

**Southwest Power Pool
FINANCE COMMITTEE MEETING**

September 29, 2015

**DFW Hyatt Regency Hotel
Dallas, TX**

• M I N U T E S •

Administrative Items

SPP Chair Harry Skilton called the meeting to order at 8:30 a.m. The following members of the Finance Committee were in attendance:

Harry Skilton	SPP Director
Larry Altenbaumer	SPP Director
Kelly Harrison	Westar Energy
Sandra Bennett	AEP
Laura Kapustka	Lincoln Electric
Mike Wise	Golden Spread Electric Cooperative
Tom Dunn	SPP

Others attending included:

Traci Bender	NPPD
Jake Langthorn, IV	OGE
Les Evans	Kansas Electric Power Cooperative
Rob Janssen	Dogwood Energy LLC
Dennis Florom	Lincoln Electric
Bill Grant	Xcel Energy
Mike Deggendorf	KCPL
Michael Desselle	SPP
Carl Monroe	SPP
Phyllis Bernard (phone)	SPP Director
Nick Brown (phone)	SPP
Denise Buffington (phone)	KCPL

The meeting was scheduled to provide an opportunity for Finance Committee members to review SPP staff's work on documenting an Operating Plan for 2016. Members of SPP's Strategic Planning Committee were invited to attend so they may be able to share their insights on the alignment of the draft Operating Plan with the 2014 SPP Strategic Plan.

Major discussion topics included:

- Sources of strategic inputs for both the Strategic Plan and the Operating Plan
 - Suggested identifying inputs from regulatory and technology
 - Use of the "Forward Looking Report" received annually by SPP Board
- Status of Strategic Plan Initiatives
 - What can Strategic Planning Committee do to encourage SPP Working Groups to proactively address strategic plan initiatives
 - Should SPP consider a postage stamp rate design
 - Have SPC provide definition of what future state is once strategic initiative is complete
 - Move Critical Infrastructure Protection standard version 5 to an "A" priority
- Operating Plan
 - Finance Committee should review progress quarterly
 - Plan should explicitly state work and/or processes SPP will no longer perform

Finance Committee
September 29, 2015

- Background narrative on SPP's current business environment should be expanded to include discussion of items like; i) membership expansion, ii) maturing market processes, iii) outreach, iv) transmission service process, etc.
- Expand discussion on technology investments; how does SPP identify and implement necessary technology investments
- Linkage of Strategic Plan strategies to Operating Plan initiatives

Future Meetings

The next meeting of the Finance Committee is scheduled for October 27, 2015 as a teleconference beginning at 3pm

There being no further business, Harry Skilton adjourned the meeting at 2:30 pm.

Respectfully Submitted,

Thomas P. Dunn
Secretary

Southwest Power Pool, Inc.
FINANCE COMMITTEE
Pending Action Items Status Report
September 29, 2015

	Action Item	Date Originated	Status	Comments
1.	Establish a scorecard for presentation to MOPC, SPC, and BOD indicating costs associated with member required projects/services.	10/11/2012	incomplete	Absence of member required projects during Integrated Marketplace development and implementation
2.	Develop schedule of items that require Committee approval, items that require Committee monitoring, and items that require Committee input.	12/20/2013	complete	Presented at 7/09/15 meeting
3.	Create comparison of level of financial disclosures contained in RTO annual reports	7/10/2014	complete	Presented at 7/09/15 meeting
4.	Develop schedule for review of annual operating plan	4/2/2015	complete	Presented at 7/09/15 meeting
5.	Update financial models	4/2/2015	complete	Presented at 7/09/15 meeting
6.	Prepare new financial models with different load growth assumptions	7/09/2015	complete	Presented at 7/17/15 meeting
7.	Advise on appropriate metrics for evaluating success of business process improvement program	7/09/2015	incomplete	
8.	Evaluate passive investment management option for post-retirement healthcare fund	7/09/2015	incomplete	
9.	Obtain quarterly written report from investment manager of pension plan	7/09/2015	incomplete	
10.	Add more granularity and detail to future meeting schedule	7/09/2015	incomplete	
11.	Create checklist of committee duties	7/09/2015	incomplete	
12.	Prepare schedule of current year load	7/09/2015	incomplete	
13.	Prepare document outlining capital expenditures and funding options	7/17/2015	New	



**Southwest Power Pool, Inc.
FINANCE COMMITTEE MEETING
September 29, 2015
8:30 AM – 3:00 PM
DFW – Hyatt Regency Hotel
Dallas, Texas**

• A G E N D A •

1. Introduction (15 minutes)..... Harry Skilton
 Sources of Strategic Input (15 Minutes)..... Michael Desselle
2. Strategic Plan Status – Initiatives/Priorities (60 minutes)..... Mike Wise
 Maturity Timeline Chart/Priorities (60 minutes)..... Michael Desselle
3. Operating Plan (90 minutes)..... Tom Dunn
4. Strategic Plan Near-term Linkage to Operating Plan (45 minutes)..... Michael Desselle
5. Determination of Operating Plan Consistency with Strategic Direction (60 minutes) Mike Wise
6. Future Meetings (5 minutes)..... Tom Dunn
7. Adjourn Harry Skilton

Operating Plan

Strategic Input

Finance Committee

September 2015

Michael Desselle

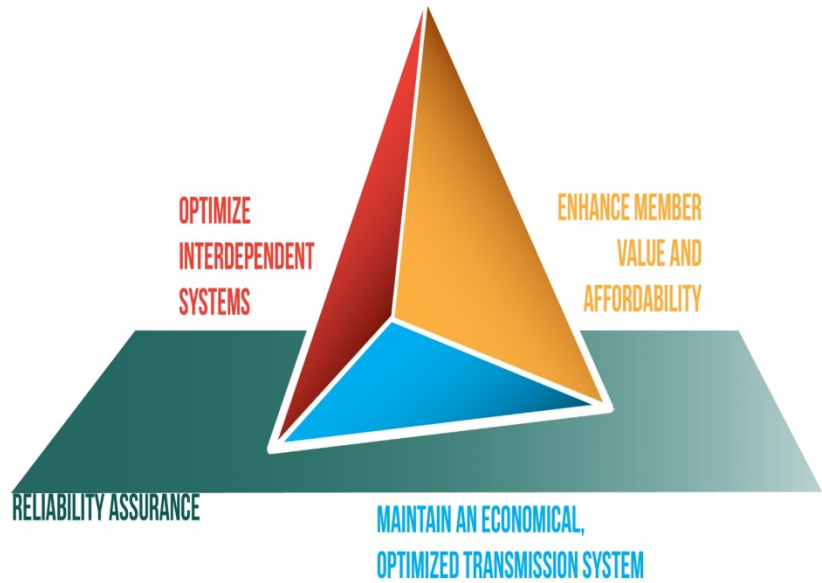
Vice President & CCAO



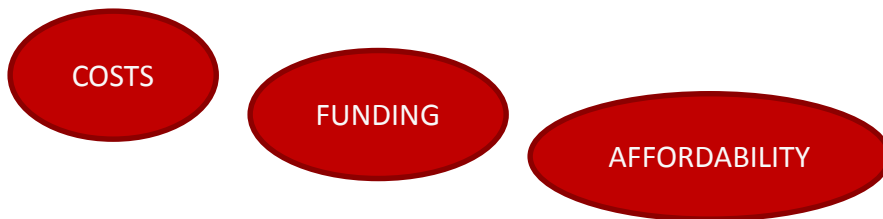
Sources of Strategy Input Analysis



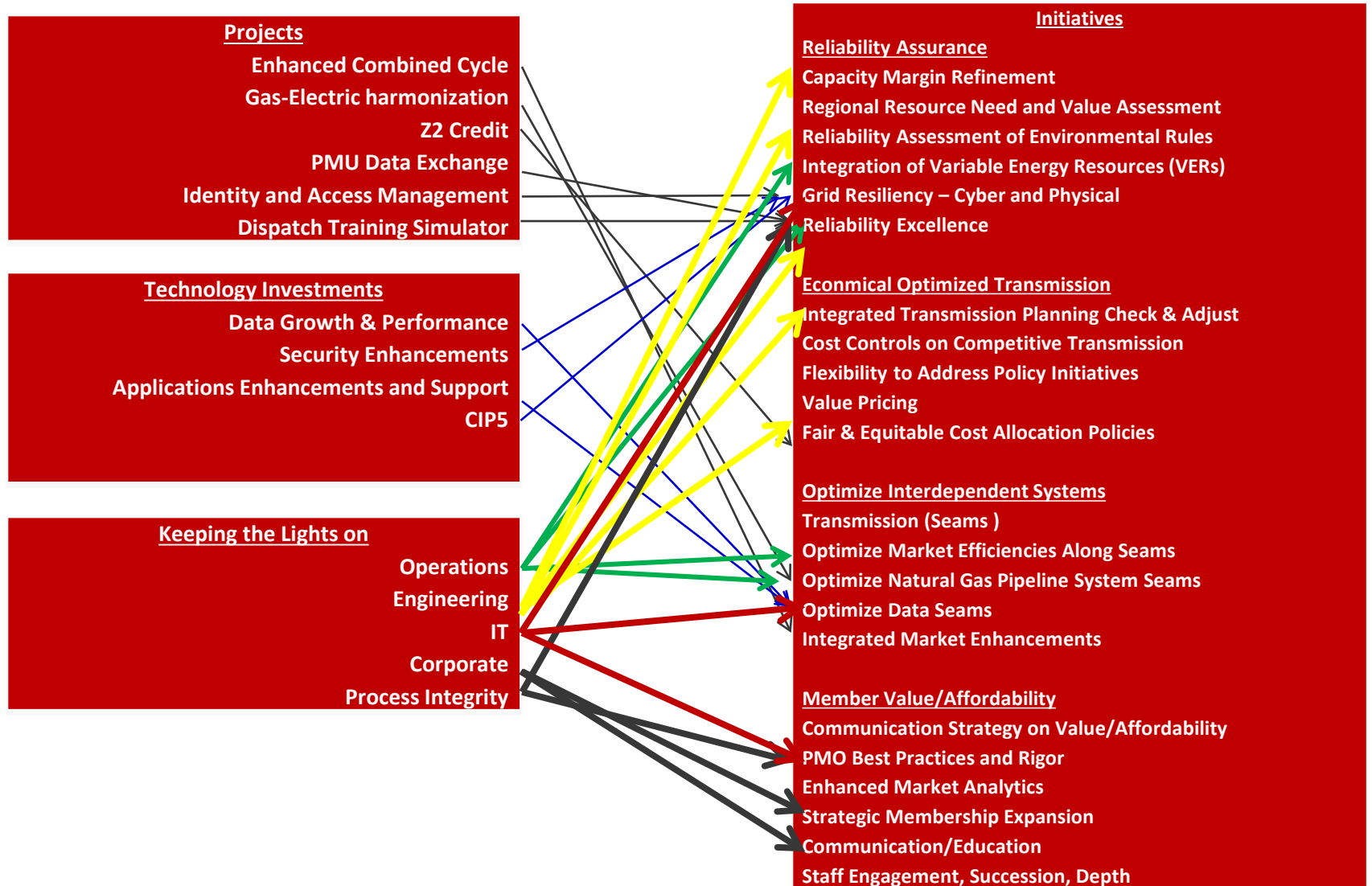
Prioritization














- (A) High; budgeted; **Unbudgeted**
- (B) **Medium; Budgeted**
- (C) Budgeted; expendable



Operating Plan Linkage to Strategic Plan








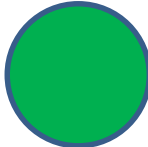




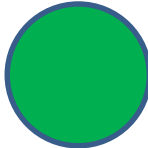


Strategic Plan Assignments

<u>Initiative</u>	<u>Staff</u>	<u>Stakeholders</u>	<u>Status</u>
<u>Reliability Assurance</u>			
• Capacity Margin Refinement (A) [^]	Lanny	MOPC (CMTF)	
• Regional Resource Need and Value Assessment (B)	Michael (<i>Whitepaper</i>)	SPC	
• Reliability Assessment of Environmental Rules (A) [^]	Lanny	MOPC (TWG)	
• Integration of Variable Energy Resources (VERs) (C)	Bruce	MOPC (TF)	
• Grid Resiliency – Cyber and Physical (B) [^]	Michael	MOPC (CIPWG/RCWG)	
• Reliability Excellence (B)	Michael/Ron Ciesiel	MOPC (RCWG/SPCWG/EAWG)	
○ Relay Misoperations			
○ Event Analysis			
<hr/>			
<u>Economical, Optimized Transmission System</u>			
• Integrated Transmission Planning Check & Adjust (B) [^]	Lanny	<i>Joint MOPC/SPC Task Force</i>	
• Cost Controls on Competitive Transmission (A)	Lanny	MOPC (PCWG and/or New TF)	
• Flexibility to Address Policy Initiatives (B)	Lanny	<i>Joint MOPC/SPC Task Force</i>	
• Value Pricing (B)	Paul	MOPC (RTWG and RARTF (or New TF))	
○ Import/Export			
○ Cost Allocation			
• Fair & Equitable Cost Allocation Policies (A) * [^]	Paul	RARTF	

* - Item is on Plan in 2 Foundational Strategies

[^]- Item is also direct CEO Goal

Strategic Plan Assignments

<u>Initiative</u>	<u>Staff</u>	<u>Stakeholders</u>	<u>Status</u>
<u>Optimize Interdependent Systems</u>			
• Transmission (Seams) (A) [^]	Carl	MOPC (SSC)	
• Optimize Market Efficiencies Along Seams (A) <ul style="list-style-type: none"> ○ MISO Relationship and resolution of disputes 	Carl	MOPC (SSC)	
• Optimize Natural Gas Pipeline System Seams (A) [^]	Bruce	MOPC (GECTF)	
• Optimize Data Seams (C)	Barbara (<i>Whitepaper</i>)	MOPC (CWG)	
• Integrated Market Enhancements (B) [^]	Carl	MOPC (MWG)	
			
<u>Enhance Member Value & Affordability</u>			
• Communication Strategy on Value/Affordability (A)	Mike	SPC	
• PMO Best Practices and Rigor (B) <ul style="list-style-type: none"> ○ Process Improvement Program support ○ Audits w/o unmitigated exceptions/qualifications 	Michael	FC/MOPC (CWG)	
• Enhanced Market Analytics (B)	Bruce	MOPC/Board	
• Strategic Membership Expansion (A) <ul style="list-style-type: none"> ○ Integrated Systems Integration ○ AECI Outreach ○ NWPP EIM 	Michael/Carl/Paul	SPC	
			
• Communication/Education (C) <ul style="list-style-type: none"> ○ Website improvements/Social media ○ Regulatory community relationships 	Mike/Barbara/Paul	SPC	
• Staff Engagement, Succession, Depth	Nick	Board	

* - Item is on Plan in 2 Foundational Strategies

[^]- Item is also direct CEO Goal

SPP 2016 Operating Plan

September 29, 2015

Finance



Revision History

Date or Version Number	Author	Change Description	Comments
8/5/2015	Tom Dunn	First draft	Out for comment on Sept 18
9/20/2015	Carl Monroe	Document edits	All changes accepted

It may be helpful to keep a revision table for documents with multiple editor/authors. This will help you keep track of who has seen the document without having to put author/editor initials in the document name itself. You can remove this page before publication. ¹

¹ To insert a footnote, open the References tab and select *Insert Footnote*.

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Background Information

Purpose of SPP

SPP Mission is “Helping our members work together to keep the lights on...today and in the future.” All the services that SPP performs 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 that use members’ transmission systems. As a Regional Transmission Organization, SPP is mandated by the Federal Energy Regulatory Commission to ensure reliable supplies of power, adequate transmission infrastructure, and a competitive wholesale electricity marketplace. Regional Transmission Organizations are like “air-traffic controllers” of the electric power grid. They do not own the power grid, but independently operate the grid minute-by-minute to ensure reliable delivery of power to end users. SPP also serves as a Regional Entity of the North American Electric Reliability Corporation.

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

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

Regulation

SPP is directly regulated by the Federal Energy Regulatory Commission (“FERC”) and minimally regulated by the Arkansas Public Service Commission (“ArPSC”). All changes to the SPP regional tariff must be filed with, and approved by, FERC prior to implementation. Failure by SPP to comply with the provisions of the tariff and/or any directive received from FERC must be reported to the FERC and may be subject to penalties and fines.

Governing Documents

Open Access Transmission Tariff (“OATT”)

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

- 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 (ITPNT, ITP10, ITP20)
- 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
- Operate a single balancing area for the entire SPP region

Membership Agreement (“MA”)

The MA is an agreement between each individual member and SPP. 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, the following:

- Act as the reliability coordinator for the Electric Transmission System
- Develop regional reliability plans and emergency procedures
- Review and approve all planned maintenance of the Electric Transmission System
- 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 of Directors. SPP has a responsibility to facilitate meetings of each and every organizational group. Currently, 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)

Additionally, the Bylaws describe SPP's responsibilities as a Regional Entity. Duties associated with being the Regional Entity include, but are not limited to, the following:

- Investigate all reports or discoveries of non-compliance with ERO standards
- Perform reviews in conjunction with the Compliance Monitoring and Enforcement Program
- Recommend financial penalties and sanctions for non-compliance
- Administer the process for Regional Reliability standards

Protocols and Business Practices

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

Organization Structure

SPP operates via two distinct organizational structures. The first, which we'll refer to as the external structure, is actually the governance structure. It begins with the SPP 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. The output from this structure is generally directives on what work SPP is expected to accomplish.

The second organizational structure, which we'll refer to as the internal structure, is the typical organizational chart illustrating reporting relationships between employees. The internal structure begins with the SPP president and cascades into vice presidents, departmental directors/managers, etc. The internal 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.

Copies of the organizational structures can be found in Appendix A.

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 39¢/MWh. SPP is charging customers 39¢/MWh for service in 2015.

SPP's capital expenditures are funded with borrowings from periodic debt issuances. SPP's debt issuances are generally unsecured, have a 1 to 2 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. SPP staff believes SPP will have sufficient access to debt capital, if required, in 2016.

Short-term liquidity is provided by managing SPP's cash float. In instances when working capital is insufficient, SPP has a confirmed credit facility at a commercial bank which it can access for cash up to \$30 million. This facility will mature in mid-2016; SPP expects to be able to renew this facility along the same terms that currently exist.

2016 Expected Business Environment

The EPA's Clean Power Plan ("CPP") is expected to have significant impacts in the near term and well into the future. The CPP establishes the first-ever national standards to limit carbon pollution from power plants. The final plan sets standards to reduce carbon dioxide emissions by 32% from 2005 levels by 2030. Compliance plans are due from states in 2016 and measurement against 2005 CO₂ levels begins in 2022 and will increase to final compliance by 2030.

Several states within the SPP region are participating in a coalition pursuing legal remedies to address flaws they see in the CPP. The lawsuits will muddy the water in terms of how SPP interacts with its stakeholders as they work to comply with the standards. Additionally, the CPP measures compliance at the state level, SPP is facilitating collaboration with its stakeholders to work towards a

regional compliance solution. Acceptance of a regional approach by all of SPP's impacted members, states, and the EPA is still unknown.

Other major impacts on SPP include compliance with NERC's CIPv5 standards which will affect both physical and cyber security protocols; full year of operation with the Integrated System participating in SPP; expected Federal legislation; and compliance with FERC's directive to align electricity markets with natural gas markets.

Major 2016 Project Investments

Enhanced Combined Cycle Integrated Marketplace Functionality

These enhancements to the Integrated Marketplace will allow Market Participants to submit resource offers for several configurations of a combined cycle generating unit. Each configuration will be modeled in the market clearing engine as a separate resource. SPP will then be able to dispatch the most economic configuration for the combined cycle unit.

Expected Benefits

Once implemented in March 2017, this functionality will allow dispatch of combined cycle generation in a manner resulting in greater economic efficiency. Presently there are 18 combined cycle generating plants modeled in the commercial model. SPP expects to be able to increase economic dispatch (measured as reduced generation costs) by \$3 million annually. New combined cycle plants are expected to join the SPP market in the future which will serve to increase the economic benefits.

Strategic Plan Linkage

- Enhance and Optimize Interdependent Systems
 - Integrated Marketplace enhancements

Investment and Timeline

SPP began work on this project in early 2014; primarily requirements drafting and design. The project was suspended in July 2014 following meetings of the SPP MOPC and BOD where concerns about escalating cost estimates were debated. The SPP BOD approved moving forward with this project following the integration of the Integrated System utilities in October 2015 with a total project budget of \$6.7 million (\$1.2 million had already been spent).

Risks

The vendors engaged have no significant experience in developing this functionality. This lack of experience can lead to slower development which may manifest into missed deadlines and delayed implementation. The lack of expertise can also result in significant errors in the code which will require extended testing and re-testing. Ultimately, if the risks materialized, the cost of the project will increase.

Gas-Electric Harmonization

The project implements changes to the timeline of day-ahead market (“DAMkt”) and day-ahead reliability unit commitment (“DA RUC”) to comply with the FERC order for gas-electric coordination efforts. The Gas Electric Coordination Task Force recommendation was approved by the SPP Board of Directors at its July 28, 2015 meeting. A filing with the Federal Energy Regulatory Commission outlining SPP’s compliance plan is expected in early August 2015. Pending FERC approval, MP’s have requested an implementation date of fall 2016.

Expected Benefits

This investment is necessary to comply with FERC’s Section 206 Order in Docket No. RM14-2 issued March 20, 2014 to adjust the market timelines and explain how the proposed scheduling modifications are sufficient. These timeline changes are an incremental improvement over the existing timeline for improving coordination between the market results and the Timely and Evening nominations. While the proposed timeline does not provide “day-ahead market” results prior to the 1300 Timely Gas Nomination, it does allow for “day-ahead market and day-ahead reliability unit commitment” results to be provided prior to the Evening Gas Nomination. This also allows sufficient time for price formation prior to the “day-ahead market” close. This is intended to be an incremental step, with a long-term goal being to post “day-ahead market” results prior to the Timely Gas Nomination.

Strategic Plan Linkage

- Enhance and Optimize Interdependent Systems
 - Optimize natural gas pipeline system seams

Investment and Timeline

The SPP Board of Directors approved changes to the tariff and protocols at its July 28, 2015 meeting. These changes will be filed with the FERC with a requested effective date of October 1, 2016. The cost estimate presented to the SPP Board of Directors was \$1.5 million. Work on this project will occur in coordination with the Enhanced Combined Cycle project as both will have significant impacts on the ability of the market operating system to solve in a timely manner.

Risks

The compliance plan is subject to approval by the FERC. Should the FERC find SPP’s compliance plan to be inadequate or lacking, additional stakeholder meetings, approvals, system designs, and expenses may be required.

Z2 Credit: Priority II and Priority III Functional Requirements

Attachment Z2 of the SPP tariff requires SPP to identify creditable upgrades of the transmission network, calculate revenue credits associated with creditable upgrades, and distribute revenue credits to upgrade sponsors.

Benefits

Investment will implement the stakeholder designed Z2 credit stacking solution and streamline workflows in order to meet current tariff requirements. No monetary benefits are expected from full

implementation of this project. Soft benefits include reductions in error probabilities, reduced dispute and resettlement activities, and reduced future staffing needs.

Strategic Plan Linkage

- Enhance member value and affordability
- Maintain an economical, optimized transmission system
 - Fair and equitable cost/benefit allocation policies

Investment and Timeline

The Z2 P1 requirements are on schedule for implementation in January 2016. The P2 and P3 work is expected to start in April 2016 after SPP has worked through the legacy credits. Implementation of the P2 and P3 functionality is planned for December 2016. The rough estimate for cost is currently \$0.5 million which is solely software development. SPP does not expect additional hardware assets will be required for this project.

Risks

The Z2 P2 and P3 requirements are anticipated to mitigate SPP's risk of tariff violations, audit qualifications, and customer disputes in addition to reducing the needs for additional staff to perform repeatable functions manually. Two major risks introduced with this project relate to performance of the credit stacking system and the cost to implement. The magnitude and probability of these risks will become clearer as the initial credit stacking system development progresses.

PMU Data Exchange and Analysis

The PMU Data Exchange and Analysis project will equip SPP with the capability to enhance both current operations and after-the-fact event analysis as well as system model validation efforts. Additionally, PMU data can assist in real-time situational awareness, identifying generator trips, island situations, and enhance State Estimator accuracy.

The initiative will progress in three distinct phases, as follows:

- Phase I – Installation of systems to provide capability to send and receive and archive synchrophasor data, develop real-time analytics engine, and perform after the fact analysis.
- Phase II – expand the number of sites where SPP will collect PMU data, expand analytics and analysis capacity.
- Phase III – Integrate PMU data collection and analytics into SPP's secure data network for use with State Estimator and real-time operations.

Benefits

The use of synchrophasor data in event analysis and real-time monitoring are expected to enhance SPP's knowledge of the electric system stability which will result in improved system operations and planning. Full implementation of the project (phase III) is expected to equip SPP with predictive capabilities to identify system disturbances before they occur and allow SPP and affected utilities to take action prior to an event occurring.

Strategic Plan Linkage

- Reliability assurance
 - Integration of variable energy resources
 - Event analysis

Investment and Timeline

The project consists of 3 phase, each of which encompass a full calendar year.

- Phase I – capital expenditure of \$0.446 million; operating cost of \$0.45 million, 2 incremental staff additions
- Phase II – capital expenditure of \$0.116 million; operating cost of \$0.5 million
- Phase III – capital expenditure of \$1.3 million; operating cost of \$0.64 million, 1 incremental staff addition

SPP would incur ongoing operating costs beyond 2018 which would be approximately \$0.70 million and would expect to incur capital costs to replace hardware and upgrade software every 3 to 5 years.

Risks

The use of PMU data in system monitoring, planning, and operating is gaining traction but is not universally adopted. The systems utilized to analyze the data are in their infancy and have not been proven to significantly improve system operation, design or monitoring. Therefore, there is a small probability that the investment in PMU capabilities may not yield long-term benefits. Additionally, a robust solution will require SPP utilities as well as neighboring regions to share synchrophasor data with SPP. These utilities/systems may need to invest in communication infrastructure to be capable of transmitting the data.

Identity and Access Management (“IAM”)

Implement an automated IAM system that automates the vast majority of manual IAM activities in place at SPP today. Role based access models can be developed to suit individual business owners, access provisioning and de-provisioning will be automated and periodic access reviews will be standardized and automated. Ad-hoc access reviews can also be generated to help satisfy CIP v5 transfer and termination processes for SPP employees and contractors. All identities and their access entitlements that exist in the SPP environment will be discovered and will reduce compliance and cyber security risks associated with orphan user accounts and excess user entitlements.

Benefits

Improved access management process will result in enhanced controls over system access as well as provide significant improvements to audit evidence processes which will be critical going forward under the CIPv5 standards.

Strategic Plan Linkage

- Reliability assurance
 - Grid resiliency – cyber and physical

Investment and Timeline

Initial capital costs of \$0.49 million include acquisition of software, servers, and vendor implementation. Ongoing operating costs of \$0.13 million/year cover licensing and support. Full implementing is anticipated within 12 months.

Risks

The project itself is designed to mitigate significant risks which currently exists around access to SPP's systems. With that said, the actual implementation of the IAM project comes with its own set of risks, not the least of which is that the solution does not work as seamlessly as advertised.

Dispatcher Training Simulator Upgrade

This is actually a 2 phase project. Phase I implements a stand-alone dispatcher training simulator within the operations analysis and support department (currently SPP shares a dispatcher training simulator between operations and the training department). The stand-alone simulator will ensure simulations are available for real-time operations personnel at all times. Phase II of the project will result in an enhanced "Training and Testing Simulated Environment" which incorporates SPP's market systems into the training environment.

Benefits

Establishing a stand-alone dispatcher training simulator will improve the capabilities of SPP's real-time operators by providing SPP's operators increased opportunity to participate in simulated training.

Strategic Plan Linkage

None

Investment and Timeline

Phase I requires \$0.21 million in hardware, software, and licenses and is expected to be fully implemented in 2016. Phase II requires an additional \$3.6 million in hardware, software, and licenses and will not be completed until 2018. At this time Phase II has not been approved to move forward.

Risks

The project is expected to mitigate risks which currently exist in SPP's training of its real-time operations staff. SPP underwent a peer review conducted by the North American Transmission Forum in December 2014. The review noted "...*The current Dispatcher Training Simulator has limited availability to the OAPS department and does not meet the current needs of SPP operators due to the additional role of the BA function.*". Implementation of Phase I of the project is expected to address this concern.

Deferred or Declined Projects

There are many project proposals SPP considers when determining its plan for the upcoming year. Numerous of these projects are not approved to begin work during the year due to i) a lack of staff resources to accomplish the work; ii) lack of funding to pay for the project; or iii) the project lacks sufficient detail to warrant moving forward at this time.

Appendix B summarizes all of the projects reviewed by SPP for the 2016 fiscal year.

2016 Major Technology Investments

SPP's ability to provide the vast majority of its services is contingent on employing 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 1,700 physical and virtual servers across multiple environments interconnected by a high availability network. Significant investments are made annually to not only maintain the existing capabilities of the technology infrastructure but to also enhance the structure to address new demands on the system, cyber security requirements, and incremental additions to SPP's service menu.

Data Growth and Performance

SPP began this initiative in 2014 when it identified a need to address exponential growth in the volume of data being received, processed, transferred, and stored. SPP replaced a large portion of its storage environment during 2015, incorporating both a technology refresh as well as support for data growth to accommodate Marketplace, Project Pinnacle, and Integrated Systems requirements. During 2016, SPP will invest in backup/archival data storage capacity, as well as additional storage virtualization solutions.

Benefits

The implementation of a 10GB network (as compared to the current 1GB level) will alleviate existing bandwidth constraints/congestion, and allow SPP to provide sufficient network capacity to meet production and backup requirements. It is imperative for SPP to be able to consume inputs from its customers, process those inputs according to the timelines dictated in the OATT and Protocols, and render solutions also in accordance with established timelines.

Investment and Timeline

The initiative began in 2014 and is set to conclude in 2016. Total capital expenditures for the project are \$5.8 million with \$2.8 million expected to be spent in 2016 to complete the work.

Security Enhancements

The quantity and sophistication of computer viruses and security threats continues to increase, including the ability for viruses to lay dormant for long periods of time and then permeate extensively through an organization. As a result, a security breach or malware insertion can have a significant impact to SPP's operating environment. The inability to detect and quarantine security threats would greatly expose SPP systems, with potential performance implications to Reliability and Marketplace operations as well as result in mandatory compliance shortcomings and potential penalties. It is essential to stay current with best security practices to mitigate the impact to SPP.

Benefits

The 2016 security initiatives will strengthen SPP's network, server, and security infrastructure, thereby reducing SPP's exposure to unwelcomed access and adverse business impacts.

Investment and Timeline

Improvements include upgrading firewalls, authentication software, and anti-virus capabilities. These improvements will be implemented throughout 2016. Total capital investment is expected to be \$2.1 million

Application Enhancements and Support

Primary focus is on design and implementation of data storage solutions which provide tiered levels of storage access resulting in reduction in costs of storage. Implementation allows real-time users to have a common interface for accessing current and historical data with minimal delays in system performance, while providing analytical and after the fact users access to data on a higher capacity and more cost efficient platform. Internally supported systems such as POPS and CMS have periodic requests from stakeholders/regulators for enhanced functionality.

Benefits

Enhancements to POPs and CMS systems are needed to support member requests for added functionality, as well as the ability to integrate and support upstream systems. The implementation of internal cloud solutions will provide leverage of physical resources for financial and technical benefits, and the tiered storage approach for data warehouse information will reduce storage costs as compared to previous storage methodologies.

Investment and Timeline

Data storage architecture consumes the majority of this \$1.7 million budget. Implementation will complete prior to the end of 2016.

CIP and ESP Compliance

SPP must adhere to ongoing CIP requirements and regulations, including adherence to CIP Version 5 standards by April, 2016.

Benefits

SPP is required to comply with FERC/NERC regulatory requirements. As part of recent CIP regulations, SPP must further isolate the infrastructure designated within the Electronic Security Perimeter (ESP), as well as implement additional restrictions for accessing the ESP to/from the SPP corporate environment.

As a result, SPP must acquire and implement "isolated" systems (Flash Storage, Networking, and Secure Access Software) within the ESP that are currently leveraged and shared across multiple environments. While the impact may be viewed to be beneficial from a security perspective by FERC/NERC, this additional isolation results in increased complexity and operating costs for SPP, including a formal "baseline management" process for monitoring and reporting configuration changes within the ESP.

Investment and Timeline

Work on this project began in 2015 and is on track to complete in time to meet the compliance deadline of April 2016. 2016 investment will be \$1.4 million, the total cost of compliance is \$2.4 million.

Keep The Lights On

Reliability is job #1 at SPP. It is the central focus of every decision and action undertaken within the organization. Internally, this is known as “keep 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 organization 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 Department Investment and Resources					
Salary & Benefits	Travel	Services	Other	CapEx	Approved Staff
\$ 20.9	\$ 0.4	\$ 0.3	\$ 0.1	\$ 8.7	161

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, 7 days 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. Engineering Support

Significant duties include: regional reliability coordination, tariff administration, transmission service, real-time and day-ahead market operations, maintain the models for the state estimator and the commercial modeling tools, training, and balancing authority operations. Additionally, staff from this group work with numerous stakeholder groups including; MOPC, Business Practices WG, Balancing Authority Operating Committee, Generation WG, Operating Reliability WG, and Operations Training WG. Finally, staff represents SPP and its members at numerous NERC working groups.

2016 Priorities

Wind Study – refresh of 6 year old wind integration study

Strategic Plan Linkage

- Reliability Assurance
- Optimize Interdependent

- | | |
|--|---|
| <p>Enhance operator tools – improve the types of information utilized by the operations staff in monitoring system stability and status</p> <p>Market to Market – Dedicated effort to address seam and congestion issues highlighted since start of Market to Market process</p> <p>Gas Coordination – participate in advancing solution to extend a gas pipeline as an alternative to construction of new generation to eliminate electric system contingency</p> <p>Internal Model Coordination – establish process to coordinate between real time operations and long-term planning.</p> | <p>Systems</p> <ul style="list-style-type: none"> • Reliability Assurance
 • Optimize Interdependent Systems
 • Optimize Interdependent Systems
 • Reliability Assurance |
|--|---|

Engineering

Engineering Department Investment and Resources					
Salary & Benefits	Travel	Services	Other	CapEx	Approved Staff
\$ 9.4	\$ 0.3	\$ 2.8	\$ 0.6	\$ 0.5	76

Principal duties of SPP’s engineering department include planning SPP’s transmission system necessary 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 Regional Entity. The predominance of these duties are required by SPP’s OATT and business practices, the Membership Agreement, NERC Reliability Standards, and SPP Criteria.

2016 Priorities

- Increased Compliance – Focus on new compliance requirements resulting from changes to several NERC standards including TPL-001 and 007, MOD-31, MOD-33, and CIP-002. SPP task forces and working groups such as TWG, MDWG, and TPLTF have been working in 2015 to define how SPP should comply.
- Integrated System Support – addition of the IS will increase the volume of generation interconnection and transmission service requests as well as the scope of the ITP studies.
- Capacity Margin Refinement – expect recommendation to reduce the capacity margin required for the region

Strategic Plan Linkage

- Reliability Assurance

- Reliability Assurance
- Maintain Economical, Optimized Transmission System
- Reliability Assurance
- Enhance Member Value

accompanied with establishing a process for assurance monitoring to ensure fair and equitable capacity provision.

Clean Power Plan Assessments – continued support for utilities and regulators to inform, guide, and facilitate implementation of the CPP.

Transmission Planning Improvements – includes more efficient structure to studies, enhanced processes to determine assumptions, improvements to data validation and collection

Z2 Crediting Support – new process to ensure accurate inputs into the crediting system, and validation efforts on the outputs from the system

- Optimize Interdependent Systems
- Reliability Assurance
- Maintain Economical, Optimized Transmission System
- Enhance Member Value
- Enhance Member Value
- Maintain Economical, Optimized Transmission System
- Maintain Economical, Optimized Transmission System

Information Technology

Information Technology Department Investment and Resources					
Salary & Benefits	Travel	Services	Other	CapEx	Approved Staff
\$ 18.0	\$ 0.1	\$ 3.5	\$ 20.9	\$ 11.6	146

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 three primary groups (IT-Operations, IT-Applications, and IT-Sourcing), along with a Chief Architect.

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 IT-Operations department provides 24x7-support for all communications and networking systems, and all computer hardware and environmental needs for the SPP 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-Sourcing and Strategy team has responsibility for managing the IT budget and facilitating/negotiating business activities with major IT vendors. The team works closely with the other IT departments to incorporate an appropriate short and long-term budget and acquisition

philosophy, which incorporates vendor leveraging/relationships, asset lifecycles, and adequate maintenance coverage.

2016 Priorities

Enterprise Data Management – ensure SPP capability to transport data, both internally and externally, and appropriately store data based on need and value

Cyber Security – enhance SPP’s processes for responding to and recovering from cyber events

Efficiency - improve the identification, evaluation and implementation of technologies to improve services and reduce costs of delivering service to customers

Strategic Plan Linkage

- Enhance Member Value

- Reliability Assurance

- Enhance Member Value

Corporate

Corporate Department Investment and Resources					
Salary & Benefits	Travel	Services	Other	CapEx	Approved Staff
\$ 20.8	\$ 0.6	\$ 6.4	\$ 5.3	\$ 1.1	118

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

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

Additionally, 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.

2016 Priorities

Western expansion – effort to expand SPP’s services to utilities west of SPP’s current footprint.

Settlements – focus on upgrading reliability and capability of settlement systems

Outreach & Education - Increase one-on-one meetings with SPP members, regulators, and legislators to build relationship and better understand regional needs and issues

Tariff Compliance – Continue drive to ensure SPP is knowledgeable of its specific requirements and duties under the tariff and capable of performing those responsibilities

Strategic Plan Linkage

- Optimize Interdependent Systems

- None

- None

- None

Process Integrity

Process Integrity Department Investment and Resources					
Salary & Benefits	Travel	Services	Other	CapEx	Approved Staff
\$ 7.8	\$ 0.3	\$ 0.4	\$ 0.1	\$ 0.5	58

Primary responsibilities within the Process Integrity group include audit, compliance, external member training and customer service, project management, and interregional activities. Departments within this group work closely with the SPP Oversight Committee.

2016 Priorities

Security and Compliance – Continue to strengthen SPP’s security posture, both cyber and physical, while ensuring an active role in development and implementation of future standards

Stakeholder Project Prioritization – Mature a process to engage stakeholders in prioritizing the project work SPP undertakes

Distributed Process Improvement – Move from a centralized process to a distributed process empowering more staff to engage in process improvement development and implementation

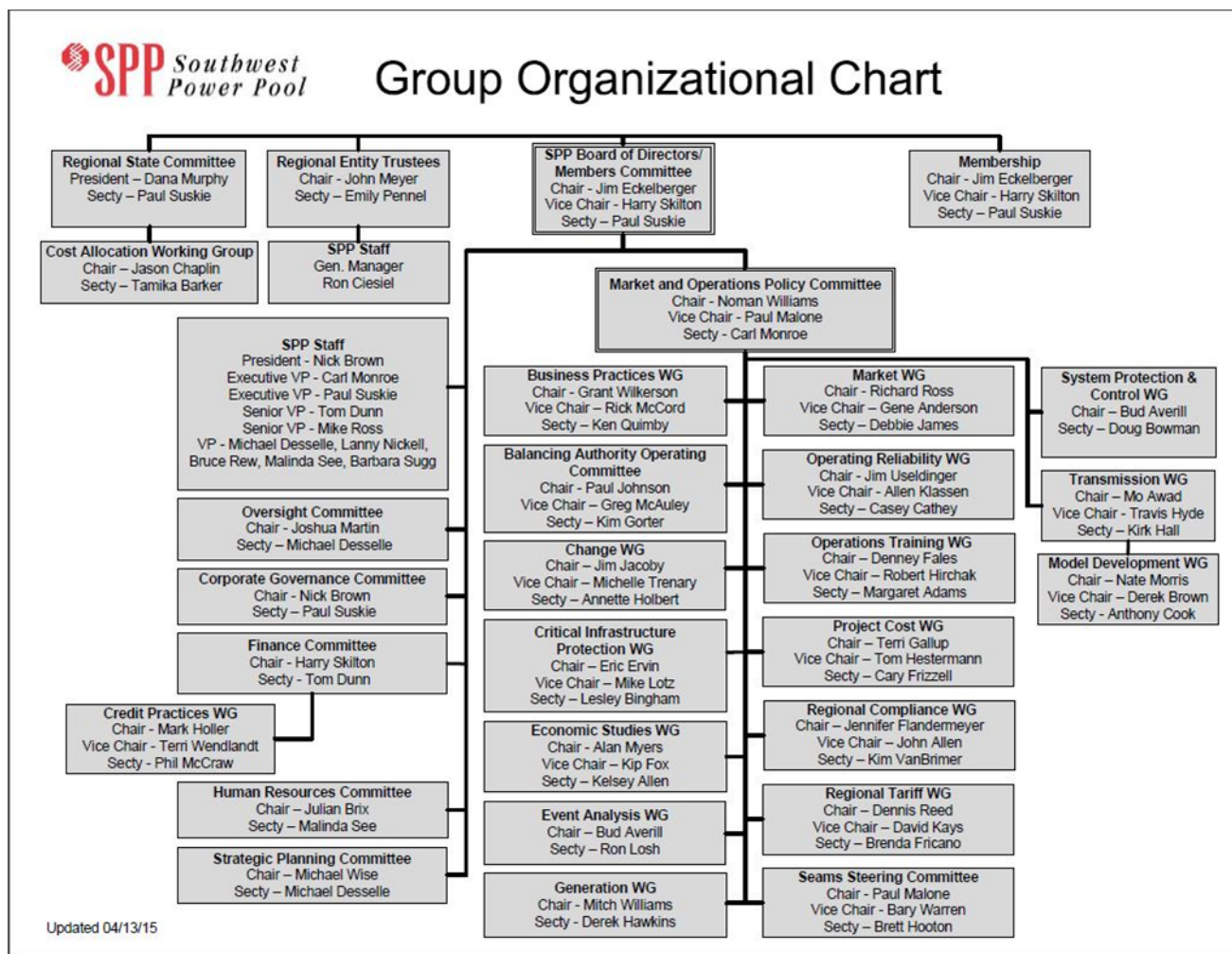
Strategic Plan Linkage

- Reliability Assurance

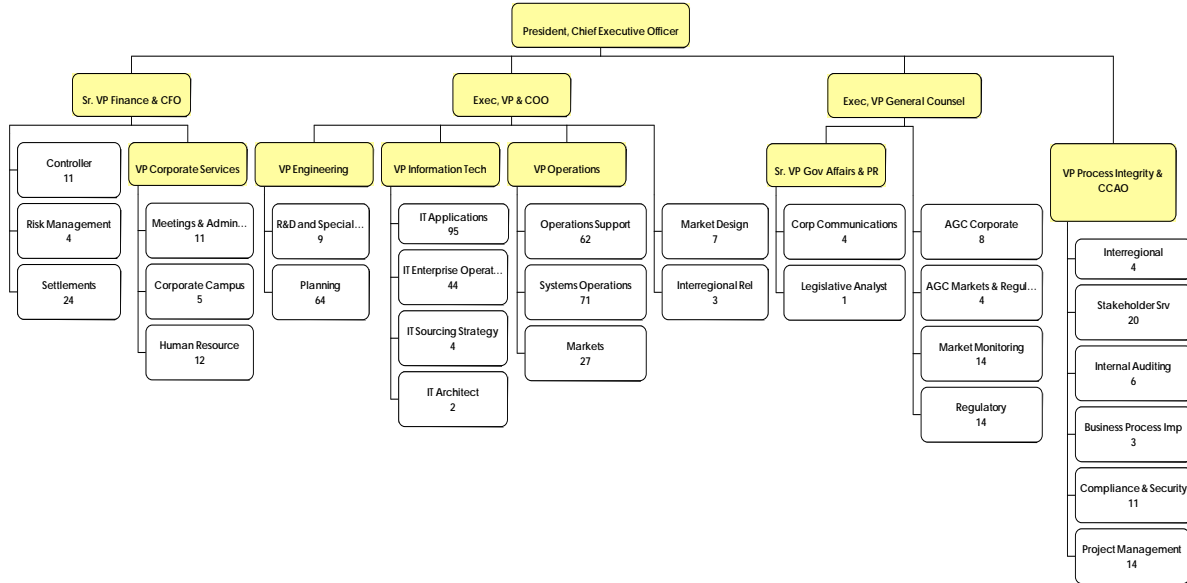
- Enhance Member Value

- Enhance Member Value

Appendix A



SPP Organizational Chart - September 21, 2015
Officers with detailed headcount



Appendix B

Project	Capital Investment		Total	Project	Owner	Strategic Plan Linkage
	2016	Total	Investment	Source		
A P P R O V E D						
Gas/Electric	1.0	1.0	1.5	FERC	GECTF	Enhance & Optimize Interdependent Systems
Enhanced Combined Cycle	4.3	5.2	6.2	MOPC	MWG	Enhance & Optimize Interdependent Systems
FERC 676-H NITS Web Oasis	0.1	0.1	0.2	FERC	Staff	None
Z2 Credit Stack (P1,2,3)	0.7	2.7	2.8	FERC	Staff	Economical, Optimized Transmission System Enhance Member Value and Affordability
2 Factor Authentication	0.2	0.2	0.6	Staff	Staff	Reliability Assurance
Identity & Access Mgmt	0.5	0.7	1.1	Staff	Staff	Reliability Assurance
Voltage Stability Tools	0.0	0.0	0.0	Staff	Staff	Reliability Assurance
Enterprise Records Mgmt ph II	-	-	0.2	Staff	Staff	Enhance Member Value and Affordability
Portal Replacement	0.1	0.1	0.2	Staff	Staff	Enhance Member Value and Affordability
Pro-law Upgrade	0.0	0.0	0.0	Staff	Staff	Enhance Member Value and Affordability
Intranet Redesign	0.1	0.1	0.1	Staff	Staff	Enhance Member Value and Affordability
DTS Upgrade	0.2	3.8	4.8	Staff	Staff	None
PMU Data Exchange	0.5	1.9	3.4	Staff	Staff	Reliability Assurance
	<u>7.7</u>	<u>15.8</u>	<u>21.2</u>			
D E F E R R E D / D E L A Y E D						
Transmission Settlement Upgrade	-	4.9	4.9	Staff	Staff	
Local Reliability Assessment	-	0.5	0.5	Staff	Staff	
R E J E C T E D						
Mitigated Offer Design phase II	1.2	1.2	2.7	Staff	Staff	
Enhanced EMS Export	0.1	0.1	0.1	Staff	Staff	

Strategic to Operating Plan Linkage

RELIABILITY ASSURANCE			
INITIATIVE	PRIORITY	STAGING	OP PLAN
Capacity Margin Refinement	A	Detail	KTLO/Eng
Regional Resource Need and Value Assessment	B	Conceptual	No
Reliability Assessment of Environmental Rules	A	Phase 1 – Complete Phase 2 - Preliminary	KTLO/Eng
Integration of Variable Energy Resources (VERs)	C	Preliminary	Project - PMUs KTLO/Ops - Wind Int
Grid Resiliency – Cyber and Physical	B	Detail	Project - IAM TechInv - Sec, CIP5 KTLO/IT – Cyber KTLO/PI - Cyber
Reliability Excellence	B	Detail	Project - PMUs, DTS KTLO/Ops – Tools KTLO/Ops – Mod Coord KTLO/Eng – Compliance KTLO/PI – Sec & Comp

ECONOMICAL, OPTIMIZED TRANSMISSION SYSTEM			
INITIATIVE	PRIORITY	STAGING	OP PLAN
Integrated Transmission Planning Check & Adjust	B	Detail	KTLO/Eng – IS Support KTLO/Eng - TPI
Cost Controls on Competitive Transmission	A	Detail	
Flexibility to Address Policy Initiatives	B	Detail (TPITF)	
Value Pricing	B	Conceptual	
Fair & Equitable Cost Allocation Policies	A	Detail	Project -Z2 KTLO/Eng – Z2

Strategic to Operating Plan Linkage

<u>OPTIMIZE INTERDEPENDENT SYSTEMS</u>			
<u>INITIATIVE</u>	<u>PRIORITY</u>	<u>STAGING</u>	<u>OP PLAN</u>
Transmission (Seams)	A	Detail	
Optimize Market Efficiencies Along Seams	A	Detail/Prelim	KTLO/Ops - MkttoMkt
Optimize Natural Gas Pipeline System Seams	A	Preliminary	Project – GEH KTLO/Ops – Gas Coord
Optimize Data Seams	C	Conceptual	TechInv – Date Growth KTLO/IT - EDM
Integrated Market Enhancements	B	Detail	Project - ECC 10/1

<u>ENHANCE MEMBER VALUE AND AFFORDABILITY</u>			
<u>INITIATIVE</u>	<u>PRIORITY</u>	<u>STAGING</u>	<u>OP PLAN</u>
Communication Strategy on Value/Affordability	A	Detail/Prelim	
PMO Best Practices and Rigor	B	Preliminary	TechInv – Apps Enhance KTLO/IT – Efficiency KTLO/PI – StPriority KTLO/PI – Dist PI
Enhanced Market Analytics	B	Detail	
Strategic Membership Expansion	A	Ongoing	Phase 1 –Complete KTLO/Corp – West Exp
Communication/Education	C	Ongoing	KTLO/Corp - Outreach
Staff Engagement, Succession, Depth		Underway	