



Southwest Power Pool, Inc.
OVERSIGHT COMMITTEE MEETING
December 5, 2016
Executive Conference Room
SPP Corporate Campus, Little Rock, AR.

• A G E N D A •

9:00 a.m. – 2:00 p.m. CDT

- 1. Call to Order/Administrative Items Josh Martin
- 2. Action Items Report..... Michael Desselle
- 3. Quarterly Activity Reports
 - a. Compliance Carl Stelly
 - b. Internal Audit Lauren Krigbaum
 - c. Market Monitoring Unit Alan McQueen
 - d. Security Barbara Sugg
- 4. IEP Matter Ben Bright
- 5. Looking Forward Report..... Craig Roach
- 6. Value of “Financial-Only” Participants..... Richard Dillon
- 7. 2017 Internal Audit Plan Approval..... Lauren Krigbaum
- 8. Oversight Committee Scope Revisions Susan Polk
- 9. Oversight Committee Annual Work Plan..... Josh Martin
- 10. Action Items..... Michael Desselle
- 11. Future Meetings Josh Martin

2017

Tuesday, February 7, 2017 - DFW AAdmirals Club

Thursday, April 13, 2017 – Tulsa

Monday, June 12, 2017 – SPP Little Rock

Tuesday, August 1, 2017 – DFW AAdmirals Club

Tuesday, October 3, 2017 –DFW AAdmirals Club

Monday, December 4, 2017 – SPP Little Rock

- 12. Executive Session 1 (Visitors Excluded) Oversight Committee and RTO Staff
- 13. Executive Session 2 (OC Members & MMU only) Oversight Committee and MMU Secretary

Southwest Power Pool, Inc.
OVERSIGHT COMMITTEE MEETING
September 22, 2016
Hilton, Chicago O'Hare

• M I N U T E S •

Agenda Item 1 – Call to Order/Administrative Items

Josh Martin called the meeting to order at 9:00 AM. Members in attendance included: Josh Martin (Director); Larry Altenbaumer (Director); and, Phyllis Bernard (Director). Additional Board members in attendance included Graham Edwards, and Jim Eckelberger. SPP Members present included Mike Wise (GSEC) and Richard Ross (AEP) for a portion of the meeting. SPP staff in attendance was: Michael Desselle, Lauren Krigbaum, Carl Stelly, Erin Cullum, Richard Dillon, Barbara Stroope, Alan McQueen, Paul Suskie, Barbara Sugg, Chris Evans and Ben Bright. Counsel for the MMU, Eric Callisto, was also present (Attendance – Attachment 1).

Larry Altenbaumer moved and Josh Martin seconded adoption of the June 13, 2016 Oversight Committee meeting minutes, July 5, 2016 Executive Session conference call minutes, and July 19, 2016 Executive Session conference call minutes, which were unanimously accepted (Minutes 06/13/2016, 07/05/2016, and 07/19/2016 – Attachment 2).

Agenda Item 2 – Action Items Report

Michael Desselle reviewed the Pending Action Items status.

Agenda Item 3 – Quarterly Activities Report

Internal Audit – Lauren Krigbaum provided the quarterly report (Internal Audit Report – Attachment 3) for the Internal Audit department. She noted that the software licensing audit would be restarted in Q2 2017. Lauren took the opportunity in this agenda item to also share and discuss the 2017 draft annual audit plan noting that Z2 matters had caused delays in auditing some 2016 plan items which are being shifted to the 2017 Plan. In response to the question regarding sufficient resources to accomplish the 2017 Plan, Lauren noted that IA is taking a “risk-based” approach to accomplish the work, but acknowledged that it is an aggressive Plan. Lauren also advised the Committee that KPMG (the current SOC1 auditors) had not identified any exceptions to date.

Compliance – Carl Stelly reviewed the Compliance Department quarterly activities (Compliance Report – Attachment 4). He reported that SERC had issued its final 693 audit report noting no findings with the exception of 3 Open Enforcement items SPP had self-reported prior to the audit. Carl also provided an update on the NERC Assist Team efforts underway.

Market Monitoring Unit – Alan McQueen provided his update on quarterly activities (Market Monitoring Activity Report – Attachment 5). Alan reported that the Annual State of the Market (ASOM) report was filed with FERC in August and presented in September noting that a FERC data-review team is currently reviewing the report. Alan discussed with the Committee the status of the MMU ASOM recommendations (MMU Recommendations Status – Attachment 6). A discussion about Physical Withholding as an alternative to the Day Ahead (DA) Must Offer requirement occurred and the OC expressed their view that the MMU should focus on Market Power abuses.

Agenda Item 5 – Potential Role for Boston Pacific in 2017

Craig Roach (Boston Pacific) advised the Committee that Boston Pacific (BP) would be pleased to develop a “Looking Forward” report and serve as advisor to the Board in 2017 (Continuing Role for Boston Pacific

Memorandum – Attachment 7). He noted that they would update the most important topics, including: Shale; Clean Power Plan; and, Electric Vehicles. Craig agreed with Jim Eckelberger that batteries seem to be a key to the future. Mike Wise raised the issue of energy efficiency and the decoupling of growth rates and GNP affecting systematic changes in member loads as a strategic issue. Phyllis Bernard raised the issue of utility scale solar. Craig noted that they would address each item.

Finally, to close the loop on Boston Pacific's offer in early summer to assist the Oversight Committee address concerns raised regarding oversight of the MMU as SPP awaited the FERC's final audit report, Josh informed Craig that SPP and the OC had already made the expected modifications to address concerns raised in recent trade publications.

Agenda Item 6 – OC 2016 Self-Assessment

Michael Desselle reviewed the SPP Organizational Group Self- Evaluation/ Assessment with the Committee and discussed items to list for both the Major Accomplishment and Major Pending Issues sections.

Agenda Item 7 – Discussion of Frequently Constrained Areas and VOM

Josh Martin introduced the topic noting the Mike Wise and Richard Ross asked that the issue be discussed prompting the Board Chairman to ask that the OC consider the topic. The MMU's Counsel, Eric Callisto, noted the MMU was looking forward to hearing comments from stakeholders, including the MWG.

Mike Wise noted that the issue was raised in the July Board meeting when the MMU presented its Annual State of the Market (ASOM) report. On figure 2-8 on Page 17 of the ASOM, the MMU stated that Combustion Turbines (CTs) in the SPP are able to recover their avoidable cost in the market. Mike noted that GSEC, as a market participant with CTs, disagrees with the MMU (Mike Wise Memo – Attachment 8). Mike proceeded to explain why GSEC disagrees. Mike presented to the OC depictions of GSEC's Mustang Unit resource stacking, Clearings, RUCs, starts, and other unit and cost statistics. He further described GSEC's view of short-run marginal cost. He described the financial dilemma GSEC faces and highlighted for the OC the Policy issues at issue on this subject, including:

- These maintenance charges: are they not actual incurred charges dependent upon using the unit for an additional unit of marginal production?
- Not including these maintenance charges as SRMC distorts the market price.
- Owners of the units are subsidizing the marketplace with their units.
- Price signal to generators is “good luck, and hopefully you can recover your actual costs in the market with LMP price variances”
- Why shouldn't each start of the unit for market commitment purposes (RUC or DAM) be allowed to be made whole by the market?

In response to the question from Josh, “that'... if Variable O&M (VOM) can't be considered Short-term marginal cost, is there some other way to recover it?”, Mike noted that ERCOT, CalISO and other markets allow it.

Chairman Eckelberger noted that there needs to be room for new thinking. Phyllis and Larry agreed. Josh thanked all for the healthy discussion and education on the matter. He suggested further discussions at the MWG needed to occur and Jim advised all to overcome the semantics of the defined terms and get to business processes that work to resolve the concerns. Jim suggested that a timeline be established and Josh asked for a status report at its next meeting.

Agenda Item 8 – New Action Items

Action items are:

- Staff secretaries to review FERC audit recommendations and modify scope accordingly;
- MWG to provide status report on VOM matter; and,
- Staff to revise and update OC scope and to propose 2017 meeting schedule.

Agenda Item 9 – Future Meetings

The Committee discussed the remaining meetings for 2016.

Adjournment

Josh Martin thanked everyone for participating, adjourned the meeting and went into Executive Session.

Executive Session 1

The Committee met in Executive Session with RTO staff and discussed IEP, Compliance and Security matters.

Executive Session 2

The Committee met in Executive Session with MMU staff only and discussed MMU matters.

Executive Session 3

The Committee Members only met in Executive Session and discussed MMU personnel matters.

Respectfully Submitted,

Michael Desselle



Southwest Power Pool, Inc. (SPP)
RTO Compliance Department
Oversight Report – Q4 2016

PUBLIC

Compliance Report

Compliance Department Structure and Staffing:

Compliance Department management completed the effort to build on the recommendations obtained from two independent reviews of the SPP Compliance Program. In line with the recommendations, three additional FTEs have been hired to assist with the NERC Standards compliance-related responsibilities of the Compliance Department as shown below:

Manager of Compliance (hired June 1, 2016):

To manage the Compliance Group and assist with the development of a Quality Assurance focus in this group.

Lead CIP Analyst (hired July 1, 2016):

To provide more CIP expertise in Standards Development and with the oversight and Quality Assurance on all NERC CIP-related compliance responsibilities.

Senior Planning Engineer (hired November 1, 2016):

To provide more Planning expertise in oversight and Quality Assurance on all NERC Planning-related compliance responsibilities.

In addition and as part of the re-distribution of compliance-related responsibilities, SPP has re-assigned Jonathan Hayes as Staff Secretary of the RCWG, replacing Kim VanBrimer.

Operations & Planning (O&P):

Compliance staff are currently focused on identifying the O&P Standards that are at highest compliance risk to SPP and are scheduling the spot checks for those Standards for 2017. Staff continue to work with SERC to close out the remaining self-reports, responding to Requests for Information (RFI) and submitting mitigation plans and associated evidence to support the mitigation of those issues identified in the self-reports. Staff are diligently working on developing internal processes to support the Internal Compliance Program and have recently participated in the kickoff of the search for both a Governance Risk Compliance (GRC) tool and an Identify and Access Management System (IAMS), two very important tools necessary to help manage compliance-related tasks and the management of user access for all BES Cyber Systems.

Upcoming Dates of Importance:

March 6-9, 2017 (tentative):

CIP Reliability Standards Audit, on-site, SPP Campus, Little Rock, AR

March 30, 2017:

RCWG Meeting, SPP Campus, Little Rock, AR

June 29, 2017:

RCWG Meeting, SPP Campus, Little Rock, AR



Southwest Power Pool, Inc. (SPP)
RTO Compliance Department
Oversight Report – Q4 2016

PUBLIC

Reliability Compliance Working Group (RCWG):

The RCWG and SPCWG teamed up with SPP RTO and SPP RE to host the Mis-Operations Summit on the SPP Campus on October 26, 2016. There were participants from industry, from vendors, as well as NERC and FERC. The Summit was extremely successful in furthering the discussion of how the industry can reduce the overall number of mis-operations. The Summit received national recognition and was viewed as a very important step in a renewed focus on mis-operations within the electric industry.

Respectfully submitted,

Carl Stelly
Director of Compliance

Southwest Power Pool, Inc.

INTERNAL AUDIT

Report to the Oversight Committee

December 5, 2016

Staffing

- The Internal Audit department continues to be fully staffed.
- A request has been received for a temporary assignment of an IA staff member to assist IT Quality Control.

Activity Update

- 2015-2016 Audit Schedule – Updated (see attached)
- 2016-2017 Final Audit Schedule (agenda item 7)
- Audits/Assessments Completed Since Last Meeting:
 - **Z2 Crediting Process Internal Readiness Review**

The Internal Audit (IA) department has completed readiness review activities for the Z2 Crediting Process project including the historical data processing and the “go-forward” crediting process. The historical data processing covers credit payment obligations from 2008 until August 31, 2016. The “go-forward” crediting processing covers credit payment obligations for the period beginning September 1, 2016 forward. This report highlights the areas that were reviewed, provides recommendations, identifies Internal Audit observations and open items.

See attached for summary.
 - **Gas-Electric Harmonization (Gas Day) Internal Readiness Review**

Internal Audit has completed a readiness review for the Gas-Electric Harmonization (Gas Day) component of the Enhanced Combined Cycle (ECC)–Gas Day project. In April 2015 FERC (Order 809) revised its regulations to better coordinate the scheduling of wholesale natural gas and electricity markets in light of increased reliance on natural gas for electric generation, as well as to provide additional scheduling flexibility to all shippers on interstate natural gas pipelines. Order 809 moved the Gas Day’s 1130 Timely Nomination to 1300, changed the timing of the nomination cycles and added a 1900 intraday nomination. This timeline shift was made to better ensure the reliable and efficient operation of both the interstate natural gas pipeline and electricity systems.

See attached for summary.
 - **SPP Security Awareness Audit**

This audit is one of a continuing series of audit tests designed to test compliance with SPP’s corporate policies/procedures and SPP employee general security awareness. Additional tests that will be conducted include: periodic security awareness quizzes, USB devices and social engineering (e.g. requests for information and phishing emails).

See attached for summary.

- **Emergency Management and Business Continuity (EMBC) Plan Audit**

Internal Audit (IA) has been in the process of planning an audit of SPP's Emergency Management and Business Continuity (EMBC) Plan. The primary objective of this audit is to evaluate the completeness and appropriateness of SPP's EMBC Plan in responding to and recovering from an actual event. The EMBC plan is designed to first address Emergency Management (EM) which are the processes designed to enable an effective response to an event. These processes focus on stabilizing the situation and preparing for recovery operations. The Business Continuity Plan (BCP) is designed to address the recovery of critical business functions that relate to core business services.

See attached for summary.

- Audits Currently in Process:

- **Tariff Administration**

The primary objectives of the audit are to: obtain an overview of the various functions completed by the Tariff Administration department, industry standards that must be followed, and downstream data users; review the policies and procedures in place for functions performed by Tariff Administration and evaluate them for thorough coverage to protect the interest of SPP, its members and customers; examine internal controls for adequate design and effective operation; confirm required documentation/evidence is stored accurately and completely; determine downstream consumers of data are receiving data accurately and timely. The audit is in the reporting phase.

- **SPP Modeling Control Self-Assessment (CSA)**

The primary objectives of the CSA are for participants to: build a map of all SPP models/interfaces; develop "Fit for Purpose Statement" for each model by user; conduct CSA workshops with subject matter experts to develop/prove process maps; conduct CSA workshops with subject matter experts to identify risks and controls (including backup, versioning, system access and data change monitoring), develop/prove validations; CSA workshops to review internal and external coordination/communication; CSA workshops to review preparation for MOD 33 NERC Steady-State and Dynamic System Model Validation (in effect July 1, 2017). This audit is in the testing phase.

- **Identity Access Management**

The primary objective of this audit is to examine all physical and logical access for all employees and contractors. Logical access will be limited to user account domain, VPN, digital certificate and firewall access. Particular areas of concentration will be the following; access provisioning/de-provisioning processes, access provisioning/de-provisioning documentation, access provisioning/de-provisioning approvals, access change monitoring, periodic reviews of physical and logical user access, visitor and forgotten badge access, current SPP policies/procedures related to Identity Access Management (e.g. Physical Access, User Account Management, Password, Personnel Risk Assessment, Etc.). This audit is in the testing phase.

- **Transmission Congestion Rights Markets Processes**

The primary objectives of the audit are to: obtain an overview of the various functions completed by the Congestion Hedging department, compliance regulations that must be followed, upstream data dependencies, and downstream data users; review the policies and procedures in place for functions performed by Congestion Hedging and evaluate them for thorough coverage to protect the interests of SPP, its members and customers; examine internal controls for adequate design and effective operation; confirm required documentation/evidence is stored accurately and completely; review systems and system access related to the Congestion Hedging operations and processes; confirm exceptions to the process such as GFAs, LSE, LT TSR, etc. are documented and processes are evidenced to verify compliance and accuracy. This audit is in the reporting phase.

- **Z2 Historical Data Processing Audit**

The primary objectives of the audit are to: Obtain an overview of the various functions completed by staff/departments involved with the Z2 historical data processing, compliance with the SPP Tariff and other Z2 provisions that must be followed, upstream data dependencies, and downstream data users; review processes/procedures performed by involved Z2 historical data processing staff/departments; verify that processes/procedures are in place, documented and functioned/functioning properly for the implementation of the Z2 historical data processing; in addition, evaluate them to determine that thorough coverage to protect the interests of SPP and its members/customers; examine internal controls for adequate design and effective operation; confirm required/supporting documentation, validations, and overall evidence is stored accurately and completely; review systems and system access related to the Z2 historical data processing; confirm manual workarounds or exceptions to the processes are documented and processes are evidenced to verify compliance and accuracy. This audit is in the testing phase.

- **Off We Go LLC – Invoice Reimbursement Review (5/1/16 through 10/31/16)**

The purpose of this review is to review reimbursements made to Off We Go, LLC for use of their private aircraft for the period of May 1, 2016 through October 31, 2016. In addition, Off We Go's insurance policy is reviewed to confirm it meets the requirements listed in the Private Aircraft section of SPP's Expense and Travel Policy. The review is in the testing phase.

- **Off We Go LLC – Aircraft Ownership Cost Review (Rate)**

The purpose of this review is to review costs and consumables in support of the November 2016 rate adjustment charged for use of the Off We Go, LLC private aircraft. The review is completed, in part; to fulfill Southwest Power Pool, Inc.'s (SPP) commitment to FERC Office of Enforcement's recommendation that SPP should "perform an analysis to validate the fairness and reasonableness of any cost factors submitted by the CEO and CFO for purposes of reimbursement." The review is in the testing phase.

- **Audits Currently in Planning:**

- Application Access
- Budget/Forecasting
- Data Management/Changes CSA

- Upcoming Audits:
 - SPP Security Awareness
 - Contract Management
 - Enhanced Combined Cycle (ECC) Internal Readiness – Gas Day Phase 2
 - Study Deposits, Invoicing and Customer Refund Tracking, Phase 2
 - Credit Stack (Z2) Current production
 - SPP Tariff Compliance Process
- Other Activities:
 - Controls audit (SSAE 16/SOC1) work:
 - 2016 SOC 1 Type 2 Audit:
 - Completion of periodic control activity reviews:
 - ❖ SOC 1 Audit period November 1, 2015 – October 31, 2016
 - 67 completed to date, 0 in process (80 total Business control activities, 13 observation only)
 - 24 completed to date, 0 in process (30 total General IT control activities, 6 observation only)
 - Facilitated the review and update to SPP's portion of the audit report narrative
 - Facilitated completion of SPP's Management Assertion and Management Representation Letter
 - 2017 SOC 1 Type 2 Audit:
 - Completion of periodic control activity reviews:
 - ❖ SOC 1 Audit period November 1, 2016 – October 31, 2017
 - 0 completed to date, 0 in process (97 total Business control activities, 13 observation only)
 - 0 completed to date, 0 in process (30 total General IT control activities, 6 observation only)
 - Other consulting/advising:
 - Credit Stack (Z2) process – including Z2 SOC 1 practice Walkthroughs and drafting of control objective/activities
 - Transmission Service Market Improvement team
 - MOD-033 consulting with SPP Engineering
 - Participated in panel discussion during November 9th Settlements User Group Conference
 - Involved in discussions concerning MISO Revenue Distribution Settlement Proceeding

Respectfully submitted,

Lauren Krigbaum
Director, Internal Audit



MARKET MONITORING ACTIVITY REPORT TO THE OVERSIGHT COMMITTEE

5 December 2016

I. MMU Staffing

- MMU is now fully staffed. Cristie Turner joined the MMU staff on December 1. She is an engineer with about 10 years of experience in the gas utility industry. Jared Greenwalt will be joining the MMU on December 16. Jared is an analyst that has been working in the Market Design group for the last four years. We are extremely pleased to have these two outstanding individuals join the MMU team. The MMU will be starting the search for an energy economist as soon as the full Board of Directors approves the MMU request for an additional staff member for 2017.

II. Federal Energy Regulatory Commission (FERC)

- The MMU continues to have conference calls with FERC staff every other week. Recent discussions have focused on MMU recommendations to the Board of Directors as part of the ASOM Reports and potential market manipulation cases. Other topics include Integrated Marketplace screens, FERC NOPRs, proposed market rule changes not related to ASOM recommendations, market inefficiencies, and possible market rule violations.
- The MMU is implementing improvements as recommended in the FERC audit report and preparing for the first quarterly report due in January 2017.

III. Market Surveillance and Reporting

- The MMU published: 1) Monthly Market Reports through the MWG for the months of September and October and 2) Quarterly State of the Market report for Fall 2016 will be published in December.
- The MMU is starting on the 2016 Annual State of the Market (ASOM) report. Current work includes automation of existing metrics, development of new metrics that were deferred from the 2015 report, and assessing metrics recommended by Potomac Economics in their review of our activities.

IV. Market Analytics

- MMU Recommendations to SPP Board of Directors – The MMU continues to work with SPP staff and the MWG regarding open recommendations:
 - The MMU considers the recommendation regarding potential OOME manipulation of Make Whole Payments closed. The risk of abusive behavior for this matter is low enough and the cost of implementing rules to prevent the behavior high enough that the MMU considers monitoring a reasonable approach to addressing the concern.
 - The MWG and SPP staff are making progress at addressing two additional MMU recommendations regarding manipulation of Make Whole Payments though formal revision requests have not been submitted to the MWG. The two topics are minimum run time in excess of two days and the use of fixed regulation bids.



- Allocation of Over-Collected Losses – SPP staff has developed a proposal that has been submitted to the MWG. The MMU has reviewed the final draft and considers this version acceptable at preventing potential manipulation.
- The MMU reviewed the latest draft Physical Withholding Penalty language with the MWG. The MMU will submit a formal revision request to the MWG in December.
- The MMU has formally referred one inquiry to FERC and closed several other behavior studies.

V. Other Items

- The MMU hosted the Energy Intermarket Surveillance Group conference in early November. Market Monitors from around the world attended the conference. All the sessions were directly relevant to Market Monitoring responsibilities and resulted in thought provoking and educational discussions.

Respectfully submitted
Alan McQueen
Director, Market Monitoring and Analysis

POSSIBLE TOPICS FOR THE 2017 *LOOKING FORWARD REPORT* FOR DISCUSSION AT THE DECEMBER 5, 2016 MEETING OF THE SPP OVERSIGHT COMMITTEE

The primary theme that runs through the following possible chapters of the 2017 Looking Forward Report is this strategic question: “Will grid power remain competitive in the coming decades?”

I. The Shale Gas Revolution (Update based on new information)

The shale gas revolution has meant low and relatively stable natural gas prices which, in turn, has meant low and relatively stable spot electricity prices. In this sense the revolution has helped to keep grid power competitive. The issue this year, as it has been since it began, is will the revolution continue.

- A. This Chapter starts with an update of the history of (a) U.S. natural gas prices (at Henry Hub) from about 2000 to today and (b) U.S. natural gas production over that same period – including the share of the total attributed to shale gas and other unconventional gas supply.
- B. This year we will add the same information about U.S. oil production to show that the oil industry, too, has undergone a revolution. We will also draw out the direct connection between the natural gas and oil revolutions – for example, the role of associated gas production from oil wells and the production of natural gas liquids at gas wells.
- C. Next, we turn to the point that constant productivity increases in shale gas production are central to the continuation of the low prices of the revolution. This year we will start with EIA’s Drilling Production Reports which measure the productivity of new wells in each of the major gas basins. Last year we focused on a study that pointed to the likely advances in technology allowed by Big Data Analysis; we will pursue this theme again and look for new sources – especially from gas and oil services firms.
- D. We then will turn to forecasts of natural availability and price. Rather than rely only on EIA and other oft-cited forecasts, we will pursue the forecasts on the future prices of natural gas and oil that are implicit in the financial statements of major companies such as BP and Exxon – there is a big push by activists to have such companies reduce the value of their reserves due to both the revolution and climate change initiatives. Other corporate transactions also reflect strategic forecasts of the future of gas and oil – examples include GE’s venture with Baker Hughes and Saudi Arabia’s large sale of bonds.
- E. After that we will look at two other impacts of the revolution. One is the use of shale gas technology in other countries most notably China. Two is data on exports of LNG from the U.S.
- F. Finally, we will discuss the possible effect on the revolution from President-Elect Trump’s America First Energy Policy.

II. EPA’s Continued Environmental Campaign (Update based on new information)

Environmental regulation has had and will continue to have a significant effect on the competitiveness of grid power. Going forward, these regulations could increase the cost and possibly lower the reliability of grid power in several ways: (a) by shutting low cost coal-fired power plants or otherwise requiring them to install expensive environmental controls; and (b) requiring a shift of generation from less costly fossil fuels to costlier renewables. President Obama’s Clean Power Plan (CPP) is under challenge because it thought by some to do both.

- A. Because of its potentially important impact, the U.S. Supreme Court has stayed EPA implementation of the CPP through the time needed for legal proceedings at both the DC Circuit Court of Appeals and the Supreme Court itself if it chose to hear an appeal on the eventual DC Circuit ruling. The two-part stay is highly unusual and we reported on it in the 2016 Looking Forward Report. In the 2017 Report, we will update the Board on the court action.
- B. Note that in September 2016 the DC Circuit heard oral arguments for seven hours – a very long time given that oral argument is often limited to one hour. The strongest argument supporting the CPP is that the Supreme Court has already ruled that the EPA has the authority to regulate Greenhouse Gases (GHG) under the existing Clean Air Act (in *Massachusetts vs EPA*). And, equally important, the CPP is simply the way the EPA has decided to implement that existing authority; proponents of the CPP say that the courts should defer to the EPA since it is asking electric utilities to do the same kinds of things they are already doing, such as shifting from fossil fuels to renewables. The counter argument is that the CPP is such a “transformative” action that it requires explicit approval by the Congress – not just a review by judges. We will summarize both sides of the argument.
- C. An important backdrop to predicting what will happen with the CPP is President-Elect Trump’s views on global climate change and whether his Administration would somehow slow or block EPA from implementing the CPP. President-Elect Trump has referred to global climate change as a hoax, but in recent interviews with the *New York Times* he said he keeps an open mind. We will report on his Administration’s actions.
- D. Beyond the CPP itself, we will update the Board on proposals for a carbon tax to replace mandates and money for specific technologies like wind and solar. Exxon Mobil’s support for a carbon tax is an example of what we will look into.

III. Update on the Changing Utility Model (Update)

Previous *Looking Forward Reports* have noted increasing interest and discussion of changing utility business models. Such changes threaten both the efficacy of existing regulatory structures and billions of dollars of investment, while also providing utilities and new entrants with new growth and investment opportunities. Last year, we covered several topics in depth, including the cost of wind and solar, both with and without subsidies, and the relative cost of utility-scale solar vs. community and distributed solar. This chapter will deepen the discussion from previous

years; as always, we will rely on relevant, timely studies from leading authors and entities, including ICF, the Analysis Group, and more.

- A. We will focus first on energy storage, which will play a crucial role in the future of the electricity industry. We will provide updated cost estimates for new storage devices across a variety of technologies and will provide anecdotes based on our procurement experience in California—including storage’s participation in wholesale markets. We will also consider efforts by FERC to redefine energy storage as both a generation and transmission asset, and what that might mean for SPP.
- B. We will also look deeper at demand for electricity. This includes:
 - The impact of energy efficiency on load and load forecasts
 - The impact of distributed generation on demand, including in SPP, which serves load “net” of distributed generation
 - End-user participation in the stakeholder and policymaking process, which follows from increased end-user participation in the electricity markets; we will also look for evidence of customer dissatisfaction with the cost of transmission (such as a very recent example in PJM in which a consumer group filed a complaint against PJM at FERC).
- C. We will also look deeper at community solar, including its penetration, investment and financing profile, up-to-date costs, and data on its reliability vis-à-vis utility-scale solar delivered by the transmission grid.
- D. We will also look for (i) technological developments – such as “blockchain” technology, which allows for secure transactions for direct sales from energy producers to consumers on the distribution grid, and which is being developed and tested by Siemens in New York City – (ii) regulatory initiatives, such as that in Maryland meant to encourage a less centralized grid, and (iii) efforts by utilities to embrace, rather than oppose, decentralized resources and opportunities.

IV. Jurisdictional Issues in the Electricity Industry (Update based on new information)

In the past few Looking Forward Reports, we have brought the Board information about significant and impactful activity in the jurisdictional split between federal and state regulators in the electricity business. In light of two Supreme Court decisions handed down in the last year, we noted that the decisions – which allowed the federal government to preempt the states in resource planning – could threaten other state programs, including state Renewable Portfolio Standards (RPS).

In this year’s Report, we will provide an important update involving a procurement for renewable generation resources in Connecticut, Massachusetts, and Rhode Island – the so-called “Tri-State RFP.” That RFP, which short-listed about 460 MW worth of renewable generation proposals, was temporarily put on hold by the U.S. Court of Appeals for the Second Circuit. The Court’s order came in response to a legal challenge by a losing bidder

in the RFP; the bidder argued that Connecticut could only set wholesale rates by complying with the Public Utility Regulatory Policies Act of 1978; the bidder also cited the *Maryland* Supreme Court case we have covered in depth in past Looking Forward Reports. Our update will provide a complete summary of this case and we will look for legal experts' opinions on the potential outcome and impacts.

V. Electric Vehicles (Brief Update)

In past reports, we have discussed the potential demand shock inherent in the electric vehicle industry, which would add the automotive transportation industry as a huge new buyer of electricity. Last year, we introduced the concept of the “SHEAM” model – shared, electric, automated vehicles – which some analysts believe will revolutionize how automobiles are purchased, owned, and operated in the U.S. and elsewhere. This year, we look at two contrasting forces: stricter federal fuel standards (42 mpg by 2020) and a stubbornly-lagging EV penetration of less than one percent. We will provide important updates on developments in electric vehicles. Updates would include:

- A. Uber’s latest efforts with driverless vehicles
- B. Tesla’s progress – and problems – with its vehicles, including its driverless vehicle effort “Autopilot 8.1”
- C. Efforts to provide a decentralized electric vehicle charging grid, which is designed to reduce “range anxiety” related to EVs.
- D. Potential reductions in available subsidies for EVs related to the Trump administration and potential impacts on EVs related to import tariffs on foreign autos.

VI. New Technology (Short New Topic)

New science and technology are consistently offered as the solution to any problem in the American economy in general and the electricity business in particular. As we have emphasized at other times this new science and new technology does not come out of the blue. Rather it is directed by incentives created by law, regulation, culture and other factors.

Further, it is important to look outside of the electricity business for the new science and technology that may transform the electricity business. Two recent Nobel Prizes will be used to illustrate the point that transformative change for the electricity business can come out of research and development that is not focused on electricity.

- A. In 2010 the Nobel Prize in Physics was awarded to Andre K. Geim and Konstantin S. Novoselov for “producing, isolating, identifying and characterizing graphene” which is a single atomic layer of carbon. The excitement about graphene incites seemingly fantastical claims including that “graphene membranes could be used to sieve hydrogen gas from the atmosphere – a development that could pave the way for electric generation

powered by air.”

- B. In 2016 the Nobel Prize in Chemistry was awarded to three European scientists for “their design and production of molecular machines” thus starting the “miniaturization of technology.” What caught our eye was the analogy drawn to the discovering of electric motors in the early 1800s by the British scientist Michael Faraday. Now as then the question of ‘what will this discovery mean for Mankind’ is left unanswered, but the possibilities can be imagined. It is thought that “Molecular machines will most likely be used in the development of things such as new materials, sensors and energy storage systems.” They have already been used to build “miniature four-wheel-drive cars.”
- C. The mention of possible use for energy storage is important since the Board has expressed a strong interest in storage devices. A recent study concluded that battery energy storage in particular will be “a disruptive technology that will flourish and help transform how electrical power is generated, distributed and consumed.” We will focus on the potential of such new storage devices to enhance or compete with the grid—the discussion here will be meshed with the discussion in Section III.

VII. Potential Impact of the Energy Policy Modernization Act (Short New Topic)

In April 2016, the U.S. Senate passed the Energy Policy Modernization Act; a year earlier, the House passed its own energy act. Congressional committees are at work reconciling the two bills into one, which, if it becomes law, would be the first passed energy bill in about a decade. In this chapter, we would review the 800-page Act and reconcile differences between the Senate and House versions. We would consider what the Act would mean for SPP, particularly for the hardening of the grid and energy efficiency investments.

VIII. RTO Spot Markets: Are they failing nuclear generation? (Short New Topic)

A brief, new topic this year, we would look at spot markets administered by RTOs, including SPP, on one narrow point: are the RTO markets working for nuclear generators? Since 1990, according to EIA, nuclear generation has provided about 20% of generated electricity each year. And venture capitalist Peter Thiel, in a recent New York Times editorial championing nuclear generation, said that if we had not stopped developing nuclear generation after Three-Mile Island, the grid would already be carbon-free. Nevertheless, despite their zero-emissions profile, nuclear generators, across the country, are closing down for economic reasons. Since October 2012, fourteen nuclear facilities across the U.S. have retired or announced impending retirements. In this chapter, we would:

- A. Using SNL Financial, provide a detailed map and description of every retired (or announced to-be-retired) nuclear generator in the U.S. since 2012.
- B. Consider case studies, from San Onofre in California, to Fort Calhoun in Nebraska, to Clinton in Illinois, to Vermont Yankee in Vermont.

- C. Evaluate reasons for these economic retirements, including RTO spot markets' role in supporting – or not supporting – existing nuclear generation.
- D. Analyze proposed and/or existing legislation and policies to support existing nuclear generation, including policies in New York and Illinois for REC-type instruments for nuclear generation.
- E. Consider any implications that may matter to SPP, including potential capacity issues and also for modular nuclear generation, a topic we have covered in the past.

Southwest Power Pool, Inc.
OVERSIGHT COMMITTEE

Organizational Group Scope Statement

April 25, 2017 ~~October 29, 2013~~

Purpose

The Oversight Committee (OC) is responsible for monitoring compliance with SPP and regulatory policies for the company in accordance with its scope as approved by the Board of Directors.

Scope of Activities

- a) Oversee the process of monitoring compliance to SPP and NERC policies other than that assigned to the Regional Entity Trustees under these Bylaws;
- b) Oversee the Internal Audit function and receive regular reports, except for work associated with controls audits and other financial requirements;
- c) Oversee the Market Monitoring function and receive regular reports;
- d) Review and approve the MMU budget, subject only to approval by the Board of Directors as part of the overall SPP budget;
- e) Make decisions regarding the market monitoring unit (MMU) Director's compensation and performance review, disciplinary actions, and other related proceedings;
- f) Review and approve MMU staffing decisions (hiring, retention, and termination), salary, and disciplinary decisions;
- g) Determine the MMU performance compensation and approve the MMU Director's distribution of these funds to MMU staff;
- h) Review the overall assessment of the SPP MMU's effectiveness on an annual basis;
- e)–
- d)j) Oversee the Compliance function and receive regular reports;
- e)j) Independently review activities of the S staff;
- f)k) Oversee the process for, and approve, Independent Expert Panels associated with the Order 1000 implementation process;

- g) Discuss with management and the independent auditors the company's guidelines and policies with respect to corporate risk assessment and risk management;
- h)m) Hear and rule on appeals from Members regarding penalty assessment or fine distribution, other than those resulting from the Compliance Monitoring and Enforcement Program, prior to dispute resolution proceedings;
- i)n) Recommend Criteria changes necessary for enforcement of mandatory compliance and in response to unclear enforcement provisions of Criteria;
- j)o) Grant specific additional authority to the Sstaff responsible for the compliance monitoring function when needed to perform challenging investigations;
- p) **Oversee and receive reports on business continuity plans and assessments;**
- k)q) Complete a self-assessment annually to determine how effectively the OC is meeting its responsibilities; and
- l)r) Perform such other functions as the Board of Directors may delegate or direct.

Representation

The OC shall be comprised of three members from the Board of Directors.

Reporting

The Oversight Committee reports directly to the Board of Directors.

Southwest Power Pool, Inc.
OVERSIGHT COMMITTEE
Annual Work Plan

New Schedule

Tuesday, February 7, 2017 - DFW AAdmirals Club

Agenda Items:

- Compliance Quarterly Activity Report
- Security Activity Report
- Create IEP Panels to review RFP responses (late Feb. Conf. Call)
- Review Annual Self-Assessment
- MMU Executive Session
 - Review MMU performance for previous year
 - Review MMU Executive Director's performance and compensation
 - Review and approve MMU merit increases and performance compensation
- Ad Hoc (**)

Thursday, April 13, 2017 – Tulsa

Agenda Items:

- IA Quarterly Activity Report
- Security Activity Report
- MMU Quarterly Activity Report
- Looking Forward Report
- Business Continuity Plans/Assessment Report
- MMU Executive Session
- Ad Hoc (**)

Monday, June 12, 2017 – SPP Little Rock

Agenda Items:

- Compliance Quarterly Activity Report
- IA Quarterly Activity Report
- Security Activity Report
- Review Annual MMU/Compliance/Internal Audit Departmental Budgets/Plans
- Review MMU Annual State of the Market Report
- MMU Executive Session
- Ad Hoc (**)

Tuesday, August 1, 2017 – DFW AAdmirals Club

Agenda Items:

- IA Quarterly Activity Report
- Security Activity Report
- MMU Quarterly Activity Report
- Review Draft Internal Audit Annual Plan
- Review fixed-cost reimbursement for Off-We-Go
- MMU Executive Session
- Ad Hoc (**)

Southwest Power Pool, Inc.
OVERSIGHT COMMITTEE
Annual Work Plan

Tuesday, October 3, 2017 –DFW AAdmirals Club

Agenda Items:

- Compliance Quarterly Activity Report
- Security Activity Report
- MMU Quarterly Activity Report
- Recommend to Board Independent Expert Panel (IEP) pool candidates
- Perform Annual Organizational Group Self-Assessment
- MMU Executive Session
- Ad Hoc (**)

Monday, December 4, 2017 – SPP Little Rock

Agenda Items:

- Compliance Quarterly Activity Report
- IA Quarterly Activity Report
- Security Activity Report
- MMU Quarterly Activity Report
- Approve Annual Internal Audit Plan
- Review/Approve Internal Compliance Program
- Approve Annual Compliance Audit Plan
- MMU Executive Session
 - Review MMU goals for upcoming year
- Ad Hoc (**)

**:

- Guidelines/Policies on Corporate Risk Assessment/Management
- Member Appeals on penalty assessment or fine distribution
- Market Design Flaws
- Criteria changes necessary for mandatory compliance enforcement
- Other Board assigned Responsibilities
 - (Engage Independent MM to perform Looking Forward Report)