporation's financial statements or guaranteeing the auditor's report. The fundamental responsibility for the corporation's financial statements and disclosures rests with management.

**Representation:**

The Finance Committee shall be comprised of up to six members. Two representatives shall be members of the Board of Directors and one of these will be the chairperson. Two representatives from the Transmission Owning Member sector as nominated by the Corporate Governance Committee and two representatives from the Transmission Using Member sector as nominated by the Corporate Governance Committee. The Board of Directors shall appoint their representatives at the regular meeting of the Board of Directors immediately following the Annual Meeting of Members. Persons designated as representatives on the Finance Committee will continue to serve until their successors have been appointed. Where a vacancy occurs, the Corporate Governance Committee will fill the vacancy in accordance with SPP Bylaws.

**Duration:**

The Finance Committee is a permanent committee. The Committee shall meet a minimum of two times per fiscal year and at other times as called by the Chair. A quorum will constitute at least half of the members of the Committee but no less than three members. Proxies are allowed if reported to the Chair prior to the meeting. All meetings of the Finance Committee shall be open to all interested parties unless closed by the Chair of the Committee.

Deleted: ¶



**Reporting:**

The Finance Committee reports directly to the Board of Directors.

# Memorandum

**To:** Accounting Manual  
**From:** Dianne Branch  
**CC:** Accounting Department Personnel  
**Date:** October 20, 2017  
**Re:** Clarification on Application of Capitalization Guidance

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## Objective

The purpose of this memo is to provide clarifying guidance on the application of our capitalization rules as presented in Section 4.2 of the SPP Accounting Manual. Section 4.2 provides general guidelines on the appropriate accounting treatment of capital purchases including thresholds, costs to include, upgrades versus repairs & maintenance expenses, etc.

## Background

The application of the \$5k threshold, especially as it relates to software purchases, has become increasingly more challenging given the variation and inconsistency amongst vendors with their pricing and invoicing methodology for software licenses. Some software purchases appeared to be truly priced on a per unit basis, while others provided only one license key but with a stated allowance for multiple users/occurrences with the one license. Sometimes the calculation of the final solution price would differ between the quote and the final invoice (i.e. total price the same, but units defined differently).

Historically, the policy was applied based strictly on the per unit cost basis and whether it exceeded the \$5k threshold. With the inconsistencies in pricing from vendors as previously described, Accounting and IT Sourcing were spending a significant amount of time analyzing each of the purchases on a case by case base, trying to ensure that each were being evaluated consistently under the current rules encompassed in Section 4.2 of the Accounting Manual. It became obvious that additional guidance was needed to provide the clarity required to facilitate the proper and consistent application of the capitalization thresholds in a timely manner.

## Analysis

The Accounting team collaborated extensively with the IT Sourcing team to devise language that would provide the additional guidance needed. While the focus was heavily on software purchases, the teams took this opportunity to also revisit any improvement needed in the area of hardware purchases. Based on this collaborative effort, the following explanatory guidelines were developed.

- Software Assets
  - Desktop Software– All costs will be expensed regardless of purchase price, either individually or in the aggregate. *Given that we expense all laptop computers, we felt that anything loaded on that computer should also be expensed.*
  - Non Desktop Software – If total purchase price is greater than \$5k, and has a useful life of at least 3 years, we will capitalize. *Given that when we make these particular software purchases, we are purchasing a corporate solution, the purchase price should be viewed holistically, not based on how many “users” may be able to access/utilize the software.*
- Hardware Assets
  - While not anticipated to have a significant impact to current processes, an exception to the \$5k/threshold per item will be granted in the event that a volume discount brings the per unit cost below \$5k for an asset normally costing >\$5k. *We didn’t want to capitalize a particular asset one day because it was purchased individually at > \$5k and then expense the same asset a month later only because a greater quantity of that identical item was purchased at the same time, making the per unit cost <\$5k.*
- Management Discretion

As unique situations present themselves, we reserve the right to exercise discretion in applying our capitalization policy and its underlying supporting processes. However, any proposed deviation from accepted practices will require the written approval of either the Controller and/or CFO, depending on the situation.

## Effective Date of Application

The timing of implementing this updated application methodology would be 1/1/18. There is no retroactive application to items purchased prior to 2018 given that the impact of doing so would be immaterial based on an analysis of all 2017 purchases.



**Southwest Power Pool, Inc.**  
**CREDIT PRACTICES WORKING GROUP**  
**Recommendation to the Finance Committee**  
**October 30, 2017**  
**Letter of Credit Modifications**

**Organizational Roster**

The following persons are members of the Credit Practices Working Group:

Mark Holler, Tenaska  
Malcolm Booker, OMPA  
Michael Malone, Heartland  
Robert Schleissinger, Xcel  
Matthew Simon, Basin

Terri Wendlandt, Westar  
Ronnie Hall, KCPL  
Cassandra Strange, OGE  
Mary Meier, OPPD

**Background**

Correct, update and clarify, letter of credit language making it more acceptable to financial institutions providing letters of credit with no or minimal revision.

**Analysis**

Proposed changes to the Letter of Credit form were reviewed by the CPWG at its September 21, 2017 meeting and approved unanimously. SPP's in-house legal staff has also reviewed and approved of the changes.

**Recommendation**

The Credit Practices Working Group recommends the Finance Committee approve the proposed changes to the Letter of Credit form.

**Approved:** Credit Practices Working Group September 21, 2017  
Unanimous vote to approve

**Action Requested:** Approve Recommendation





**OBJECTIVE OF REVISION**

**Objectives of Revision Request:**

*Describe the problem/issue this revision request will resolve.*

SPP's name is incorrect in the current format. There are other instances of unclear or outdate language.

*Describe the benefits that will be realized from this revision.*

Correct, update and clarify, letter of credit language making it more acceptable to financial institutions providing letters of credit with no or minimal revision.

**REVISIONS TO SPP DOCUMENTS**

*In the appropriate sections below, please provide the language from the current document(s) for which you are requesting revision(s), with all edits redlined.*

**SPP Tariff (OATT)**

**Form of Irrevocable Standby Letter of Credit**

**Irrevocable Standby Letter of Credit No. \_\_\_\_\_**

**Issued: [Date]**

**Expires at our counter (unless evergreen): [Date]**

Ladies and Gentlemen:

We do hereby issue this Irrevocable Non-Transferable Standby Letter of Credit No. \_\_\_\_\_ by order of, for the account of and on behalf of \_\_\_\_\_ (“Account Party”) and in favor of Southwest Power Pool, Inc. (“Beneficiary” or “SPP”) (“Letter of Credit”).

This Letter of Credit is irrevocable and is issued, presentable and payable and we guaranty to the Beneficiary of this Letter of Credit that drafts drawn under and in compliance with the terms of this Letter of Credit will be honored on presentation and surrender of certain documents pursuant to the terms of this Letter of Credit.

Deleted: drawers, endorsers and bona fide holders

This Letter of Credit is available in one or more drafts and may be drawn hereunder for the account of Account Party up to an aggregate amount not exceeding \$ \_\_\_\_\_ .00 (United States Dollars \_\_\_\_\_ and 00/100).

Deleted: \_\_\_\_\_

This Letter of Credit is drawn against by presentation to us at our office located at the following address:

\_\_\_\_\_  
\_\_\_\_\_

of a drawing certificate: (i) Signed by an officer or authorized agent of the Beneficiary; (ii) dated the date of presentation; and (iii) containing one (1) of the following statements:

- 1. “The undersigned hereby certifies to \_\_\_\_\_ (“Issuer”), with reference to its Irrevocable Non-Transferable Standby Letter of Credit No. \_\_\_\_\_, dated \_\_\_\_\_, issued on behalf of \_\_\_\_\_ (“Account Party”) and in favor of

Southwest Power Pool, Inc. ("Beneficiary") that said Account Party has failed to make a payment in accordance with the terms and provisions of one or more of the following, as applicable: SPP's Tariff, as may be amended and supplemented from time to time, together with all replacements and substitutes (the "Tariff"), any and all agreements entered into by Account Party under, pursuant to, or in connection with the Tariff and any and all agreements to which Account Party and SPP are parties, as such agreements may be amended and supplemented from time to time, whether now or hereafter executed, and any replacements or substitutions thereof, (collectively, the "Agreements"). The Beneficiary hereby draws upon the Letter of Credit in an amount equal to \$ \_\_\_\_\_ (United States Dollars \_\_\_\_\_ and 00/100)"; or

2. "As of the close of business on \_\_\_\_\_, 20\_\_ (fill in date which is less than eighty-seven (87) days before the expiration date of the Letter of Credit), Account Party has failed to renew, replace or amend the Letter of Credit in a manner acceptable to Beneficiary." The Beneficiary hereby draws upon the Letter of Credit in an amount equal to \$ \_\_\_\_\_ (United States Dollars \_\_\_\_\_ and 00/100)"; or
3. "As of the close of business on \_\_\_\_\_, 20\_\_ (fill in date which is more than three (3) Business Days after the Beneficiary has requested that Account Party replace the Letter of Credit because the Issuer's corporate debt is rated less than "A-" by S&P, "A3" by Moody's, "A-" by Duff & Phelps, or "A-" by Fitch), Account Party has failed to replace the Letter of Credit in a manner acceptable to Beneficiary." The Beneficiary hereby draws upon the Letter of Credit in an amount equal to \$ \_\_\_\_\_ (United States Dollars \_\_\_\_\_ and 00/100)";

Deleted: ; or

Beneficiary shall have the right, in the event of a draw pursuant to subparagraph (2) or (3) of the immediately preceding paragraph, to draw down the entire face value of the Letter of Credit.

If presentation of any drawing certificate is made on a business day and such presentations made on or before 10:00 a.m. \_\_\_\_\_ Time, ("Issuer") shall satisfy such drawing request on the same business day. If the drawing certificate is received after 10:00 a.m. \_\_\_\_\_ Time, ("Issuer") will satisfy such drawing request on the next business day.

It is a condition of this Letter of Credit that it will be automatically extended without amendment for one year from the expiration date hereof, or any future expiration date, unless at least 90 days prior to any expiration date we notify you by registered mail or overnight courier that we elect not to consider this Letter of Credit extended for any such period.

Deleted: renewed

This Letter of Credit may be terminated upon Beneficiary's receipt of full payment from the Account Party and Issuer's receipt of a written release from the Beneficiary releasing the Issuer from its obligations under this Letter of Credit.

Disbursements under the Letter of Credit shall be in accordance with the following terms and conditions:

1. The amount, which may be drawn by the Beneficiary under this Letter of Credit, shall be automatically reduced by the amount of any drawings hereunder.
2. All commissions and charges will be borne by the Account Party.
3. This Letter of Credit may not be transferred or assigned by the Issuer.

4. This Letter of Credit is irrevocable.

5. Except when the amount of this Letter of Credit is increased this Letter of Credit may not be amended, changed or modified without the express written consent of the Beneficiary and the Issuer. Such consent may be delivered by electronic means including electronic mail to \_\_\_\_\_.

Deleted: T

6. This Letter of Credit shall be governed by the International Standby Practices Publication No. 590 of the International Chamber of Commerce, including any amendments, modifications or revisions thereof (the "ISP"), except to the extent that terms hereof are inconsistent with the provisions of the ISP, in which case the terms of the Letter of Credit shall govern. This Letter of Credit shall be governed by the internal laws of the state of Arkansas to the extent that the terms of the ISP are not applicable; provided that, in the event of any conflict between the ISP and such Arkansas laws, the ISP shall control.

Deleted: 6. No Beneficiary shall be deemed to have waived any rights under this Letter of Credit, unless a Beneficiary or an authorized agent of a Beneficiary shall have signed a written waiver. No such waiver, unless expressly so stated therein, shall be effective as to any transaction that occurs subsequent to the date of the waiver, nor as to any continuance of a breach after the waiver.

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\_\_\_\_\_  
[Authorized Signature]

\_\_\_\_\_  
[Date]

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**Financial Metrics**  
**Forecast Variance to Budget - Impact to Admin Fee**  
**2017 - 3rd Quarter**

**Admin Fee Measurement**

| Metric                          | Chart | Previous 3 Month Indicators |        |        |
|---------------------------------|-------|-----------------------------|--------|--------|
| FY Fcst vs. Budget as of:       |       | Jul-17                      | Aug-17 | Sep-17 |
| Gross Revenue Requirement (GRR) | 1- 3  | ■                           | ■      | ■      |
| Net Revenue Requirement (NRR)   | 1- 3  | ■                           | ■      | ■      |
| Admin Fee Revenue Collected     | 1- 3  | ■                           | ■      | ■      |
| Over/(Under) Recovery           | 1- 3  | ■                           | ■      | ■      |
| MWh Load                        | 1- 3  | ■                           | ■      | ■      |

**Indicator Thresholds for Unfavorable Variances**

| Metric                          | Indicator Threshold Values |                |           |
|---------------------------------|----------------------------|----------------|-----------|
| (millions)                      | ■                          | ■              | ■         |
| Gross Revenue Requirement (GRR) | < = \$1.0                  | \$1.1 to \$2.2 | > = \$2.3 |
| Net Revenue Requirement (NRR)   | < = \$1.0                  | \$1.1 to \$2.2 | > = \$2.3 |
| Admin Fee Revenue Collected     | < = \$1.0                  | \$1.1 to \$2.2 | > = \$2.3 |
| Over/(Under) Recovery           | < = \$1.0                  | \$1.1 to \$2.2 | > = \$2.3 |
| MWh Load                        | < = 3.0                    | 3.1 to 5.4     | > = 5.5   |

Expected:      Monitor:      Concern:  
 ■                      ■                      ■

SPP Administrative Fee, Net Revenue Requirement & Load Metric  
 FY Actual vs. Budget Variance  
*(millions)*

|                                 | FY Forecast vs. Budget Variance as of: |           |           |
|---------------------------------|--|-----------|-----------|
|                                 | Jul-17                                 | Aug-17    | Sep-17    |
| Gross Revenue Requirement (GRR) | (\$0.2) ■                              | \$0.3 ■   | \$0.2 ■   |
| Net Revenue Requirement (NRR)   | (\$1.1) ■                              | (\$0.4) ■ | (\$0.3) ■ |
| Admin Fee Revenue Collected     | \$1.7 ■                                | \$1.9 ■   | \$2.0 ■   |
| Over/(Under) Recovery           | \$0.6 ■                                | \$1.5 ■   | \$1.7 ■   |
| MWh Load                        | 4.1 ■                                  | 4.5 ■     | 4.7 ■     |

SPP Administrative Fee, Net Revenue Requirement & Load Metric  
 FY Actual as of September 30, 2017  
 (millions)

|                                 | 2017<br>Forecast | 2017<br>Budget | Fav<br>/(Unfav) |   |
|---------------------------------|------------------|----------------|-----------------|---|
| Gross Revenue Requirement (GRR) | \$161.0          | \$161.3        | \$0.2           | ■ |
| Net Revenue Requirement (NRR)   | \$160.8          | \$160.5        | (\$0.3)         | ■ |
| Admin Fee Revenue Collected     | \$162.5          | \$160.5        | \$2.0           | ■ |
| Over/(Under) Recovery           | \$1.7            | (\$0.0)        | \$1.7           | ■ |
| MWh Load                        | 387.7            | 383.0          | 4.7             | ■ |

Legend

|                               | NRR     | MWh   | Admin Fee |
|-------------------------------|---------|-------|-----------|
| 2017 Budget                   | \$160.5 | 383.0 | \$0.42    |
| 1¢ Unfavorable NRR Threshold  | \$162.8 | 383.0 | \$0.43    |
| 1¢ Unfavorable Load Threshold | \$160.5 | 377.5 | \$0.43    |
| 1¢ Unfavorable Impact Factor  | (\$2.3) | (5.5) | (\$0.01)  |

Revenues

- Red ■ > = \$2.3 unfavorable
- Yellow ■ between \$1.1 and \$2.2 unfavorable
- Green ■ < = \$1.0 unfavorable

MWh Load

- Red ■ > = 5.5 unfavorable
- Yellow ■ between 3.1 and 5.4 unfavorable
- Green ■ < = 3.0 unfavorable

SPP Net Revenue Requirement Components  
FY Actual as of September 30, 2017

*(millions)*

| <u>Expenses</u>                                   | 2017<br>Forecast | 2017<br>Budget | Fav<br>/(Unfav) |               |
|---|------------------|----------------|-----------------|---------------|
| Salary & Benefits                                 | \$93.0           | \$91.3         | (\$1.7)         | (1.9%)        |
| Debt Service (Principal & Interest)               | 33.3             | 34.0           | 0.7             | 2.1%          |
| Communications & Maintenance                      | 20.3             | 22.2           | 1.8             | 8.3%          |
| Outside Services & RSC                            | 13.2             | 14.5           | 1.3             | 8.8%          |
| Administrative/Other                              | 6.9              | 5.3            | (1.6)           | (30.7%)       |
| Travel & Meetings                                 | 3.1              | 3.3            | 0.2             | 5.9%          |
| Gross Revenue Requirement (GRR)                   | <u>\$169.8</u>   | <u>\$170.5</u> | <u>\$0.7</u>    | <u>0.4%</u>   |
| <u>Revenue &amp; Other Adjustments</u>            |                  |                |                 |               |
| NERC Revenues *                                   | (\$10.0)         | (\$10.8)       | (\$0.8)         | (7.1%)        |
| Other Revenues                                    | (6.6)            | (6.1)          | 0.5             | 8.1%          |
| NRR Adjustments                                   | 7.6              | 6.9            | (0.8)           | 11.1%         |
| Net Revenue Requirement (NRR)                     | <u>\$160.8</u>   | <u>\$160.5</u> | <u>(\$0.3)</u>  | <u>(0.2%)</u> |
| <i>* Net Impact RE Expense &amp; NERC Funding</i> | <i>\$4.6</i>     | <i>\$4.5</i>   | <i>\$0.2</i>    | <i>3.5%</i>   |

## SPP Administrative Fee Performance

|                                     | 2007      | 2008      | 2009    | 2010      | 2011    | 2012      | 2013     | 2014    | 2015      | 2016      | 2017             |
|-------------------------------------|-----------|-----------|---------|-----------|---------|-----------|----------|---------|-----------|-----------|------------------|
| <u>Approved Budget</u>              |           |           |         |           |         |           |          |         |           |           |                  |
| Net Revenue Required (millions)     | \$52.8    | \$61.5    | \$56.5  | \$68.4    | \$78.4  | \$89.6    | \$121.8  | \$132.6 | \$141.2   | \$150.5   | \$160.5          |
| MWh Load (millions)                 | 288.6     | 312.5     | 331.3   | 333.5     | 343.0   | 353.5     | 360.9    | 348.2   | 363.5     | 407.2     | 383.0            |
| NRR / MWh Load                      | \$0.183   | \$0.197   | \$0.170 | \$0.205   | \$0.228 | \$0.253   | \$0.337  | \$0.381 | \$0.389   | \$0.370   | \$0.419          |
| Approved Admin Fee                  | \$0.190   | \$0.190   | \$0.170 | \$0.195   | \$0.210 | \$0.255   | \$0.315  | \$0.381 | \$0.390   | \$0.370   | \$0.419          |
| <u>Actual / Forecast</u>            |           |           |         |           |         |           |          |         |           |           |                  |
| Net Revenue Required (millions)     | \$48.0    | \$58.1    | \$59.8  | \$63.5    | \$80.8  | \$84.8    | \$123.3  | \$137.0 | \$142.6   | \$144.5   | <i>\$160.8</i>   |
| MWh Load (millions)                 | 301.1     | 296.1     | 328.2   | 331.6     | 341.4   | 361.7     | 357.5    | 351.0   | 373.6     | 394.5     | <i>387.7</i>     |
| NRR / MWh Load                      | \$0.159   | \$0.196   | \$0.182 | \$0.191   | \$0.237 | \$0.234   | \$0.345  | \$0.390 | \$0.382   | \$0.366   | <i>\$0.415</i>   |
| Calculated Rate Over/(Under) Budget | (\$0.024) | (\$0.001) | \$0.012 | (\$0.014) | \$0.008 | (\$0.019) | \$0.007  | \$0.009 | (\$0.008) | (\$0.003) | <i>(\$0.004)</i> |
| Load Growth                         | 5.12%     | (1.65%)   | 10.82%  | 1.05%     | 2.96%   | 5.93%     | (1.15%)  | (1.83%) | 6.46%     | 5.59%     | <i>(1.72%)</i>   |
| NRR (calculated rate times load)    | \$48.0    | \$58.1    | \$59.8  | \$63.5    | \$80.8  | \$84.8    | \$123.3  | \$137.0 | \$142.6   | \$144.5   | \$160.8          |
| Admin fee collected *               | \$57.2    | \$56.3    | \$55.8  | \$64.7    | \$71.7  | \$92.2    | \$112.6  | \$133.7 | \$145.7   | \$146.0   | \$162.5          |
| Difference Over/(Under)             | \$9.2     | (\$1.8)   | (\$4.0) | \$1.2     | (\$9.1) | \$7.5     | (\$10.7) | (\$3.2) | \$3.1     | \$1.4     | \$1.7            |

\* Admin fee collected excludes adjustments for monthly assessment refunds to reflect actual load.



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Monthly Financial Reporting Package  
September 2017

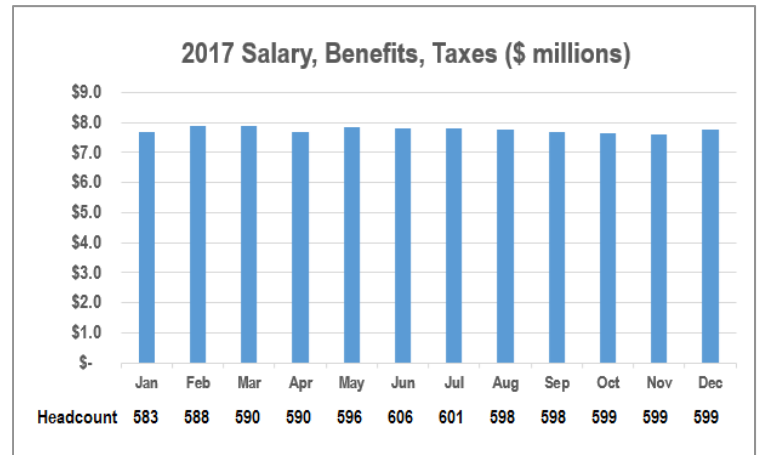
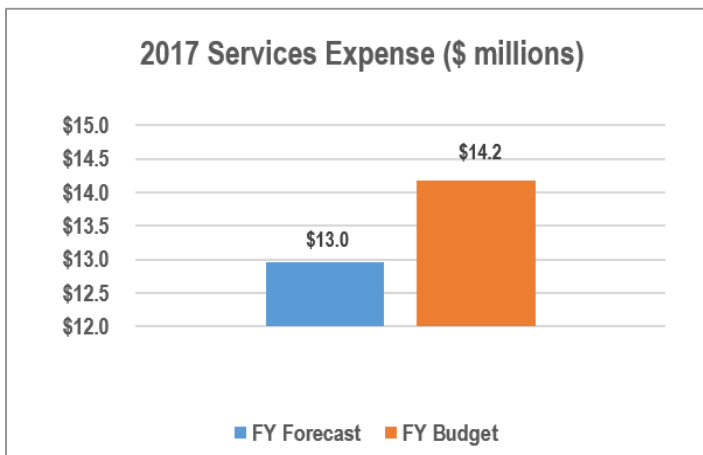
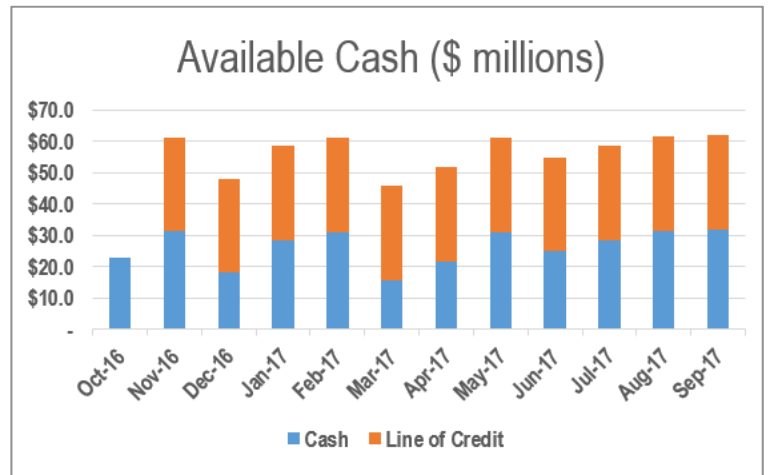
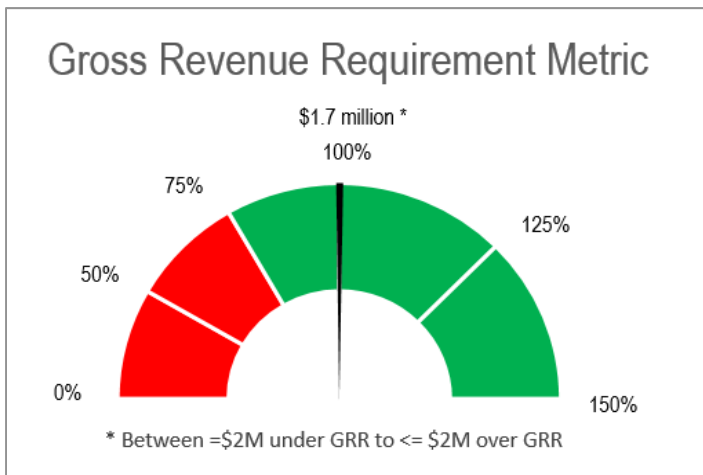
# SPP Executive Summary – September 2017

## 2017 Over / (Under) Recovery

| <u>Cost Recovery (\$ millions)</u> | 2017 Forecast | 2017 Budget | Fav/ (Unfav) |
|------------------------------------|---------------|-------------|--------------|
| Gross Revenue Requirement (GRR) *  | \$161.0       | \$161.3     | \$0.2        |
| Net Revenue Requirement (NRR)      | 160.8         | 160.5       | (0.3)        |
| Admin Fee Revenue                  | 162.5         | 160.5       | 2.0          |
| Over / (Under) Recovery            | \$1.7         | (\$0.0)     | \$1.7        |

\* GRR for HR metric excludes FERC fees and Regional Entity expenses

## GRR & Available Cash, Compensation and Outside Services Expenses



Southwest Power Pool  
2017 Financial Commentary  
September 30, 2017  
(in thousands)

| Summary           |                     |                   |                         |       |
|-------------------|---------------------|-------------------|-------------------------|-------|
|                   | 2017 FY<br>Forecast | 2017 FY<br>Budget | Fav/(Unfav)<br>Variance |       |
| Revenues          | \$194,909           | \$194,103         | \$807                   | 0.4%  |
| Expenses          | 195,120             | 196,360           | 1,240                   | 0.6%  |
| Net Income/(Loss) | <u>(\$211)</u>      | <u>(\$2,257)</u>  | <u>\$2,047</u>          | 90.7% |

| Revenue                       |                     |                   |                         |        |
|-------------------------------|---------------------|-------------------|-------------------------|--------|
|                               | 2017 FY<br>Forecast | 2017 FY<br>Budget | Fav/(Unfav)<br>Variance |        |
| Tariff Administration Service | \$162,465           | \$160,482         | \$1,983                 | 1.2%   |
| FERC Fees & Assessments       | 16,031              | 16,750            | (719)                   | (4.3%) |
| NERC ERO Regional Entity Rev  | 10,026              | 10,790            | (764)                   | (7.1%) |
| Miscellaneous Income          | 5,285               | 4,959             | 325                     | 6.6%   |
| Contract Services Revenue     | 533                 | 533               | -                       | -      |
| Annual Non-Load Dues          | 570                 | 588               | (18)                    | (3.1%) |
| Total Revenue                 | <u>\$194,909</u>    | <u>\$194,103</u>  | <u>\$807</u>            | 0.4%   |

Higher than expected monthly peaks during the 4th quarter of 2016 caused 2017 billing units for network service to exceed budget levels and results in additional Tariff Administrative Service revenue for 2017.

FERC Fees Assessments revenue reflects the current rate charged under Schedule 12 for 2017, which is \$0.062 as compared to \$0.064 assumed in the budget.

NERC ERO Regional Entity Operating expenses in the RE are below budget resulting in lower revenue recognition. The RE is functioning with 4 fewer staff positions than expected and is experiencing a decrease in legal and consulting expenses due to a lower number of violations. These lower expenses result in a \$0.2 million adverse impact to SPP's net revenue requirement.

Miscellaneous Income includes engineering studies revenue, MISO settlement revenues, and revenues related to the pass-thru costs of the FERC Order 1000 process. According to the agreement reached with the transmission owners regarding allocation of MISO revenues, SPP was allocated an additional \$0.7 million as a result of the resettlement of historical periods prior to 2016. Engineering study activities have steadily increased and associated revenues are expected to exceed budget (\$0.3 million). Other items reflected in the forecast but not in the budget include revenue for purchase and sales tax rebates (\$0.2 million) and reimbursements from RTOs for conferences and membership expansion studies (\$0.1 million). Since no projects are expected to go through the bidding process this year, pass-thru revenues and expenses of \$1.2 million associated with FERC Order 1000 were removed from the forecast and partially offset the favorable variances in miscellaneous income.

**Southwest Power Pool**  
**2017 Financial Commentary**  
**September 30, 2017**  
*(in thousands)*

| <b>Expense</b>                   |                     |                   |                         |         |
|----------------------------------|---------------------|-------------------|-------------------------|---------|
|                                  | 2017 FY<br>Forecast | 2017 FY<br>Budget | Fav/(Unfav)<br>Variance |         |
| Salary & Benefits                | \$93,019            | \$91,316          | (\$1,703)               | (1.9%)  |
| Assessments & Fees               | 21,663              | 18,600            | (3,063)                 | (16.5%) |
| Communications                   | 3,652               | 4,207             | 554                     | 13.2%   |
| Maintenance                      | 16,684              | 17,964            | 1,281                   | 7.1%    |
| Outside Services (Including RSC) | 13,189              | 14,455            | 1,266                   | 8.8%    |
| Administrative                   | 4,780               | 5,263             | 483                     | 9.2%    |
| Travel & Meetings                | 3,065               | 3,257             | 192                     | 5.9%    |
| Depreciation                     | 28,771              | 30,485            | 1,714                   | 5.6%    |
| Other Expenses                   | 10,298              | 10,813            | 515                     | 4.8%    |
| Total Expense                    | \$195,120           | \$196,360         | \$1,240                 | 0.6%    |

A lower than anticipated vacancy rate results in higher salary and benefits costs as compared to the budget. The budget assumed a vacancy rate of 5% based on historical trends. The 5% vacancy rate was equivalent to an average monthly headcount of 580. Headcount exceeded the budgeted target of 580 beginning in January. Active positions total 606 beginning in June and are expected to remain relatively constant throughout the rest of the year.

Incremental out-of-budget positions also contribute to the unfavorable variance. Five incremental compliance positions were vetted and approved by SPP Officers and Board of Directors in January 2017. Three incremental operator-in-training positions were approved in April to accommodate restructuring of staff as a result of upcoming retirements.

Assessments and fees is considerably higher than the original budget. SPP received the annual assessment invoice from FERC in June. The forecast includes a true-up for the prior year under-accrual, which is a result of an increase in FERC's charge factor (six percent) and SPP transmission sales (four percent). The forecast was also updated to reflect the revised estimate for 2017 activity that will be invoiced in 2018.

Communications expense trails budget due to favorable contract negotiations and renewal credits that result in lower expense for the year.

The favorable variance in maintenance is mainly driven by successful negotiation of terms/pricing for contract renewals on equipment maintenance, as well as delays and/or deferrals of capital spending that drive incremental maintenance.

The favorable variance in outside services expense is primarily related to removing FERC Order 1000 industry expert panel costs from the forecast, which is offset by a decrease in miscellaneous income and has no impact to the net revenue requirement. There are various other favorable and unfavorable factors that are individually immaterial to the overall variance.

Other expense includes interest expense, capitalized interest, investment income, interest rate swap valuation adjustments, and various other income and expense amounts. Due to the unpredictability, the only amounts budgeted in this category are interest expense and capitalized interest.

Interest expense is associated with debt issuances used for capital expenditures. The budget assumed new debt issuances in 2017 to meet SPP's capital spending needs. Cash flow projections indicate no need for additional funding until 2018, which results in an \$0.6 million favorable variance for 2017. The favorable valuation adjustments (\$1.3 million) are non-cash items and are not reflected in the net revenue requirement (NRR) recovery calculation.

Litigation resulting in \$1.6 million in fees was not included in the budget and serves as an offset to the favorable variance.

**Southwest Power Pool**  
**Monthly Financial Overview**  
**September 30, 2017**  
*(in thousands)*

|                                   | Actual<br>Jan-17 | Actual<br>Feb-17 | Actual<br>Mar-17 | Actual<br>Apr-17 | Actual<br>May-17 | Actual<br>Jun-17 | Actual<br>Jul-17 | Actual<br>Aug-17 | Actual<br>Sep-17 | Forecast<br>Oct-17 | Forecast<br>Nov-17 | Forecast<br>Dec-17 | FY 2017<br>Forecast | FY 2017<br>Budget | Variance<br>Fav/(Unfav) | FY 2016<br>Actual | Variance<br>Fav/(Unfav) |
|-----------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|--------------------|--------------------|--------------------|---------------------|-------------------|-------------------------|-------------------|-------------------------|
| <b>Income</b>                     |                  |                  |                  |                  |                  |                  |                  |                  |                  |                    |                    |                    |                     |                   |                         |                   |                         |
| Tariff Administrative Service     | \$13,528         | \$12,923         | \$13,508         | \$12,962         | \$13,769         | \$13,432         | \$13,976         | \$13,948         | \$13,633         | \$13,587           | \$13,440           | \$13,759           | \$162,465           | \$160,482         | \$1,983                 | \$144,546         | \$17,918                |
| Fees & Assessments                | 2,718            | 2,212            | 2,049            | 2,066            | 1,935            | 2,397            | 2,142            | 2,538            | 2,324            | 2,230              | 2,046              | 1,971              | 26,627              | 28,128            | (1,501)                 | 26,918            | (290)                   |
| Contract Services Revenue         | 44               | 44               | 44               | 44               | 44               | 44               | 44               | 44               | 44               | 44                 | 44                 | 44                 | 533                 | 533               | -                       | 529               | 4                       |
| Miscellaneous Income              | 430              | 1,296            | 492              | 191              | 606              | 372              | 492              | 366              | 291              | 250                | 250                | 250                | 5,285               | 4,959             | 325                     | 4,602             | 683                     |
| <b>Total Income</b>               | <b>16,720</b>    | <b>16,477</b>    | <b>16,093</b>    | <b>15,263</b>    | <b>16,354</b>    | <b>16,245</b>    | <b>16,654</b>    | <b>16,896</b>    | <b>16,292</b>    | <b>16,111</b>      | <b>15,780</b>      | <b>16,024</b>      | <b>194,909</b>      | <b>194,103</b>    | <b>807</b>              | <b>176,595</b>    | <b>18,315</b>           |
| <b>Expense</b>                    |                  |                  |                  |                  |                  |                  |                  |                  |                  |                    |                    |                    |                     |                   |                         |                   |                         |
| Salary & Benefits                 | 7,669            | 7,866            | 7,899            | 7,693            | 7,831            | 7,794            | 7,814            | 7,753            | 7,674            | 7,653              | 7,613              | 7,760              | 93,019              | 91,316            | (1,703)                 | 90,186            | (2,833)                 |
| Employee Travel                   | 101              | 177              | 149              | 161              | 200              | 185              | 160              | 171              | 201              | 194                | 180                | 162                | 2,041               | 2,245             | 204                     | 1,919             | (123)                   |
| Administrative                    | 229              | 346              | 292              | 537              | 329              | 501              | 472              | 335              | 265              | 836                | 261                | 375                | 4,780               | 5,263             | 483                     | 4,764             | (16)                    |
| Assessments & Fees                | 1,550            | 1,550            | 1,550            | 1,550            | 1,550            | 1,550            | 3,917            | 1,689            | 1,689            | 1,689              | 1,689              | 1,689              | 21,663              | 18,600            | (3,063)                 | 18,648            | (3,014)                 |
| Meetings                          | 44               | 124              | 70               | 98               | 96               | 123              | 165              | 32               | 41               | 119                | 63                 | 50                 | 1,023               | 1,012             | (12)                    | 974               | (49)                    |
| Communications                    | 313              | 315              | 329              | 328              | 245              | 297              | 299              | 287              | 291              | 303                | 303                | 343                | 3,652               | 4,207             | 554                     | 3,915             | 262                     |
| Maintenance                       | 1,117            | 1,223            | 1,245            | 1,369            | 1,303            | 1,398            | 1,321            | 1,178            | 1,556            | 1,614              | 1,580              | 1,778              | 16,684              | 17,964            | 1,281                   | 14,775            | (1,909)                 |
| Services                          | 771              | 1,302            | 1,179            | 1,226            | 1,338            | 930              | 882              | 900              | 891              | 1,021              | 1,122              | 1,400              | 12,963              | 14,184            | 1,221                   | 14,847            | 1,884                   |
| Regional State Committee          | 9                | 20               | 24               | 15               | 20               | 11               | 7                | 23               | 16               | 27                 | 27                 | 27                 | 226                 | 272               | 45                      | 220               | (6)                     |
| Depreciation                      | 4,724            | 4,705            | 1,905            | 1,879            | 1,893            | 1,857            | 1,735            | 1,847            | 1,743            | 2,161              | 2,177              | 2,145              | 28,771              | 30,485            | 1,714                   | 58,025            | 29,254                  |
| <b>Total Expense</b>              | <b>16,528</b>    | <b>17,628</b>    | <b>14,642</b>    | <b>14,856</b>    | <b>14,806</b>    | <b>14,647</b>    | <b>16,773</b>    | <b>14,215</b>    | <b>14,368</b>    | <b>15,617</b>      | <b>15,014</b>      | <b>15,728</b>      | <b>184,822</b>      | <b>185,547</b>    | <b>725</b>              | <b>208,272</b>    | <b>23,450</b>           |
| <b>Other Income/(Expense)</b>     |                  |                  |                  |                  |                  |                  |                  |                  |                  |                    |                    |                    |                     |                   |                         |                   |                         |
| Investment Income                 | 4                | 4                | 39               | 4                | 4                | 40               | 4                | 5                | 46               | -                  | -                  | -                  | 151                 | -                 | 151                     | 191               | (40)                    |
| Interest Expense                  | (874)            | (882)            | (876)            | (863)            | (858)            | (863)            | (842)            | (846)            | (844)            | (828)              | (822)              | (826)              | (10,226)            | (10,871)          | 646                     | (10,807)          | 582                     |
| Capitalized Interest              | -                | -                | 48               | -                | -                | -                | -                | -                | -                | -                  | -                  | -                  | 48                  | 58                | (10)                    | 121               | (73)                    |
| Change in Valuation of Swap       | -                | -                | 259              | -                | -                | 17               | -                | -                | 109              | -                  | -                  | -                  | 386                 | -                 | 386                     | 682               | (296)                   |
| Other Income/Expense              | 61               | 73               | 29               | 44               | (1,555)          | 71               | 76               | 29               | 54               | -                  | -                  | (500)              | (1,617)             | -                 | (1,617)                 | (421)             | (1,196)                 |
| Unrealized Gain on Investment     | 143              | 294              | (14)             | 91               | 116              | 7                | 174              | 32               | 117              | -                  | -                  | -                  | 960                 | -                 | 960                     | 649               | 311                     |
| <b>Net Other Income (Expense)</b> | <b>(666)</b>     | <b>(511)</b>     | <b>(514)</b>     | <b>(725)</b>     | <b>(2,293)</b>   | <b>(729)</b>     | <b>(587)</b>     | <b>(780)</b>     | <b>(518)</b>     | <b>(828)</b>       | <b>(822)</b>       | <b>(1,326)</b>     | <b>(10,298)</b>     | <b>(10,813)</b>   | <b>515</b>              | <b>(5,588)</b>    | <b>(4,710)</b>          |
| <b>Net Income (Loss)</b>          | <b>(\$473)</b>   | <b>(\$1,662)</b> | <b>\$936</b>     | <b>(\$317)</b>   | <b>(\$745)</b>   | <b>\$869</b>     | <b>(\$705)</b>   | <b>\$1,901</b>   | <b>\$1,407</b>   | <b>(\$334)</b>     | <b>(\$56)</b>      | <b>(\$1,030)</b>   | <b>(\$211)</b>      | <b>(\$2,257)</b>  | <b>\$2,047</b>          | <b>(\$37,265)</b> | <b>\$37,054</b>         |
| <b>2017 Headcount</b>             |                  |                  |                  |                  |                  |                  |                  |                  |                  |                    |                    |                    |                     |                   |                         |                   |                         |
| Approved Budgeted Positions       | 609              | 609              | 610              | 611              | 610              | 610              | 610              | 610              | 610              | 610                | 610                | 610                | 610                 | 610               |                         | 599               |                         |
| Headcount (Incl. Vacancies)       | 583              | 588              | 590              | 590              | 596              | 606              | 601              | 598              | 598              | 599                | 599                | 599                | 599                 | 580               |                         | 581               |                         |
| Total Positions (Active/Open)     | 613              | 618              | 618              | 621              | 621              | 621              | 621              | 616              | 616              | 616                | 616                | 616                | 616                 | 610               |                         | 609               |                         |
| Vacancy Run rate                  | 5%               | 4%               | 4%               | 5%               | 4%               | 2%               | 3%               | 3%               | 3%               | 3%                 | 3%                 | 3%                 | 4%                  | 5%                |                         | 5%                |                         |
| NRR Over / (Under) Recovery       | \$3,061          | (\$3,023)        | \$2,309          | \$1,137          | \$265            | (\$3,115)        | \$2,808          | \$2,584          | (\$2,911)        | \$1,466            | \$1,402            | (\$4,327)          | \$1,656             | -                 |                         | (\$7,079)         |                         |

Southwest Power Pool  
Current Month Financial Overview  
September 30, 2017  
(in thousands)

|                                   | Current Month Compared to Forecast |                      |                         | YTD Actual Compared to YTD Budget |                    |                         | FY Forecast Compared to FY Budget |                   |                         |
|-----------------------------------|------------------------------------|----------------------|-------------------------|-----------------------------------|--------------------|-------------------------|-----------------------------------|-------------------|-------------------------|
|                                   | Sep-2017<br>Actual                 | Sep-2017<br>Forecast | Variance<br>Fav/(Unfav) | Sep-2017<br>Actual                | Sep-2017<br>Budget | Variance<br>Fav/(Unfav) | FY 2017<br>Forecast               | FY 2017<br>Budget | Variance<br>Fav/(Unfav) |
| <b>Income</b>                     |                                    |                      |                         |                                   |                    |                         |                                   |                   |                         |
| Tariff Administrative Service     | \$13,633                           | \$13,532             | \$101                   | \$121,679                         | \$120,362          | \$1,318                 | \$162,465                         | \$160,482         | \$1,983                 |
| Fees & Assessments                | 2,324                              | 2,385                | (61)                    | 20,380                            | 21,243             | (863)                   | 26,627                            | 28,128            | (1,501)                 |
| Contract Services Revenue         | 44                                 | 44                   | -                       | 400                               | 400                | -                       | 533                               | 533               | -                       |
| Miscellaneous Income              | 291                                | 250                  | 41                      | 4,535                             | 3,720              | 815                     | 5,285                             | 4,959             | 325                     |
| <b>Total Income</b>               | <b>16,292</b>                      | <b>16,212</b>        | <b>81</b>               | <b>146,994</b>                    | <b>145,724</b>     | <b>1,270</b>            | <b>194,909</b>                    | <b>194,103</b>    | <b>807</b>              |
| <b>Expense</b>                    |                                    |                      |                         |                                   |                    |                         |                                   |                   |                         |
| Salary & Benefits                 | 7,674                              | 7,664                | (10)                    | 69,993                            | 68,793             | (1,200)                 | 93,019                            | 91,316            | (1,703)                 |
| Employee Travel                   | 201                                | 183                  | (18)                    | 1,506                             | 1,682              | 177                     | 2,041                             | 2,245             | 204                     |
| Administrative                    | 265                                | 340                  | 74                      | 3,307                             | 3,442              | 134                     | 4,780                             | 5,263             | 483                     |
| Assessments & Fees                | 1,689                              | 1,689                | -                       | 16,595                            | 13,950             | (2,645)                 | 21,663                            | 18,600            | (3,063)                 |
| Meetings                          | 41                                 | 72                   | 31                      | 792                               | 810                | 17                      | 1,023                             | 1,012             | (12)                    |
| Communications                    | 291                                | 303                  | 12                      | 2,704                             | 3,155              | 451                     | 3,652                             | 4,207             | 554                     |
| Maintenance                       | 1,556                              | 1,542                | (14)                    | 11,711                            | 13,546             | 1,835                   | 16,684                            | 17,964            | 1,281                   |
| Services                          | 891                                | 765                  | (126)                   | 9,419                             | 10,667             | 1,247                   | 12,963                            | 14,184            | 1,221                   |
| Regional State Committee          | 16                                 | 27                   | 10                      | 146                               | 204                | 58                      | 226                               | 272               | 45                      |
| Depreciation                      | 1,743                              | 2,115                | 372                     | 22,288                            | 23,979             | 1,691                   | 28,771                            | 30,485            | 1,714                   |
| <b>Total Expense</b>              | <b>14,368</b>                      | <b>14,700</b>        | <b>332</b>              | <b>138,462</b>                    | <b>140,228</b>     | <b>1,765</b>            | <b>184,822</b>                    | <b>185,547</b>    | <b>725</b>              |
| <b>Other Income/(Expense)</b>     |                                    |                      |                         |                                   |                    |                         |                                   |                   |                         |
| Investment Income                 | 46                                 | -                    | 46                      | 151                               | -                  | 151                     | 151                               | -                 | 151                     |
| Interest Expense                  | (844)                              | (840)                | (4)                     | (7,749)                           | (8,043)            | 294                     | (10,226)                          | (10,871)          | 646                     |
| Capitalized Interest              | -                                  | -                    | -                       | 48                                | 58                 | (10)                    | 48                                | 58                | (10)                    |
| Change in Valuation of Swap       | 109                                | -                    | 109                     | 386                               | -                  | 386                     | 386                               | -                 | 386                     |
| Other Income/Expense              | 54                                 | -                    | 54                      | (1,117)                           | -                  | (1,117)                 | (1,617)                           | -                 | (1,617)                 |
| Unrealized Gain on Investment     | 117                                | -                    | 117                     | 960                               | -                  | 960                     | 960                               | -                 | 960                     |
| <b>Net Other Income (Expense)</b> | <b>(518)</b>                       | <b>(840)</b>         | <b>323</b>              | <b>(7,321)</b>                    | <b>(7,985)</b>     | <b>663</b>              | <b>(10,298)</b>                   | <b>(10,813)</b>   | <b>515</b>              |
| <b>Net Income (Loss)</b>          | <b>\$1,407</b>                     | <b>\$671</b>         | <b>\$736</b>            | <b>\$1,210</b>                    | <b>(\$2,489)</b>   | <b>\$3,699</b>          | <b>(\$211)</b>                    | <b>(\$2,257)</b>  | <b>\$2,047</b>          |
| Headcount                         | 598                                | 599                  | (1)                     | 598                               | 610                | (12)                    | 616                               | 610               | 6                       |

Southwest Power Pool  
Balance Sheet  
September 30, 2017  
(in thousands)

|                                       | <u>9/30/2017</u> | <u>12/31/2016</u> | <u>Net Change</u> |
|---------------------------------------|------------------|-------------------|-------------------|
| <b>ASSETS</b>                         |                  |                   |                   |
| <b>Current Assets</b>                 |                  |                   |                   |
| Cash & Equivalents                    | \$67,554         | \$75,715          | (\$8,161)         |
| Restricted Cash Deposits              | 313,271          | 223,964           | 89,307            |
| Accounts Receivable (net)             | 32,112           | 63,702            | (31,590)          |
| Other Current Assets                  | 13,778           | 9,291             | 4,487             |
| <b>Total Current Assets</b>           | <b>\$426,715</b> | <b>\$372,671</b>  | <b>\$54,043</b>   |
| Total Fixed Assets                    | 77,948           | 92,690            | (14,742)          |
| Total Other Assets                    | 2,364            | 4,628             | (2,264)           |
| Investments                           | 19,393           | 10,835            | 8,558             |
| <b>Total Assets</b>                   | <b>\$526,420</b> | <b>\$480,825</b>  | <b>\$45,595</b>   |
| <b>LIABILITIES &amp; EQUITY</b>       |                  |                   |                   |
| <b>Liabilities</b>                    |                  |                   |                   |
| <b>Current Liabilities</b>            |                  |                   |                   |
| Accounts Payable (net)                | \$20,562         | \$66,927          | (46,364)          |
| Customer Deposits                     | 329,677          | 223,964           | 105,713           |
| Current Maturities of LT Debt         | 23,325           | 23,227            | 98                |
| Other Current Liabilities             | 56,475           | 54,310            | 2,165             |
| Line of Credit                        | -                | -                 | -                 |
| Deferred Revenue                      | 2,538            | 5,127             | (2,589)           |
| <b>Total Current Liabilities</b>      | <b>432,578</b>   | <b>373,554</b>    | <b>59,024</b>     |
| <b>Long Term Liabilities</b>          |                  |                   |                   |
| Long-Term Debt                        | 219,026          | 235,050           | (16,025)          |
| Capital Lease Obligation              | 2,446            | 3,856             | (1,411)           |
| Other Long Term Liabilities           | 37,841           | 35,044            | 2,796             |
| <b>Total Long Term Liabilities</b>    | <b>259,312</b>   | <b>273,951</b>    | <b>(14,639)</b>   |
| Net Income                            | 1,210            | (37,265)          | 38,475            |
| Members' Equity                       | (166,680)        | (129,415)         | (37,265)          |
| <b>Total Members' Equity</b>          | <b>(165,470)</b> | <b>(166,680)</b>  | <b>1,210</b>      |
| <b>TOTAL LIABILITIES &amp; EQUITY</b> | <b>\$526,420</b> | <b>\$480,825</b>  | <b>\$45,595</b>   |



Southwest Power Pool  
Headcount Analysis  
September 30, 2017

|                                     | Current Month Actual vs. Budget |                  |                        | Year End Forecast vs. Budget |                |                        |
|-------------------------------------|---------------------------------|------------------|------------------------|------------------------------|----------------|------------------------|
|                                     | Actual<br>Sep-17                | Budget<br>Sep-17 | Over/(Under)<br>Budget | 2017<br>Forecast             | 2017<br>Budget | Over/(Under)<br>Budget |
| Administration                      | 49                              | 50               | (1)                    | 49                           | 50             | (1)                    |
| Process Integrity                   | 47                              | 52               | (5)                    | 53                           | 52             | 1                      |
| Operations                          | 160                             | 158              | 2                      | 162                          | 158            | 4                      |
| Information Technology              | 160                             | 156              | 4                      | 161                          | 156            | 5                      |
| Engineering                         | 77                              | 80               | (3)                    | 80                           | 80             | 0                      |
| Regulatory Policy & General Counsel | 24                              | 27               | (3)                    | 27                           | 27             | 0                      |
| Corporate Services                  | 29                              | 30               | (1)                    | 30                           | 30             | 0                      |
| Market Monitoring                   | 14                              | 16               | (2)                    | 16                           | 16             | 0                      |
| Market Design                       | 6                               | 6                | 0                      | 6                            | 6              | 0                      |
| Interregional Relations             | 3                               | 3                | 0                      | 3                            | 3              | 0                      |
| Communications & Gov't Affairs      | 6                               | 6                | 0                      | 6                            | 6              | 0                      |
| SPP Regional Entity                 | 23                              | 28               | (5)                    | 23                           | 28             | (5)                    |
| Open Positions / Adjustments        | 0                               | (2)              | 2                      | 0                            | (2)            | 2                      |
| <b>Total Headcount</b>              | <b>598</b>                      | <b>610</b>       | <b>(12)</b>            | <b>616</b>                   | <b>610</b>     | <b>6</b>               |

**Headcount changes:**

|   |            |
|---|------------|
| 2017 Approved positions                 | 612        |
| Unidentified positions to be eliminated | (2)        |
| <b>2017 Budgeted positions</b>          | <b>610</b> |
| Incremental out-of-budget positions     | 8          |
| Removal of RE open positions            | (5)        |
| Added unidentified eliminations         | 3          |
| <b>2017 Current total positions</b>     | <b>616</b> |

Notes: Five incremental out-of-budget positions in IT and compliance were approved in early 2017. Three out-of-budget operator-in-training positions were approved in April 2017 in anticipation of organizational changes as a result of upcoming retirements. Five open positions within the Regional Entity were removed from the forecast.

The 2017 budget included two unidentified eliminations (carried over from the 2016 budget) and the elimination of one operator-in-training position. The positions have been added back to the forecast as a result of recent developments with the Regional Entity.

**PMO Project Information**

|   |  |  |
|---|--|--|
| <b>Project Name: PR20160003</b><br>Two-Factor Authentication  | <b>Owning Department</b><br>IT                   | <b>Member-Facing/Impacting?</b><br>Yes - Impacting   |
| <b>Status</b><br><span style="background-color: green; color: black;">Green</span> – On Schedule and below budget   | <b>Project Phase</b><br>Executing/Testing in MTE |  |
| <b>Project Description:</b><br>Security related incidents are becoming more frequent and challenging. Companies are actively enhancing the authentication mechanisms to filter out the right end user from the wrong end user. Multi-factor authentication mechanisms are now an industry standard and becoming mandatory where critical business data is exposed to the end users through Internet.<br>This project effort is to implement a process for Two-Factor authentication that will impact IT Marketplace Application environments including internal and external (Vendor and Member) user communities.<br>Legal Dept. currently reviewing SOW for required code changes by Nexant (\$27,000 – pending). This SOW is to cover the expenses incurred from the second authentication change and modifications to the environment to match SPP’s environment. | <b>Total Budget</b><br>\$193,944                 | <b>Budget Spent to Date</b><br>Capital: \$24,480<br>Non-Captial (O&M): \$0<br><br><b>Total Spent to Date</b><br>\$24,480<br><br><b>Remaining Estimated Costs to Complete</b><br>\$27,000<br><br><b>Estimated Cost at Completion:</b><br>\$51,480 |
| <b>Remaining Milestones</b><br>PROD Code to Required 10/24/2017<br>Stage Gate 4: Project Close out 11/09/2017   | <b>Scope Changes</b><br>None                     |  |

\* - Original Estimate of project was \$193,944.



**PMO Project Information**

|   |   |  |
|---|---|--|
| <b>Project Name</b><br>The Circuit Redesign   | <b>Owning Department</b><br>Communications  | <b>Member-Facing/Impacting?</b><br>No  |
| <b>Status</b><br>Green <sup>+</sup>   | <b>Project Phase</b><br>Execution & Construction  |  |
| <b>Project Description:</b><br>SPP's current version of its employee intranet, <u>The Circuit</u> is outdated, runs on various pieces of software no longer supported, therefore, it contains many broken functions. This project is to create a user-friendly and up-to-date intranet without any broken modules or functions. The goals for the new intranet include improved functionality, enhanced ability to find information and an improved design that drives more employee collaboration. | <b>Total Budget</b><br>\$249,445*   | <b>Budget Spent to Date</b><br>Capital: \$102,633<br>Non-Capital: \$0<br><br><b>Total Spent to Date</b><br>\$102,633<br><br><b>Remaining Estimated Costs to Complete</b><br>\$146,812<br><br><b>Estimated Cost at Completion:</b><br>\$249,445 |
| <b>Remaining Milestones</b><br>Completion of Development - 12/4/17<br>Functional and Integration Testing - 12/31/17<br>Data and Code Migration – 1/22/18<br>User Acceptance/Performance Testing – 3/13/18<br>Launch of New Intranet – 3/23/18<br>Project Closure – 4/9/18   | <b>Scope Changes</b><br>None – The exit and breach of contract of the first vendor was costly to the budget and timeline. |  |

<sup>+</sup> The project was in red status on the last report. It is now in green as an updated project plan was approved by the PRPC. The new project end date of 4/9/18 is reflected in this report.

\*A new project budget has been approved by the PRPC and appropriate level executives. The rebaselined project budget of \$249,445 is reflected in this report and below:

|  |                   |
|--|-------------------|
| <i>The Circuit Redesign Project 2016 Approved Capital Budget</i> | \$ 80,245         |
|  |                   |
| <b>NEW BUDGET</b>  |                   |
| <i>Capital Budget Spend with First Vendor</i>                    | \$ 73,000         |
| <i>Estimate to Complete Project with New Vendor</i>              | \$ 176,445        |
| <b>REQUESTED NEW BUDGET</b>                                      | <b>\$ 249,445</b> |
|  |                   |

|                             |              |
|-----------------------------|--------------|
| OUT OF BUDGET COST VARIANCE | \$ (169,200) |
|-----------------------------|--------------|

**PMO Project Information**

|  |  |  |
|--|--|--|
| <b>Project Name</b><br>PR20170002 EMS, CMT, MDB, MKTNET Upgrade  | <b>Owning Department</b><br>Reliability and Markets Operations | <b>Member-Facing/Impacting?</b><br>No  |
| <b>Status</b><br><span style="background-color: green; color: white;">Green</span>   | <b>Project Phase</b><br>Executing                              |  |
| <b>Project Description:</b><br>Upgrade to supported versions of EMS/CMT/Markets GE/Alstom e-terra* products running on compatible and supported operating systems in accordance with industry and SPP standards (e-terraplatform 2.5, e-terrahabitat 5.10 to have an end of life of January 2020. Complete server hardware refresh and required operating system upgrades for the all environments for EMS, CMT and Markets (MKTNET, AIE, AIMMS, RRC) with an end of life of January 2018. Perform EMS RHEL7 and Habitat 5.10 upgrade & CMT Oracle 11g to 12c database software upgrade in parallel to these efforts with an end of life of December 2020. This project is to be delivered in 3 phases. The first phase includes upgrades to EMS and CMT hardware and software. This is scheduled for delivery in February 2017. The second phase upgrades the Markets database (MDB) hardware and software from Oracle 11G to Oracle 12C. Phase three upgrades MKTNET and ancillary applications. | <b>Total Budget</b><br>\$705,000                               | <b>Budget Spent to Date</b><br>Capital: \$406,651<br>Non-Capital: \$0<br><br><b>Total Spent to Date</b><br>\$406,651<br><br><b>Remaining Estimated Costs to Complete</b><br>\$298,349<br><br><b>Estimated Cost at Completion:</b><br>\$705,000 |
| <b>Remaining Milestones</b><br>MDB PROD Cutover – 9/26/17 - Complete<br>PROD cutover for CMT – 11/1/17<br>Cutover PROD for EMS and MKTNET – 11/28/17   | <b>Scope Changes</b><br>None                                   |  |

**PMO Project Information**

|  |   |   |
|--|---|---|
| <b>Project Name</b><br>Engineering Hub   | <b>Owning Department</b><br>Engineering | <b>Member-Facing/Impacting?</b><br>Yes - Facing   |
| <b>Status</b><br>Green – On Schedule   | <b>Project Phase</b><br>Testing         |   |
| <b>Project Description:</b><br>This project proposes implementation of an automated Engineering Hub capable of interfacing with other applications within SPP through standard database protocols. It will allow export functionality of model data through a web-based graphical user Interface (GUI). The web-based front end will provide review and editing capability to authorized users. The users will be able to edit data through the GUI as well as cross-reference data. The database will also store the base committed model for review and reporting. Each change or submission will be stored in the database as a changed project with a unique project identifier, created date, effective date, and submitter details. The system will also generate and send applicable email notifications and/or reminders to SPP, Members, and/or applicable non-Members for each submission. Email notifications will help both SPP and Stakeholders better meet NERC Standard (MOD-32-01, etc.) compliance requirements. This system reduces SPP staff time performing manual tasks, which will increase efficiency and productivity while helping to reduce data errors. | <b>Total Budget</b><br>\$647,880        | <b>Budget Spent to Date</b><br>Capital: \$411,200<br>Non-Captial (O&M): \$0<br><br><b>Total Spent to Date</b><br>\$411,200<br><br><b>Remaining Estimated Costs to Complete</b><br>\$128,800<br><br><b>Estimated Cost at Completion:</b><br>\$540,000* |
| <b>Remaining Milestones</b> <ul style="list-style-type: none"> <li>• Connectivity Testing Ends 11/17/2017</li> <li>• Member Testing Ends – 12/8/2017</li> <li>• Project Closure – 12/22/2017</li> </ul> <p>* The vendor contract was negotiated to be \$540,000, therefore, we only expect to spend the amount negotiated.</p>   | <b>Scope Changes</b><br>None            |   |





**PMO Project Information**

|  |  |  |
|--|--|--|
| <b>Project Name</b><br>GRC Tool Project  | <b>Owning Department</b><br>Compliance                 | <b>Member-Facing/Impacting?</b><br>No  |
| <b>Status</b><br><span style="background-color: green; color: black; padding: 2px;"><b>GREEN</b></span><br><br>Analysis and Design (A&D) is complete and the design has been approved. The vendor build started on October 2 <sup>nd</sup> and will continue through October 31 <sup>st</sup> . The vendor and SPP has agreed upon dates through go-live for project completion. | <b>Project Phase</b><br>Executing (Vendor Development) |  |
| <b>Project Description:</b><br><br>A governance, risk, and compliance (GRC) tool will:<br>1) assist in the identification of job tasks that have compliance or risk management obligations, 2) provide mapping and workflows to support performance of those obligations, and 3) assist staff in managing their responsibilities in a timely, effective, efficient manner.       | <b>Total Budget</b><br>\$466,000                       | <b>Budget Spent to Date</b><br>Capital: \$317,174<br>Non-Captial (O&M): \$0<br><br><b>Total Spent to Date</b><br>\$317,174<br><br><b>Remaining Estimated Costs to Complete</b><br>\$148,826<br><br><b>Estimated Cost at Completion:</b><br>\$466,000 |
| <b>Remaining Milestones</b><br>10/31/17: Vendor Build Completion<br>11/01/17: Testing Kickoff<br>12/28/17: Testing Complete<br>12/29/17: Live  | <b>Scope Changes</b><br>None as of 10/19/17            |  |



**PMO Project Information**

|   |  |  |
|---|--|--|
| <b>Project Name</b><br>PR20170001 ICCP SW and OS Upgrade  | <b>Owning Department</b><br>Reliability Operations | <b>Member-Facing/Impacting?</b><br>No  |
| <b>Status</b><br><span style="background-color: green; color: white;">Green</span>  | <b>Project Phase</b><br>Executing                  |  |
| <b>Project Description:</b><br>Upgrade to a supported version of ICCP (Alstom e-terracomm) software running on a compatible and supported operating system in accordance with industry and SPP standards. The 32 bit to 64-bit software upgrade will also allow more permission to be granted to data items without reaching memory limitations. This upgrade will update the existing architecture of six production servers and four ITE servers to six production servers and two ITE servers. | <b>Total Budget</b><br>\$64,993                    | <b>Budget Spent to Date</b><br>Capital: \$32,497<br>Non-Captial (O&M): \$0<br><br><b>Total Spent to Date</b><br>\$32,497<br><br><b>Remaining Estimated Costs to Complete</b><br>\$32,496<br><br><b>Estimated Cost at Completion:</b><br>\$64,993 |
| <b>Remaining Milestones</b><br>Complete Testing of PROD/DR – 10/23/17<br>Cutover new DR – 11/7/17<br>Cutover to new PROD – 12/12/17   | <b>Scope Changes</b><br>None                       | Remaining budget due after production cutover.   |

**PMO Project Information**

|  |   |  |
|--|---|--|
| <b>Project Name</b><br>Identity and Access Management Phase I  | <b>Owning Department</b><br>IT Cyber Security | <b>Member-Facing/Impacting?</b><br>No  |
| <b>Status</b><br><b>Green</b> – On Schedule  | <b>Project Phase</b><br>Testing               |  |
| <b>Project Description:</b><br>This a phased project to identify, purchase and deploy an Identity and Access Management System and implement any supporting processes. Phase 1 includes Requirements Gathering, Conceptual Design, Gap Analysis, Proofs of Concept, and selection of an IAM solution | <b>Total Budget</b><br>\$692,000              | <b>Budget Spent to Date</b><br>Capital: \$692,000<br>Non-Capital (O&M): \$119,729*<br><br><b>Total Spent to Date</b><br>\$119,729<br><br><b>Remaining Estimated Costs to Complete</b><br>\$692,000+<br><br><b>Estimated Cost at Completion:</b><br>\$811,729 |
| <b>Remaining Milestones</b> <ul style="list-style-type: none"> <li>• SailPoint Proof of Concept Complete - 10/31/17</li> <li>• Software Solution Chosen - 11/15/17</li> <li>• Project Closure – 11/30/17</li> </ul>  | <b>Scope Changes</b><br>None                  |  |

\* - The consulting activities in Phase 1 were deemed to be Operating Expenses; treated as an IT-Outside Expense.

+ - a meeting is scheduled with the Business Owner on 10/23/17 to confirm forecast for the rest of 2017 and 2018; currently Remaining Estimated Costs to Complete is \$692,000



**PMO Project Information**

|  |   |  |
|--|---|--|
| <b>Project Name</b><br>Online VSAT   | <b>Owning Department</b><br>Operations        | <b>Member-Facing/Impacting?</b><br>No  |
| <b>Status</b><br><span style="background-color: green; color: white;">Green</span> – On schedule   | <b>Project Phase</b><br>Executing and Testing |  |
| <b>Project Description:</b><br>Voltage Stability is the ability of a power system to maintain steady voltages at all buses in the system after a large disturbance. The On-Line Voltage Security Assessment Tool (VSAT) software uses real-time and fixed data sets to provide SPP comprehensive analyses for predicting and preventing voltage insecurity problems.<br>The Online VSAT project will deliver the tool in a production environment by the project end date in 2018. | <b>Total Budget</b><br>\$1,468,000            | <b>Budget Spent to Date</b><br>Capital: \$516,146<br>Non-Capital: \$0<br><br><b>Total Spent to Date</b><br>\$516,146<br><br><b>Remaining Estimated Costs to Complete</b><br>\$623,764<br><br><b>Estimated Cost at Completion:</b><br>\$1,139,910 |
| <b>Remaining Milestones</b><br>Integration, enhancements and testing - 10/31/17<br>Internal Training and Education – 02/28/18<br>Software installation in Production environment - 03/23/18<br>Data validation & Go Live Date – 04/30/18<br>Project Closure – 6/1/18   | <b>Scope Changes</b><br>None                  |  |

**PMO Project Information**

|   |  |  |
|---|--|--|
| <b>Project Name</b><br>PMU Data Exchange  | <b>Owning Department</b><br>Operations | <b>Member-Facing/Impacting?</b><br>Yes   |
| <b>Status</b><br>Green – On schedule  | <b>Project Phase</b><br>Testing        |  |
| <b>Project Description:</b><br>SPP has a need to install the components for Synchrophasor aka Phasor Measurement Unit (PMU) data exchange and analytics. PMU devices can capture voltage, frequency, current, and angle for the 3 phases at a substation as fast as 60 measurements a second. This granularity of data enhances after-the-fact event analysis, model validation efforts, and real-time situational awareness. It can also aid in improving State Estimator accuracy.<br><br>The scope of the project includes tasks designed to launch the software, as well as educate, research and obtain member feedback on the usage of PMU data in the SPP footprint. | <b>Total Budget</b><br>\$1,888,000     | <b>Budget Spent to Date</b><br>Capital: \$908,058*<br>Non-Capital: \$0<br><br><b>Total Spent to Date</b><br>\$908,058<br><br><b>Remaining Estimated Costs to Complete</b><br>\$445,000*<br><br><b>Estimated Cost at Completion:</b><br>\$1,353,058 |
| <b>Remaining Milestones</b><br>Production Testing Complete - 10/31/17<br>Synchrophasor Strike Team Deliverables - 11/30/17<br>Internal software training and education - 11/30/17<br>Data quality and validation – 11/30/17<br>Project Closure – 12/31/17   | <b>Scope Changes</b><br>None           |  |

\* The project is tracking under budget for the following reasons:

- Contract negotiations yielded a savings of **\$354K** from the original estimates for software license and support expenses.
- A technology analysis (open-source vs. vendor supplied) for long-term storage of data reduced hardware costs.
- SPP project staff have been able to complete numerous tasks budgeted for the software vendor to complete, for a reduction of about **\$150K** in estimated professional services.
- SPP project staff determined high-availability hardware and a deployment to the secure CIP environment was not needed at this time, which led to a decrease in hardware expenditures.
- Several budgeted items (virtual servers, SAN storage, SQL License, and Data backups) that were included in original project budget (**\$400K**) are being tracked as part of the IT Foundation budget.

**PMO Project Information**

|   |   |  |
|---|---|--|
| <b>Project Name</b><br>Settlements System Replacement Project   | <b>Owning Department</b><br>Settlements | <b>Member-Facing/Impacting?</b><br>Yes   |
| <b>Status</b><br><span style="background-color: green; color: black;">Green</span> (On Schedule and on budget)  | <b>Project Phase</b><br>Executing       |  |
| <b>Project Description:</b><br>The proposed project will replace the current Market and Transmission Settlement Systems with a custom designed single high performance scalable system solution.  | <b>Total Budget</b><br>\$5,333,000      | <b>Budget Spent to Date</b><br>Capital \$1,224,258<br>Non-Capital: \$0<br><br><b>Total Spent to Date</b><br>\$1,224,258<br><br><b>Remaining Estimated Costs to Complete:</b><br>\$4,108,742<br><br><b>Estimated Cost at Completion:</b><br>\$5,333,000 |
| <b>Remaining Milestones</b><br><b>Milestone 2</b> - Calc Engine, Data Visualization, 20% Calcs – 1/31/18<br><b>Milestone 3</b> – Bus Process, UI, 45% Calcs – 6/27/18<br><b>Milestone 4</b> – Audit, Workflow, Data Migration, 35% Calcs – 10/31/18<br><b>Milestone 5</b> – Rampdown and Transition to SPP – 1/31/18<br><b>External Testing</b> – 3/29/19<br><b>Go-Live</b> – 5/1/19<br><br><b>Note:</b><br>Percentages reflect the number of Billing Determinants/Charge Type Calculations that the vendor will deliver with each milestone. | <b>Scope Changes</b><br>None            |  |



**PMO Project Information**

|  |  |   |
|--|--|---|
| <b>Project Name</b><br>TTSE DTS Upgrade Project – Phase 2  | <b>Owning Department</b><br>Operation Training   | <b>Member-Facing/Impacting?</b><br>No   |
| <b>Status</b><br><span style="background-color: green; color: black;">GREEN</span><br><b>Phase I (2016)</b> <ul style="list-style-type: none"> <li>Completed in 2016</li> </ul> <b>Phase II (2017-2019)</b> <p><b>Part A</b> - IT will work on applying Markets to DTS after MOS 1.24 has completed lower environment testing</p> <p><b>Part B</b> - An Impact Assessment was requested from GE. A face-to-face meeting with GE has been scheduled for 11/02 to discuss the impact assessment requested. The work is scheduled to be pushed back to 2019</p> <b>Phase III (2018)</b> <ul style="list-style-type: none"> <li>Not started; planned to kick-off in 2018</li> </ul>                  | <b>Project Phase</b><br>Executing  |   |
| <b>Project Description:</b><br><br>Phased approach to develop a more realistic simulator environment dedicated to SPP Operations Training<br><br>The current Dispatcher Training Simulator (DTS) does not perform as realistically as it could, has limited availability to the Operations Analysis and Performance Support (OAPS) Department and does not meet the current needs of SPP Operators due to the additional role of the BA function.<br><br>Creating a second DTS Environment to be used exclusively by OAPS for internal training. Enhancing the current DTS, as well as incorporating market system, to create a TTSE that performs more closely to Real-Time Production Systems. | <b>Total Budget</b><br>\$1,069,960<br><br>Phase I: \$368,660 (2016)<br><br>Phase II: \$514,050 (2017) – Will not use the full budgeted amount<br><br>Phase III: \$187,250 (2018) | <b>Budget Spent to Date</b><br>Capital: \$159,885<br>Non-Capital (O&M): \$0<br><br><b>Total Spent to Date</b><br>\$159,885<br><br><b>Remaining Estimated Cost to Complete</b><br>\$354,165<br><br><b>Estimated Cost at Completion:</b><br>\$1,069,960 |
| <b>Remaining Milestones</b><br>02/10/18: Phase IIA – DTS Markets<br>Hardware/Software Build Complete   | <b>Scope Changes</b><br>None as of 10/19/17  |   |



## SPP Member-Facing Member-Impacting Portfolio Report Summary

| REVISION REQUESTS               | CURRENT QUARTER | PREVIOUS QUARTER | CHANGE    |
|---------------------------------|-----------------|------------------|-----------|
| In Flight/Current Release       | 2               | 4                | -2        |
| Pending                         | 15              | 16               | -1        |
| Estimated Cost of Pending Items | \$1,375,422     | \$920,822        | \$454,600 |

| ENHANCEMENT REQUESTS            | CURRENT QUARTER | PREVIOUS QUARTER | CHANGE     |
|---------------------------------|-----------------|------------------|------------|
| In Flight/Current Release       | 10              | 17               | -7         |
| Pending                         | 82              | 80               | 2          |
| Estimated Cost of Pending Items | \$2,640,000     | \$2,810,000      | -\$170,000 |

| PROJECTS                        | CURRENT QUARTER | PREVIOUS QUARTER | CHANGE |
|---------------------------------|-----------------|------------------|--------|
| In Flight/Current Release       | 20              | 21               | -1     |
| Pending                         | 2               | 2                | 0      |
| Estimated Cost of Pending Items | \$1,326,996     | \$1,326,996      | \$0    |

### Notes and Qualifications

- This list is not all inclusive of all SPP planned Revision Requests, enhancement requests or portfolio projects. Specific criteria was used for this report to only include MI and MF items, RRs with system or process changes and large technology projects.
- For any item in flight or in a current release, the cost estimates are not included.
- For any project or RR, any cost estimates given are the internal impact assessment provided (which includes SPP resource estimates as well as external costs).
- For enhancements, any cost estimates given are a high-level estimate in a dollar range and include internal costs.

- Items shaded in blue in the enhancements requests section indicate items that are new since the last quarterly report was published.

## Revision Requests - Open

| RR#              | RR Name   | Primary Working Group | Cost Estimate   |
|------------------|---|-----------------------|-----------------|
| RR0082           | Modification of Make-Whole Payment Grace Period                   | MWG                   | Current Release |
| RR0113           | Node Connectivity Requirement Enhancement                         | ORWG                  | \$10k - 25k     |
| RR0125           | Removal of Day-Ahead Limited Must-Offer                           | MWG                   | N/A             |
| RR0137,          | Quick-Start Appendix G and ECC Clean-up                           | MWG                   | \$10k - 25k     |
| RR0162           | PMU for New Generator Interconnections                            | RTWG                  | N/A             |
| RR0168           | Short-Term Emergency Rating                                       | ORWG                  | N/A             |
| RR0187           | Planning Reserve Margin   | RTWG                  | N/A             |
| RR0200<br>RR0235 | Design Change for BSS and OCL Distribution<br>Correction to RR200 | MWG                   | \$75k-100k      |
| RR0203           | Adding Second Step to Monthly ARR Allocation                      | MWG                   | \$375k - 400k   |
| RR0210           | Contingency Reserve Deployment Tests                              | MWG                   | \$100K          |
| RR0214           | Cost Plus Ten Percent Mitigation Enhancement                      | MWG                   | TBD             |

## Open Enhancements - All

| Enhancement Description  | Priority Grouping | Level of Complexity | Cost Estimate | Requesting Party |
|--|-------------------|---------------------|---------------|------------------|
| Enhancement Request: OASIS is fundamental to SPP services and its customers. This clean-up effort would improve the engagement SPP customers, members, market participants, and stakeholders have with the SPP OASIS site. Information on SPP's operational services would be more transparent and I suspect a lot of time would be saved for everyone engaging with the site. Customers would be able to find current information instead of sorting through the various folders, many of which are outdated, on the SPP OASIS. | Unplanned C       | Medium              | \$10k - 25k   |                  |
| Enable MPs to view their Credit Limit Report from the Portal <=7days before their effective date.  | Release +1        | Medium              | \$25k - 50k   | SPP              |
| Provide API for checking Credit Limit Information as an alternative to the Portal Web page   | Release +1        | Medium              | \$10k - 25k   |                  |
| Registered Entities request the ability to upload/download data to the new RAW workbook database via API   | Unplanned C       | High                | \$50k - 100k  | Tenaska          |
| The PPOR Heat Rate curve graph in the MMDD tool is not large enough to show a MW range that is useful for polynomial curves. The size of the graph needs to be increased to provide meaningful value.  | Unplanned C       | High                | Over \$100k   | SPP              |
| The MMDD tool should allow multiple submissions of OCC data up until the deadline just like the market systems which allows corrections and changes to be made until the market closes. At midnight the OCC should take the latest submitted values to use in its calculations.  | Unplanned C       | Unknown             | Over \$100k   | AEP              |
| Create a read-only user role in the MMDD tool.   | Unplanned C       | High                | Over \$100k   | AEP              |
| Settlements & MMU received a request from an MP to breakdown the Day-Ahead Must Offer penalty by Settlement Location.  | Unplanned C       | Low                 | Up to \$10k   |                  |

## Open Enhancements - All

| Enhancement Description  | Priority Grouping | Level of Complexity | Cost Estimate | Requesting Party                          |
|--|-------------------|---------------------|---------------|---|
| <p>Programmatic interface to alert members of Repricing Notifications. This would be in lue of the email currently sent out and would be fashioned after the notifications for Settlement Statement publications.</p> <p>Specifically, the intent of the enhancement is to create the following:</p> <ol style="list-style-type: none"> <li>1. A web service that sends a notification to Market Participant listeners to notify that the repricing data is ready</li> <li>2. A web service to accept requests and return repricing data to Market Participants</li> </ol> | Unplanned C       | High                | Up to \$10k   | MCG Energy Solutions                      |
| Expand SPP posting of EMS cases to include 4 cases instead of a single 17:00 case  | Current Release   | Low                 | Up to \$10k   | Westar Energy                             |
| We would like to propose to SPP to provide on a monthly basis a summary file that contains terminated facilities, newly in-service facilities, and facility changes (such as line ratings or impedances).  | Unplanned A       | Low                 | Up to \$10k   | AEPM                                      |
| SPP Price Contour Map (Mobile Version)   | Unplanned A       | High                | \$10k - 25k   | OG&E                                      |
| Regional Icing Forecast (blast notification if impact to VER > 10%)  | Unplanned A       | Low                 | Up to \$10k   | OG&E                                      |
| Annual Public Data Files Zip and Archival  | Unplanned A       | Low                 | Up to \$10k   | SPP                                       |
| <p>Summary: Add indicator to Emergency Limit notifications, API operations and UI displays to specify whether the minimum or maximum limit will be exercised.</p> <p>Requires MP Code Changes: Yes. Participants using the EnergyService API and/or EnergyNotifyService XML Notification service will be required to make code changes.</p>  | Release +2        | High                | \$25k - 50k   | Southwestern Public Service Company (SPS) |

## Open Enhancements - All

| Enhancement Description  | Priority Grouping | Level of Complexity | Cost Estimate | Requesting Party                  |
|--|-------------------|---------------------|---------------|-----------------------------------|
| <p>Summary: Create a new XML notification to inform participants their Virtual Bids or Offers have been deleted from the Markets system as the result of Credit Default or Market Monitoring Virtual Block event.</p> <p>Requires MP Code Changes: No. This would be a new, optional Notification that will not require MP code changes.</p> | Release +2        | Medium              | \$10k - 25k   | SPP                               |
| <p>Summary: In the Markets UI, provide members with a visual timeline of their commitments.</p> <p>Requires MP Code Changes: No.</p>   | Release +2        | High                | \$25k - 50k   | SPP                               |
| <p>Summary: Add ConstraintType and ContingentFacility to the Binding Limits APIs and Markets UI screens to have it match public data.</p> <p>Requires MP Code Changes: Yes. Participants using the MarketService and MarketNotifyService will be required to make code changes.</p>  | Release +2        | High                | \$25k - 50k   | Tenaska Power Services Co. (TNSK) |
| <p>Summary: Create a Markets UI display and API operation to show SPP defined non-cost resource mitigation parameters in hourly intervals.</p> <p>Requires MP Code Changes: Yes. Participants using the EnergyService API will be required to make code changes.</p>   | Release +2        | Medium              | \$10k - 25k   | SPP                               |
| <p>Summary: XML Download (Reports) functionality in the Markets UI needs to support both CSV and XML formats. Currently, the UI only supports XML file format.</p> <p>Requires MP Code Changes: No.</p>  | Release +2        | Medium              | \$10k - 25k   | SPP                               |

## Open Enhancements - All

| Enhancement Description   | Priority Grouping | Level of Complexity | Cost Estimate | Requesting Party                          |
|---|-------------------|---------------------|---------------|---|
| <p>Summary: Enhance Markets UI to allow right click feature to view or edit</p> <p>Requires MP Code Changes: No.</p>  | Release +2        | Medium              | \$10k - 25k   | Southwestern Public Service Company (SPS) |
| A member requested that historical Markets data be available for more than 7 days via the Market UI/API.  | Unplanned A       | Low                 | \$25k - 50k   | CRGL                                      |
| The following request was made by a participant in regards to freezing the hours column so when a user has to scroll to the right the hours column will continue to display on the screen. Freezing the hours column would allow all fields on the Resource Offers tab display what hour is being viewed or edited. | Unplanned A       | Low                 | \$10k - 25k   | Carrie Dixon - SPSM                       |
| Currently, the OperatingDay parameter to GetTransactionSummarySetByDay filters on the day the transaction was submitted, not the market day of the transaction. The market day of the transaction would be a much more useful parameter.  | Unplanned C       | Low                 | \$10k - 25k   |   |
| Currently the markets notifications configuration is set to support TLS1.0. A request has been made to upgrade the servers to support TLS 1.2. When updating the configuration to support TLS 1.2 backwards compatibility is expected to continue to support TLS 1.0.   | Unplanned C       | Low                 | Up to \$10k   | EXGN Chirag Thaker                        |
| <p>Summary: Clearly highlight the type of Market case (RTBM, DA, or Mitigation) for which the Market Participant is entering offer curve data so as to be readily visible to the user.</p> <p>Requires MP Code Changes: No.</p> <p>Priority changed to Unplanned C on 03/25/2016 based on SPQM discussion</p>       | Unplanned C       | Medium              | \$10k - 25k   | Google Energy, LLC                        |



## Open Enhancements - All

| Enhancement Description   | Priority Grouping | Level of Complexity | Cost Estimate | Requesting Party                                 |
|---|-------------------|---------------------|---------------|--|
| <p>Summary: Allow users to submit, delete and query Virtual Bids/Offer within the same API operation. Today, participants must submit, delete and query Virtual Bids separately from Virtual Offers.</p> <p>Requires MP Code Changes: No. This change would result in new, optional API operations which would not require MPs to make code changes.</p>                  | Unplanned C       | High                | \$25k - 50k   | XO Energy SW, LP (XOSW)                          |
| <p>Summary: Create a Markets UI display and API operations to show the total output (Energy+Reg Up/Down+Spin/Supp) of a generation plant.</p> <p>Requires MP Code Changes: No. The new API operations would be added as optional which would not require participant code changes.</p>  | Unplanned C       | High                | \$10k - 25k   | Arkansas Electric Cooperative Corporation (AECC) |
| <p>Summary: Provide UI page and API operations to retrieve historical Reserve Cap notifications. The goal is to allow participants to review the stream of notifications that may have been delivered in the past.</p> <p>Requires MP Code Changes: No. The new API operations would be optional operations which would not require participant system modifications.</p> | Unplanned C       | High                | \$10k - 25k   | SPP  |
| <p>Summary: Add a Markets UI page and API operation to show total Real-Time LMP per hour.</p> <p>Requires MP Code Changes: No. There would be new, optional API operations added. Participants would not be required to make code changes.</p>  | Unplanned C       | High                | \$10k - 25k   | Arkansas Electric Cooperative Corporation (AECC) |

## Open Enhancements - All

| Enhancement Description  | Priority Grouping | Level of Complexity | Cost Estimate | Requesting Party                       |
|--|-------------------|---------------------|---------------|--|
| 1. Change the Max Daily Starts and Max Weekly Starts MCR Offer parameters to only count a start each time a configuration moves from a lower state (e.g. offline, 1X1) to a higher state (e.g. 2X1). This enhancement will prevent the unnecessary counting of transitions that currently exist with counting starts for bi-directional transitions.   | Release +1        | High                | \$10k - 25k   | OGE -Shawn McBroom                     |
| This change is proposed to enable the Market to handle unit/load contingency constraints in a more accurate manner. The primary member impact will be that if a unit or load is expected to be disconnected during the contingency of the flowgate (based on flowgate definition/modeling), then it will no longer receive a Marginal Congestion Component added to their LMP for that flowgate. | Release +2        | Medium              | \$25k - 50k   | SPP                                    |
| Ability to download a node MW size similar to what CAISO publishes on their PNode Listing report on their OASIS  | Unplanned A       | Low                 | Up to \$10k   | Anthony.Nairns - denverenergygroup.com |
| Predictive LMP forecast in a 55 minute forward look  | Unplanned A       | Low                 | Up to \$10k   | Shawn McBroom - OGE                    |
| Update the "External LSA Role Request" screen so that an LSA is allowed to make an "LSA-to-LSA" request to other entity types for which they are not an LSA. For example, Market Participant LSAs would be allowed to request roles from Transmission Owner type companies. Currently, LSAs can only make this type of request within entity types for which they are the LSA.                   | Release +1        | Medium              | Up to \$10k   | Don Martin                             |
| Update verbiage to be used when generating or removing an API key.   | Current Release   | Low                 | Up to \$10k   | SPP Internal                           |
| On the Manage Users screen, add a new column titled API which would have a key icon in it if the user had an API key generated. Currently there is no way at all to tell what user, if any has an API key generated.   | Current Release   | Low                 | Up to \$10k   | AECC                                   |

## Open Enhancements - All

| Enhancement Description  | Priority Grouping | Level of Complexity | Cost Estimate | Requesting Party |
|--|-------------------|---------------------|---------------|------------------|
| On the Manage Users screen, add an option to 'Copy API Key' in the drop down to make it one less click to have to go into the user and then copy the API key.  | Current Release   | Low                 | Up to \$10k   | AECC             |
| On the Manage Users screen, don't have the option to 'Delete API Key' if there is not an API key generated for a user.   | Current Release   | Low                 | Up to \$10k   | AECC             |
| FileSystemBrowser in the matrix view the file icons and font are bigger than in the list view, can we make them smaller like the list view so we can see more of the file name.  | Release +2        | Low                 | Up to \$10k   | SPP Internal     |
| When selecting a role in a drop down, default to the first option in the next drop down if there is only one item in the drop down. For example, currently we will only ever have one option in the third drop down but I have to click in that drop down to select it every time. | Unplanned C       | Low                 | Up to \$10k   | AECC             |
| Allow members to be able to export Certs and Roles from PROD and import into MTE.  | Unplanned C       | Medium              | \$25k - 50k   | AECC             |
| Westar requests an SPP modeling enhancement to either make CROW line/xfmr names consistent with EMS/TCR comment names for line/xfmrs or vice versa. The line/xfmrs names need to be the consistent between CROW and EMS/TCR .raw comment names.                                    | Unplanned C       | Low                 | Up to \$10k   | WRGS             |
| Would it be possible to automatically export the equipment (lines and transformer) to a file on a regular basis (1 time a week)? There is a need to post this info on a FTP site.  | Unplanned C       | Unknown             | Up to \$10k   | AEP              |
| Keep the lower environments of CROW more in line with PROD as far as equipment that is available to submit outages for   | Unplanned C       | Low                 | Up to \$10k   | KCPL             |
| In an effort increase security around member-facing systems, SPP is implementing 2-factor authentication. This will involve the use of a username and password in addition to the OATI digital certificate to access the Ratings Submission Tool (and most other SPP systems).     | Release +2        | Medium              | Up to \$10k   |                  |

## Open Enhancements - All

| Enhancement Description  | Priority Grouping | Level of Complexity | Cost Estimate | Requesting Party |
|--|-------------------|---------------------|---------------|------------------|
| Market Participant has requested an enhancement to add a drop-down list for all "location" and buyer + seller" fields in the SPP Portal. Currently, If "Location" or acronym of "Buyer" or "Seller" is not known or misspelled, then "error" will populate when trying to enter a new contract or filter by particular location or company abbreviation. This goes for any tab in the SPP portal.  | Unplanned C       | Low                 | Up to \$10k   | TEA              |
| Market Participant has requested an enhancement to move the "Submit Profile Data" button on the Home tab to another location on the screen. Currently, it is placed between the "Deny Contract" and "End Contract" buttons. This has caused a few unexpected accidentals. When you accidentally hit the "Deny Contracts" button an error is thrown; however, when the "End Contract" button is accidentally hit, there is no precautionary warning to populate, where the end result will create the contract highlighted to "end" as of the current date. | Unplanned C       | Low                 | Up to \$10k   | TEA              |
| Market Participant has requested an enhancement to filter by a date range on the Home, Profile Approval and Reporting Tabs in the BSS UI. Currently, you are only able to filter by a single operating day. MP would like to have the option to filter by single and/or multiple days, as well as filter up to a monthly date range.   | Unplanned C       | Low                 | Up to \$10k   | TEA              |
| Market Participant has requested an enhancement to filter by Asset Owner/Company on the Home, Profile Approval and Reporting tabs without being required to indicate buyer or seller information.  | Unplanned C       | Low                 | Up to \$10k   | TEA              |
| Market Participant has requested an enhancement to allow the user to shift columns around in the tabs per the users wants/needs and have the option to lock to keep the screen in its place based on customization.  | Unplanned C       | High                | \$25k - 50k   | TEA              |

## Open Enhancements - All

| Enhancement Description   | Priority Grouping | Level of Complexity | Cost Estimate | Requesting Party |
|---|-------------------|---------------------|---------------|------------------|
| Market Participant has requested an enhancement to the BSS UI to display the end date of a contract to be displayed instead of the following date being displayed as “end date”.<br>Impact to MP: This change would eliminate any room for confusion and save time for the end user.  | Unplanned C       | Low                 | Up to \$10k   | TEA              |
| Market Participant has requested an enhancement to the BSS UI Reporting Tab to display the option of hour ending interval instead of the current AM/PM that is currently displayed on this screen. The tabs in the BSS UI need to be consistent as the Profile Approval Screen and the extraction of data out of the Reporting tab show the hour ending as an interval.   | Unplanned C       | Low                 | Up to \$10k   | TEA              |
| Enhancement to provide a new MA Interchange Report with additional details. The report will have the hourly information at a high level with the option to drill down into a 5 minute level.  | Unplanned C       | Medium              | \$10k - 25k   | SPP              |
| Enhance the current Meter Agent Report Card to work similar to the MP Meter Report to improve performance and usability for the MPs.  | Unplanned C       | Low                 | \$10k - 25k   | SPP              |
| Request to update the meter status field whenever the meter file is picked up and processed. Currently, this status is set upon upload of data and is never updated to reflect current status as the settlement system picks them up for processing. Not having this field updated not only makes it confusing (appears that the meter file was not picked up for the final), but makes this field useless to the end user. | Unplanned C       | Low                 | Up to \$10k   | MECB             |
| Add the ability to the GUI for processing Meter Requests within Soap Envelopes. This would allow the same file to be processed both via API or GUI without any changes. Currently, API requires the envelope and Portal requires it NOT be there. It would be much simpler if the same format could be used for both.   | Unplanned C       | Low                 | Up to \$10k   | SPS              |

## Open Enhancements - All

| Enhancement Description  | Priority Grouping | Level of Complexity | Cost Estimate | Requesting Party |
|--|-------------------|---------------------|---------------|------------------|
| MP request to display summarized data at the hourly interval in the Meter Agent Report Card. Currently, only a detailed display is available.  | Unplanned C       | Medium              | \$25k - 50k   | GRDA             |
| MP request to add a filter for Meter Locations based on the Meter Agent/MP logged into the Portal. Currently, ALL meter locations for a Meter Agent are displayed and some have around 100.  | Unplanned C       | Medium              | \$25k - 50k   | GRDA             |
| Create a report that summarizes the submitted data and indicates when meter data has not been submitted. This report needs to be available to both a Meter Agent Level Role and also a MP/AO Level Role.   | Unplanned C       | Medium              | \$25k - 50k   | Westar Energy    |
| Members have requested the ability to know when the last time an OD has been updated for meter processing via the portal. Since the meter process runs every 30 - 60 - minutes, we are requesting that the report show the last time the meter file has processed for that given day to display on report output and if window is open/closed. | Unplanned C       | Low                 | Up to \$10k   | WFEC             |

## Open Enhancements - All

| Enhancement Description   | Priority Grouping | Level of Complexity | Cost Estimate | Requesting Party |
|---|-------------------|---------------------|---------------|------------------|
| <p>The transmission settlements (and MVAR upload) still resides in the COS portal. MP would like for API functionality to be added for transmission settlements. Also, we would like to have the ability to assign multiple functions to one certificate (like the current IM; "SPP model" per Annette Holbert).</p> <p>API functions for:<br/>           Transmission Owner/Customer settlement statements<br/>           - XML<br/>           - Daily PTP<br/>           - Monthly NITS<br/>           - Schedule 2</p> <p>MVARHr, NITS/CP, Direct Assignment, and Schedule 12 file submissions</p> <p>XML Inputs - Network billing inputs designed to dictate monthly settlement which includes DA, NITS, S12 load designations per specific TSR and / or customer.</p> <p>Prior Year Coincident Peak - Prior Year monthly assessment and net energy load per zone (Schedule 11)</p> <p>Coincident Peak &amp; Prior Year Coincident Peak - Prior Year zonal load for SCH9</p> <p>MVAR Data - Megavahr data for Schedule 2 (reactive compensation)</p> <p>Zone 19 XML Inputs - Network billing inputs designed to dictate</p> | Unplanned C       | Medium              | \$50k - 100k  | WFEC             |

## Open Enhancements - All

| Enhancement Description   | Priority Grouping | Level of Complexity | Cost Estimate | Requesting Party          |
|---|-------------------|---------------------|---------------|---------------------------|
| <p>Market Participant Vendor request to make Settlements notifications smart enough to know when there are multiple runs required for the OD, and only send 1 notification on all associated runs that are posted.</p> <p>This request has been added as a Requirement to be delivered with the new Settlements Management System.</p>  | Unplanned C       | Medium              | \$25k - 50k   | MCG Energy Solutions      |
| <p>Settlements notifications are currently the only type of notification from the Marketplace systems that don't include a MP/AO name in the actual message XML. All other notifications that we are aware of have the MP/AO name in the message. For consistency purposes and to make sure that all messages from SPP contain all the information they need for their context, we would like the MP/AO identifier to be added to the Settlements Notification XSD and messages, rather than leaving it to the vendor/MP's system to add that information as metadata when the messages are persisted on our side</p> | Unplanned A       | Low                 | Up to \$10k   | Tenaska                   |
| <p>The settlement notifications being delivered to the MP's include the settlement type. This causes multiple notifications to be issued at the same time. One for Initial, one for Final, and one for each resettlement.</p> <p>As a consequence, processes that automatically download statements when a notification is received are repeatedly downloading the data.</p> <p>We need a single notification to the MP's when the statement is ready.</p> <p>This request has been added as a Requirement to be delivered with the new Settlements Management System.</p>  | Unplanned C       | Medium              | \$25k - 50k   | PCI, MCG Energy Solutions |



## Open Enhancements - All

| Enhancement Description  | Priority Grouping | Level of Complexity | Cost Estimate | Requesting Party |
|--|-------------------|---------------------|---------------|------------------|
| <p>Would it be possible to provide the IM settlements calendar in XML format? Our meter submission is automatic and being able to import the "due dates" to compare against would be very handy, especially during the holiday adjusted schedules. I'm doing this with the Excel version, but due to the nature of Excel, it's a semi-manual process."</p> <p>This request has been added as a Requirement to be delivered with the new Settlements Management System.</p> | Unplanned C       | High                | \$50k - 100k  | WFEC             |
| <p>Market Participant has requested an update to the Settlement Calendar to include a reason for resettlements. It was also suggested that a business aid be created to include a master list of resettlements and a reason for the resettlement.</p> <p>This request has been added as a Requirement to be delivered with the new Settlements Management System.</p>  | Other             | Unknown             |               |                  |
| <p>Member requested enhancement to the existing ARRTCR public report to be updated to include a tab for hourly data. Currently, only daily values are provided in this report.</p>   | Release +2        | Medium              | \$10k - 25k   | AECC             |
| <p>A report to provide the Market Participants the costs allocated to the market caused by the GFA Carve Outs and the hourly/monthly deviations associated with the GFA Carve Out Schedules'</p>   | Unplanned C       | Low                 | \$10k - 25k   | SPP              |
| <p>The invoice is created by Market Participant and if that MP has more than one Asset Owner there are currently no subtotals by Asset Owner. There is only a Grand Total for the MP. We have to provide these invoice to auditors and regulatory bodies and they would really like to see a subtotal by AO so they don't have to manually add up all the lines to come up with one. We would like that too!</p>   | Unplanned B       | Medium              | \$10k - 25k   | KCPL             |

## Open Enhancements - All

| Enhancement Description   | Priority Grouping | Level of Complexity | Cost Estimate | Requesting Party             |
|---|-------------------|---------------------|---------------|------------------------------|
| <p>MP requested enhancement to provide a method for MPs to retrieve the weekly invoices in PDF format programmatically. Currently, only the XML version of the invoice is available via the API.</p>  | Unplanned C       | Medium              | \$25k - 50k   | Freepoint Commodities (FRPT) |
| <p>MP requesting the following data be added to the EQR reports.<br/>                     FERC Tariff reference;<br/>                     Contract service agreement;<br/>                     Transaction unique identifier;<br/>                     Type of rate;<br/>                     Term name;<br/>                     Increment name;<br/>                     Increment Peaking name;<br/>                     Product name;<br/>                     Transaction quantity;<br/>                     Transaction price;<br/>                     Product name;</p> <p>Combined 03-949 with this ticket as the requests were duplicates. 03-949 requested all of the data required by FERC to be included on the EQR report.</p> <p>Internal Design Discussions have started with requirements from the EQR Task Force, however this has not been assigned a release yet.</p> | Current Release   | High                | \$50k - 100k  | HQ Energy Services           |

## Open Enhancements - All

| Enhancement Description   | Priority Grouping | Level of Complexity | Cost Estimate | Requesting Party |
|---|-------------------|---------------------|---------------|------------------|
| <p>Member has requested an enhancement to the market invoices: They would like to see on the invoice the energy Quantity with the charges on the Settlement statements.</p> <p>We have reviewed this enhancement request and it has been determined that this level of detail will not be provided on the invoice. The invoices are meant to document the amount being billed for each type of service (or charge type) per settlement day, but they are not meant to provide the level of data required to validate those amounts. That is the purpose of the determinant reports which are posted daily per operating day. The determinant reports provide the amount to be invoiced in addition to the values required to arrive at those invoice amounts. We recommend this item for closure.</p> | Other             | Unknown             |               | NPPD             |
| <p>Market Participant requested the ability for the Settlement Reports - View Settlement Statements role to be specified at the Asset Owner level, as opposed to only the Market Participant level.</p> <p>Priority Grouping of O-Other: Need further explanation of the benefits of this request. This data is already available to AOs in the determinant report. Settlements reaching out to MP to show where this data can be found.</p> <p>Per SPQM 03-25-16, move to Unplanned C if approved by the SUG.<br/>09/12/16: Per multiple MP requests, moved to Unplanned A.</p>  | Release +2        | Medium              | \$10k - 25k   | Tenaska, TEA     |
| <p>The Public Downloads Source sink file truncates participation factors to two decimal places. This report needs to display up to 10 digits after decimal.</p>   | Current Release   | Low                 | Up to \$10k   | KCPL             |

## Open Enhancements - All

| Enhancement Description | Priority Grouping | Level of Complexity | Cost Estimate | Requesting Party |
|-------------------------|-------------------|---------------------|---------------|------------------|
|-------------------------|-------------------|---------------------|---------------|------------------|

**Legend:**

Blue: Items which were not listed on the last Quarterly Portfolio Report

## Projects

| Project Name                                  | Project Description   | Cost Estimate | Targeted Implementation Date |
|---|---|---------------|------------------------------|
| Market Monitoring Portal                      | The MMDD and OCC systems must be replaced using a different vendor.   | In flight     | 11/09/17                     |
| Enhanced Public Data                          | Make the data currently posted on the public portal more accessible and usable by the Market Participants. This project is also intended to make the public data portal more robust including improved interaction, visualization, filtering, mobile displays, etc. | In flight     | 12/31/19                     |
| Freeze Date Replacement Allocation Calculator |   | In flight     | 12/31/18                     |
| Coordinated Transaction Scheduling            | This project includes implementing a process to provide look ahead pricing across the interface , reviewing and submitting necessary changes to SPPs current scheduling practices, and designing and implementing the Coordinated Transaction Schedule process.     | In flight     | 12/31/18                     |
| 2.10 TCR Release                              | This release will address several enhancements and defects.   | In flight     | 09/05/17                     |
| 2.11 TCR Release                              | This release will address several enhancements and defects.   | In flight     | 01/04/18                     |
| 3.12.0 CMS Release                            | This release will address several enhancements and defects.   | In flight     | 08/31/17                     |
| 3.13.0 CMS Release                            | This release will address several enhancements and defects.   | In flight     | 01/11/18                     |
| Markets Release 1.23                          | Markets Release 1.23 – MP IMPACTING – Yes<br>Other SPRs as identified and prioritized   | In flight     | 12/01/17                     |
| Upgrade Software Code on NAS Storage          | The current NAS storage must be upgraded to a new code level.   | In flight     | 12/15/17                     |
| Market Settlements Release 2.12               | This release includes RR200 as well as modifications to both the TCR ARR Report and Settlement Statements (rolled up at AO level).  | In flight     | 12/07/17                     |
| SPP.org Migration of Support and Maintenance  | Plan to move all components of SPP.org from Aristotle to SPP to enhance Member experience   | In flight     | 04/30/18                     |
| Market Settlements 2.11                       |   | In flight     | 09/14/17                     |
| Transmission Settlements 1.7                  |   | In flight     | 11/16/17                     |

## Projects

| Project Name                       | Project Description   | Cost Estimate | Targeted Implementation Date |
|------------------------------------|---|---------------|------------------------------|
| TTSE Dispatcher Training Simulator | <p>Phased approach to develop a more realistic simulator environment dedicated to SPP Operations Training</p> <p>The current Dispatcher Training Simulator (DTS) does not perform as realistically as it could, has limited availability to the Operations Analysis and Performance Support (OAPS) Department and does not meet the current needs of SPP Operators due to the additional role of the BA function.</p> <p>Creating a second DTS Environment to be used exclusively by OAPS for internal training. Enhancing the current DTS, as well as incorporating market system, to create a TTSE that performs more closely to Real-Time Production Systems.</p>  | In flight     | 12/31/18                     |
| 2-Factor Authentication            | <p>The Marketplace UIs and APIs use certificate based single factor of authentication mechanism. This project proposes adding a 2nd factor of authentication (like password) to the authentication process. While there is no 100% security, the 2-factor authentication will lower the Marketplace UI and API security vulnerability and reduce the risk to the Marketplace systems. Most of the other ISOs use 2-factor authentication with their UIs and APIs.</p>   | In flight     | 12/18/17                     |
| PMU Data Exchange Phase I          | <p>SPP has a need to install the applicable components for SynchroPhasor (aka Phasor Measurement Unit PMU) data exchange and analytics. PMU devices can capture voltage, frequency, current, and angle for the 3 phases at a substation as fast as 60 measurements a second. This granularity of data is expected to greatly enhance our after-the-fact event analysis as well as model validation efforts. Along with event analysis, the data will assist in our real-time situational awareness. While the data can aid in identifying generator trips and island situations, it can also aid in improving our State Estimator accuracy. This aligns with the Operations strategic plan to expand our operations capabilities in the dynamic evaluation of the real-time operations.</p> | In flight     | 12/29/17                     |

## Projects

| Project Name                   | Project Description   | Cost Estimate | Targeted Implementation Date |
|--------------------------------|---|---------------|------------------------------|
| Marketplace Portal Redesign    | Eliminate the use of Liferay as the Marketplace Portal. Develop an in-house alternative solution, eliminating maintenance and support costs associated with Liferay                     | In flight     | 8/22/17                      |
| Settlement Systems Replacement | This project will replace the current market and transmission settlement systems with a custom designed single high performance scalable system solution.                               | In flight     | 5/1/19                       |
| Day Ahead FFE Exchange         | Design and Implement a DA FFE exchange mechanism  | \$344,004     | 12/31/18                     |
| Engineering Hub                | This project proposes implementation of an automated Engineering Hub to allow entry of Model Development and Resource Adequacy data through a web-based graphical user Interface (GUI). | In flight     | 12/15/17                     |

## How to Read this Report

The SPP Portfolio Report, published quarterly, is a report reflecting the latest available inventory of revision requests, enhancements, defects and projects that are subject to prioritization. Each of these areas are reported on a tab within the report.

**Revision Requests:** Revisions Requests (RRs) are requests to make additions, edits, deletions, revisions or clarifications to the SPP Market Protocols, SPP Business Practices, SPP Criteria, or SPP Open Access Transmission Tariff, except for Appendix F of the Market Protocols. The Portfolio Report includes all system and/or process-impacting revision requests which have been approved by the primary working group and are not yet implemented. The report does not include those RRs which are postponed, held, rejected, withdrawn, or other status which is not subject to prioritization. A complete list of RRs regardless of status is available on SPP.org here:

[SPP Revision Requests - RR Master List](#)

**Enhancements:** The items on the Enhancement tabs are requests for new or changed system functionality that do not require updates to SPP Market Protocols, SPP Business Practices, SPP Criteria, or SPP Open Access Transmission Tariff. The tab marked “**Open Enhancements-New**” reflects any enhancements that have been requested since the last quarterly report was published. The tab marked “**Open Enhancements-All**” includes both the new enhancement requests and the enhancements that were existing on the last quarterly report.

**Defects:** A defect is a deviation between the expected and actual results of a system component, service component, or approved artifact. The SPP Portfolio Report includes both stakeholder and staff-reported member-facing and member-impacting defects.

**Projects:** The items on this tab are a list of active and planned projects that are Member-facing, Member-Impacting or Major Technology projects.

### **Summary**

Items included in the SPP Portfolio Report are evaluated with consideration for several key factors. For Revision Requests and Enhancements, the “Priority Grouping” for an item (defined below), is determined based on Cost Estimates, Level of Complexity and Severity. Other factors including resource availability, Tariff/FERC status, other areas impacted, and correlation to other work may be considered in prioritization. For Projects, prioritization is reflected via “Priority”. The priority of a project is similarly determined based on factors such as a score calculated using the SPP Scoring Tool and a cost estimate. And as with other items, other factors may be considered in prioritization. For more information on the Stakeholder Prioritization process and quarterly meeting process, please see the SPP Stakeholder Prioritization Process document located in the Stakeholder Center of SPP.org.

[SPP Stakeholder Prioritization Process Document](#)

## How to Submit a Comment

Comments may be submitted for any: **Revision Request, Enhancement or Project**

To submit comments on Projects, Enhancements, RRs, please use RMS with the “Quarterly Stakeholder Prioritization Feedback” Quick Pick.

[SPP's Request management System](#)

## Glossary

**Revision Requests Report**



| Column Header                         | Purpose   | Filter Key Points/Notes   |
|---------------------------------------|---|---|
| RR #                                  | Tracking number assigned for the Revision Request. Each Rr is assigned a unique number by the Primary Working Group staff secretary.  | Use filter to locate revision requests by RR#                   |
| RR Name                               | Revision Request Title  | Use filter to locate revision requests by Title                 |
| Primary Working Group                 | The working group owing overall responsibility for the document impacted by the RR. <ul style="list-style-type: none"> <li>• MWG – Market Protocols</li> <li>• RTWG – Tariff</li> <li>• ORWG – Criteria</li> <li>• BPWG – Business Practices</li> </ul>   | Use filter to locate revision requests by Primary Working Group |
| Priority Grouping                     | Assessment by SPP Staff of the priority group: <ul style="list-style-type: none"> <li>• Current Release – Those items for which system changes or process/procedure changes are in progress. The in-service date will vary depending on the length of development and implementation effort <ul style="list-style-type: none"> <li>• Release+1 – Items that are planned for inclusion in upcoming release(s). Release+1 may also include items with a longer-term implementation date due to their complexity, which are being worked as a higher priority.</li> </ul> </li> <li>• Release+2 – Items that are planned for inclusion in the next release after Release+1 items.</li> <li>• Unplanned-A, B or C – Items in the queue not yet planned for a specific release. The sub-classification of A, B or C indicates priority within Unplanned, A being the higher, B being middle and C being the lowest priority of the Unplanned items.</li> <li>• Other – Items which a) need clarification, b) need further explanation of the benefits of the request, or c) cannot be placed in the queue for another reason.</li> </ul> | Use to filter by Priority grouping                              |
| Level of Complexity                   | Staff's assessment of how complex the item is to implement, taking all factors into consideration (High, Medium, Low or Unknown)  | Use to filter by Level of Complexity                            |
| Severity (Ranked by Primary WG)       | Defines the criticality, according to a scale. <ul style="list-style-type: none"> <li>• Critical</li> <li>• High</li> <li>• Medium</li> <li>• Low</li> </ul>  | Use to sort by urgency, critical to low or low to critical      |
| Cost Estimate                         | High-level cost estimation of work  | Use filter to locate RR by RR cost estimate                     |
| Targeted Implementation Date          | If known, the date the revision request is expected to be implemented   |   |
| <b>Enhancement and Defect Reports</b> |   |   |
| <b>Column Header</b>                  | <b>Purpose</b>  | <b>Filter Key Points</b>  |

|                                |   |   |
|--------------------------------|---|---|
| Enhancement/Issue ID#          | Tracking number assigned for the enhancement or defect  | Use filter to locate enhancements/defects by IDR#   |
| Primary Functional Area        | SPP Business/System most impacted by the requested enhancement or defect.   | Use to filter by functional area to view issues by SPP business areas and/or major systems.   |
| Component                      | System and/or component of the system affected.   | Use to filter by system component. The Component field may be blank if the solution has not been determined.  |
| Enhancement/Defect Description | Brief description of the enhancement request or defect.   |   |
| Priority Grouping              | <p>Assessment by SPP Staff of the priority group:</p> <ul style="list-style-type: none"> <li>• Current Release – Those items for which system changes or process/procedure changes are in progress. The in-service date will vary depending on the length of development and implementation effort</li> <li>• Release+1 – Items that are planned for inclusion in upcoming release(s). Release+1 may also include items with a longer-term implementation date due to their complexity, which are being worked as a higher priority.</li> <li>• Release+2 – Items that are planned for inclusion in the next release after Release+1 items.</li> <li>• Unplanned-A,B or C – Items in the queue not yet planned for a specific release. The sub-classification of A, B or C indicates priority within Unplanned, A being the higher, B being middle and C being the lowest priority of the Unplanned items.</li> <li>• Other – Items which a) need clarification, b) need further explanation of the benefits of the request, or c) cannot be placed in the queue for another reason.</li> </ul> | Use to filter by Priority grouping  |
| Level of Complexity            | Staff's assessment of how complex the item is to implement, taking all factors into consideration (High, Medium, Low or Unknown)  | Use to filter by Level of Complexity  |
| Severity                       | <p>Defines the criticality, according to the scale.</p> <ul style="list-style-type: none"> <li>• Critical</li> <li>• High</li> <li>• Medium</li> <li>• Low</li> </ul>   | Use to sort by severity, critical to low or low to critical   |
| Cost Estimate                  | High-level estimated cost of work based on internal and external man hours  | Use filter to locate projects by projected cost estimate  |
| Targeted Release ID            | ID associated with the system release, patch, or change that is expected to contain the issue fix.  | Filter by all, omitting "blanks", to view all issues that are expected in a planned (future) release. Blank Release ID fields indicate the issue has not yet been associated with a planned release.      |
| Associated ID                  | Any identifier external to SPP's issue tracking ID, which is the originator of the issue, (e.g. MPRR, MCRR, RMS...).  | Filter to view issues that originated from an RMS inquiry, MPRR, MCRR, etc. Use this filter to view data previously provided on the Revision Requests report by selecting all MPRR options in the filter. |

|                              |   |   |
|------------------------------|---|---|
| Requesting/Identifying Party | Name of company (or companies) submitting the request/identifying the issue.  | Filter to view items based on requesting party.           |
| Issue Description            | Describes the enhancement from the Market Participant's point of view.  |   |
| Date Created                 | Date on which the issue was opened in SPP's issue tracking system.  |   |
| Notes                        | Text field for any additional information about the issue.  |   |
| <b>Project Report</b>        |   |   |
| <b>Column Header</b>         | <b>Purpose</b>  | <b>Filter Options</b>                                     |
| Project Number               | Project ID within the SPP project portfolio for project identification and tracking   | Use filter to locate projects by number                   |
| Project Category             | The type of project (Marketplace systems, Major Membership Expansion, Major Technology, Other)  | Use to filter by project category                         |
| Project Description          | Brief description of the scope of the work in business terms  | Use filter to locate projects by project description/name |
| Status                       | Status of the project, as defined by SPP's PMO: <ul style="list-style-type: none"> <li>• Active: Initiated,</li> <li>• Pending: Awaiting Initiation</li> <li>• Suspended: Put on hold</li> <li>• Closed: Completed/delivered</li> </ul>                                 | Use filter to view projects by status                     |
| Phase                        | Current Phase of project: Example, Planning, Execution, Closing   | Use filter to view projects by project phase              |
| Priority                     | Priority for the project. Initial priority (High, Medium, Low, TBD) set by SPP Staff  | Use filter to sort by priority                            |
| Score                        | Scores are calculated using the SPP Scoring Tool, which considers alignment with foundational strategies and strategic initiatives defined by the 2014 SPP Strategic Plan, as well as operational and technical efficiencies. (Initial priority score set by SPP Staff) | Use filter to locate projects by score                    |
| Cost Estimate                | High-level estimated cost of work based on internal and external man hours, as well as other line item costs  | Use filter to locate projects by projected cost estimate  |
| Targeted Implementation Date | Planned implementation date   | Use filter to locate projects by date range               |

November 1, 2017

| Meeting Date                         | Time   | Location        | Agenda Items / Comments   |
|--------------------------------------|--|-----------------|---|
| January 15, 2018                     | 1:00 p.m. – 5:00 p.m.                          | Oklahoma City   | <ul style="list-style-type: none"> <li>• Preview of materials to be provided to MOPC to establish ongoing performance review process</li> <li>• SSAE – 16 Audit Report</li> <li>• BPI Review</li> <li>• Corporate Insurance Review</li> <li>• Authority Review</li> <li>• Actuary Assumption Review</li> <li>• Investment Policy Statement Review</li> </ul> <p>This meeting would replace meeting currently scheduled for December 4, 2017</p> |
| April 9, 2018                        | 8:00 a.m. – 3:00 p.m.                          | Kansas City, MO | <ul style="list-style-type: none"> <li>• Performance Review</li> <li>• Financial Audit Review</li> <li>• Benefit Plan Funding</li> <li>• Auditor Engagement</li> </ul> <p>This meeting would replace meeting currently scheduled for April 3, 2018</p>  |
| June 12, 2018<br>June 13, 2018       | 2:00 p.m. – 5:00 p.m.<br>8:00 a.m. – 2:00 p.m. | Little Rock     | Training Session  |
| July 16, 2018                        | 10:00 a.m. – 12 noon                           | Omaha           | • Performance Review  |
| July 16, 2018                        | 1:00 p.m. – 5:00 p.m.                          | Omaha           | FC, SPC & MOPC Chairs Meeting   |
| September 25, 2018                   | 8:30 a.m. – 3:00 p.m.                          | Dallas          | • Joint FC / SPC Meeting to review 2019 Operating Plan  |
| October 15, 2018                     | 1:00 p.m. – 5:00 p.m.                          | Little Rock     | <ul style="list-style-type: none"> <li>• Performance Review</li> <li>• Preview of materials for MOPC Presentation of proposed 2018 operating plan / budget</li> <li>• Committee Self-Review</li> </ul>  |
| October 30, 2018<br>October 31, 2018 | 2:30 – 5:00 p.m.<br>8:00 a.m. – 3:00 p.m.      | Little Rock     | • Budget Review   |