Southwest Power Pool, Inc.

OVERSIGHT COMMITTEE MEETING

October 29, 2018

SPP Corporate Campus, Little Rock, AR

• M I N U T E S •

Executive Session 1

Josh Martin called Executive Session 1 to order at 7:00 AM. Members in attendance included: Bruce Scherr (Director), Harry Skilton (Director), Graham Edwards (Director), and, Phyllis Bernard (Director). MMU staff in attendance included: Jodi Woods, Nick Parker and Keith Collins. The Committee met in Executive Session with MMU staff only and discussed **Call to Order/Administrative Items (Agenda Item 1)**, **Action Items/Other MMU matters (Agenda Item 2)**, and, **MMU Annual Budget Review/Approval (Agenda Item 3)**.

Executive Session 2

Agenda Item 4 – Administrative Items

Josh Martin called session 2 to order in executive session at 9:15 AM, noting that the Committee had commenced on time (7AM) on the morning after the Boston Red Sox clinched the 2018 World Series title. SPP staff in attendance included Nick Brown, Barbara Sugg, Sam Ellis, Stan Chapman, Erin Cullum-Marcussen, Lauren Krigbaum, Ben Bright, Aaron Shipley, Keith Collins, Jodi Woods, and Nick Parker (Attendance – Attachment 1).

Bruce Scherr moved and Harry Skilton seconded adoption of the July 24, 2018 Oversight Committee teleconference minutes, which were unanimously accepted (Minutes 7/24/2018 – Attachment 2).

Agenda Item 5 – Action Items Report

Michael Desselle provided a status report on the follow-up action items.

Agenda Item 6 – Approve 2019 Independent Expert Panelists (IEP) Candidate Pool

Ben Bright outlined staff's presentation to the Committee regarding population of the 2019 Independent Expert Panel (IEP) pool (IEP Pool Recommendation for 2019 – Attachment 3 *(confidential)*). Ben Bright and Aaron Shipley walked through the process of making their recommendation and then presented for the OC their recommendation that 13 of the 2018 IEP pool members be renewed for 2018 and that new applicants John Mills and Tip Goodwin be approved for the 2019 IEP pool. Staff also answered procedural and timing questions. Following a motion by Bruce Scherr to adopt staff's recommendation, Graham seconded the motion and it passed unanimously.

Agenda Item 7 – Joint RTO/MMU Presentation on "Storage"

Richard Dillon presented to the Committee background on FERC's Order 841 dealing with electric storage resources and SPP's associated compliance filing (Electric Storage Resources – Attachment 4). Richard provided background and timing of FERC's order noting that a compliance filing is due on December 3, 2018 with implementation to occur the following December (2019). He reminded the OC of the guidance and policies FERC articulated in its Order. He described the changes proposed for this filing including: the capability to dispatch an Energy Storage Resource (ESR) to withdraw energy; inclusion in the dispatch logic the operational parameters for charging; and, inclusion of an exception to transmission charges for withdrawals when under SPP direction. Richard and Keith Collins described the MMU's involvement in the design of the mitigated offer and other mechanisms. Keith noted that no other RTO has a mechanism like what SPP is proposing in its compliance filing. Bruce Scherr noted that this mechanism takes SPP beyond the mere "matching market concept" and treats these resources as more of a true commodity. Further, he noted that storage's role will only get larger and cautioned staff to give a lot of thought to the data that needs

to be captured for these resources. Further, Bruce highlighted that this is a very important strategic matter for the OC to continue to monitor.

Agenda Item 8 – Update on Current Activities

Compliance - Erin Cullum presented a quarterly compliance update and apprised the Committee on the status of the CIP audit, open enforcement actions status, and other quarterly compliance department activities. Committee members reinforced support for the expeditious and robust implementation of staff's effort to incorporate the Governance, Risk, Compliance (GRC) tool.

Security - Sam Ellis discussed key cyber metrics. Sam suggested a broader discussion at the next OC meeting with the potential for some proposed new metrics in 2019.

Barbara Sugg initiated discussions amongst the Committee members on two topics. The first regarded a recent article from National Association of Corporate Directors (NACD) publication, "Where You're Weak" by Jennifer Pellet that discussed the challenges that most companies face when it comes to addressing cyber vulnerabilities. The article included recommendations stemming from a Cyber Risk Forum specifically for boards and management to consider as they mitigate cyber risk to their organizations.

Barbara then reviewed with the Committee management's internal policy on ransomware. She described the issue and shared with the Committee senior management's policy. Following discussion, the OC endorsed SPP's internal policy.

Internal Audit Department Budget – Lauren Krigbaum presented Internal Audit's 2019 Budget Forecast (IA Budget Forecast – Attachment 5). She noted that she is expecting a 2% increase over 2018 due to the fact that our external auditor that performs the SOC1 analyses will have increased audit testing as a result of implementation of the SPP Settlement replacement project. It was noted that the Settlement replacement project failed to estimate the costs associated with testing of legacy as well as new settlement management systems. Accordingly those will be out-of-pocket costs.

Market Monitoring Unit – Nick Parker presented a status of recent reportable MMU activities (MMU Activity Report – Attachment 6).

Agenda Item 9 – OC 2018 Self-Assessment

The Committee discussed 2018 major accomplishments and 2019 major pending issues for inclusion in the annual Organizational Group self-assessment. Staff will edit the document consistent with the discussions.

Agenda Item 10 – Action Items

Action items are:

- Staff to edit self-assessment consistent with discussions and circulate to the Committee for concurrence.

Agenda Item 11 – OC 2019 Draft Annual Work Plan and Future Meetings

The Committee discussed the 2019 meeting schedule.

Adjournment

Josh Martin adjourned the meeting at 11:50 AM.

Respectfully Submitted,

Michael Desselle

OVERSIGHT COMMITTEE MEETING

October 29, 2018

SPP Corporate Campus, Little Rock, AR

• A G E N D A •

7:00 a.m. – 1:00 p.m. EDT

Executive Session (OC Members & MMU only) ..... Oversight Committee and MMU

1. Call to Order/Administrative Items .....Josh Martin
2. Action Items Report/Other MMU Matters..... Keith Collins
3. MMU Annual Budget Review/Approval..... Keith Collins

Executive Session (Visitors Excluded).....Oversight Committee and RTO Staff

4. Administrative Items.....Josh Martin
5. Action Items Report.....Michael Desselle
6. Approve 2019 Independent Expert Panelists (IEP) Candidate Pool ..... Ben Bright
7. Joint RTO/MMU Presentation on "Storage".....Richard Dillon/Keith Collins
8. Update on Current Activities
   - Compliance .....Carl Stelly
   - Security Update..... Sam Ellis
   - Internal Audit Department Budget .....Lauren Krigbaum
   - Market Monitoring Unit..... Keith Collins
9. OC 2018 Self-Assessment.....Josh Martin
10. Action Items.....Michael Desselle
11. OC 2019 Draft Annual Work Plan and Future Meetings.....Josh Martin

2018

Monday, December 3, 2018	7AM – 1PM	SPP, Little Rock

2019

Monday, January 28, 2019	7AM – 1PM	New Orleans
Monday, April 15, 2019	8AM – 3PM	Tulsa, OK
Monday, July 29, 2019	7AM – 1PM	Des Moines, IA
Monday, October 28, 2019	7AM – 1PM	SPP, Little Rock
Monday, December 2, 2019	7AM – 1PM	SPP, Little Rock

SPP Southwest Power Pool

Southwest Power Pool, Inc.

OVERSIGHT COMMITTEE MEETING

October 29, 2018

SPP Corporate Center, Little Rock, AR

• ATTENDANCE LIST •

Name	System
Josh Martin	Director
Graham Edwards	Director
Tony Skelton	Director
Phyllis Bernard	Director
Jodi Woods	MMU
Nick Parker	MMU
Keith Collins	MMU
Bruce Scherr	Director
Barbara Sugg	SPP
Michael Desselle	SPP
Aaron Shipley	SPP
Ben Bright	SPP
Stan Chapman	SPP
Erin Cullum Marcussen	SPP

Southwest Power Pool, Inc.

OVERSIGHT COMMITTEE MEETING

July 24, 2018

Teleconference

• M I N U T E S •

Executive Session 1

Agenda Item 1 – Call to Order/Administrative Items

Josh Martin called the meeting to order in executive session at 11:05 AM. Members in attendance included: Bruce Scherr (Director), Harry Skilton (Director), Graham Edwards (Director), and, Phyllis Bernard (Director). SPP staff in attendance included Nick Brown, Barbara Sugg, Sam Ellis, Paul Suskie, Carl Stelly, Erin Cullum-Marcussen, Lauren Krigbaum, Keith Collins and Barbara Stroope.

Bruce Scherr moved and Phyllis Bernard seconded adoption of the June 11, 2018 Oversight Committee meeting minutes, which were unanimously accepted (Minutes 6/11/2018 – Attachment 1).

Agenda Item 2 – Action Items Report

Michael Desselle provided a status report on the follow-up action items. He reported that the FERC had closed out (with no penalty) the Good Catch on Collateral Reconciliation matter. He reported that staff had distributed the final GridEx report link to OC members and that the Director of Risk Management will ensure MMU inclusion in future EMBC and/or GridEx exercises.

Agenda Item 3 – Internal Audit Activity Report

Lauren Krigbaum noted for the Committee that the Internal Audit department is fully staffed. Her report consisted of three matters: an updated 2017-2018 Audit Schedule; the 2018-2019 Proposed Annual Audit Schedule; and, reports on audits/assessments completed since the April Oversight Committee meeting. Lauren noted that three (3) audits are being rescheduled to later in 2018 (4th Quarter). Lauren indicated the audits that are rescheduled are: the Revision Request review; the Software Licensing CSA; and, the Security Awareness review. The Committee offered no suggested modifications or additions to the proposed 2018-19 annual audit work plan. Finally, Lauren provided summary reports on 4 completed audits (Application Access, Board and Officer Expense reporting, and, Off-We-Go's fixed cost reimbursement *and* aircraft ownership cost review).

Agenda Item 4 – Security Activity Report and CIP Audit Interim Report

Sam Ellis discussed key cyber metrics. Sam and Barbara Sugg, both, responded to Committee member questions regarding current day press reports of Russian state-sponsored hacking of electric utilities.

Carl Stelly, Barbara Sugg, and Erin Cullum provided a verbal report on the status of NERC's CIP audit currently underway.

Agenda Item 5 – MMU Activity Reports

Keith Collins provided his activity report and noted for the Committee: current staffing levels; recent FERC interactions; and, market surveillance and reporting activities (including, reports on the 2017 Annual State of the Market report to FERC, SPP market participants, SPP staff, the Energy Information Administration and the Iowa Utilities Board). Finally, Keith reported on other MMU activates and noted that the MMU staff is performing monthly lunch-n-learn sessions on various market topics. He also discussed State commission outreach and responded to Committee member inquiries regarding those outreach efforts.

Agenda Item 6 – Action Items

Action items are:

- Staff to share and review memorialized process changes resulting from the Board and Officer expense reporting audit;

- Staff to extend open invitation to RSC for MMU education opportunities; and,
- MMU Staff to circulate to the OC members, the MMU's "Negative Prices in the SPP Market" paper.

Agenda Item 6 – Future Meetings
The Committee discussed the remaining 2018 meeting dates and potential changes to the 2019 meeting schedule.

Executive Session 2
Josh Martin called Executive Session 2 to order at 12:35 PM. MMU staff in attendance included: Barbara Stroope and Keith Collins. The Committee met in Executive Session with MMU staff only and discussed **Administrative and Action Items (Agenda Item 8)**, and **Other MMU matters (Agenda Item 9)**.

Adjournment
Josh Martin adjourned the meeting at 2:50 PM.

Respectfully Submitted,

Michael Desselle

SPP Southwest Power Pool

Electric Storage Resources

FERC Order 841 Compliance

Background of Order 841 – Electric Storage Resources

- FERC issued a Notice of Proposed Rulemaking (NOPR) in November 2016 about both electric storage and distributed energy resources
- FERC issued a final rule on electric storage in February 2018 with a compliance filing date of December 3, 2018 and an implementation date of December 2019
  - FERC acknowledged that all matters regarding storage are not addressed in the compliance requirement and additional filings will be necessary
- Distributed energy resources are subject to a new NOPR

What is an Electric Storage Resource (ESR)?

- "a resource capable of receiving electric energy from the grid and storing it for later injection of electric energy back to the grid."
  - The definition is deliberately technology agnostic and may include pumped storage, batteries, or any other technology capable of "time shifting" energy.
  - Electric storage may be connected to the distribution lines and are not required to be registered as resources unless they are injecting to the Transmission System.

What new guidance has FERC given in the Order?

- ESR must be allowed to self-determine charging activity
- ESR must be allowed to provide all services (both market and non-market) that it can technically qualify
- Charging as a result of an RTO instruction to provide a service is not subject to transmission service bill

What policies has FERC reiterated in this Order?

- Injections to the Transmission System are FERC jurisdictional
- Withdrawals from the Transmission System are subject to transmission charges
- Charging is not an "end-use" but rather a "sale for resale"
- Provision of a service must be allowed on a non-discriminatory basis

What changes are proposed for the compliance filing?

- Include the capability to dispatch an ESR to withdraw energy
- Include in the dispatch logic the operational parameters for charging
- Include an exception to transmission charges for withdrawals when under SPP direction

- Over 400 pages of language to accomplish

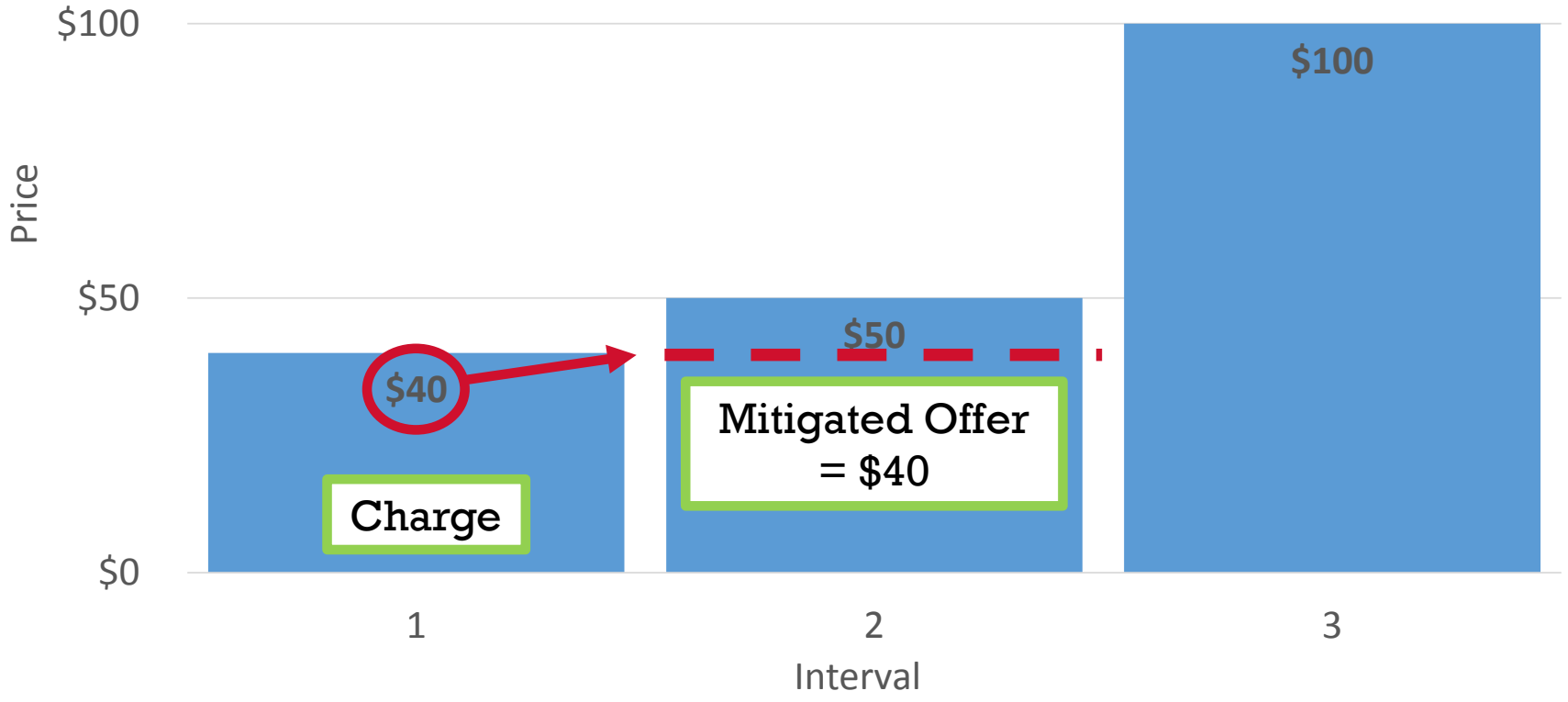
FERC Order 841: MMU involvement

- MMU actively reviewed RTO design modifications and provided feedback

- The RTO asked the MMU:
  - To advise in development of mitigated offers
  - To propose updates to physical withholding and uneconomic production rules

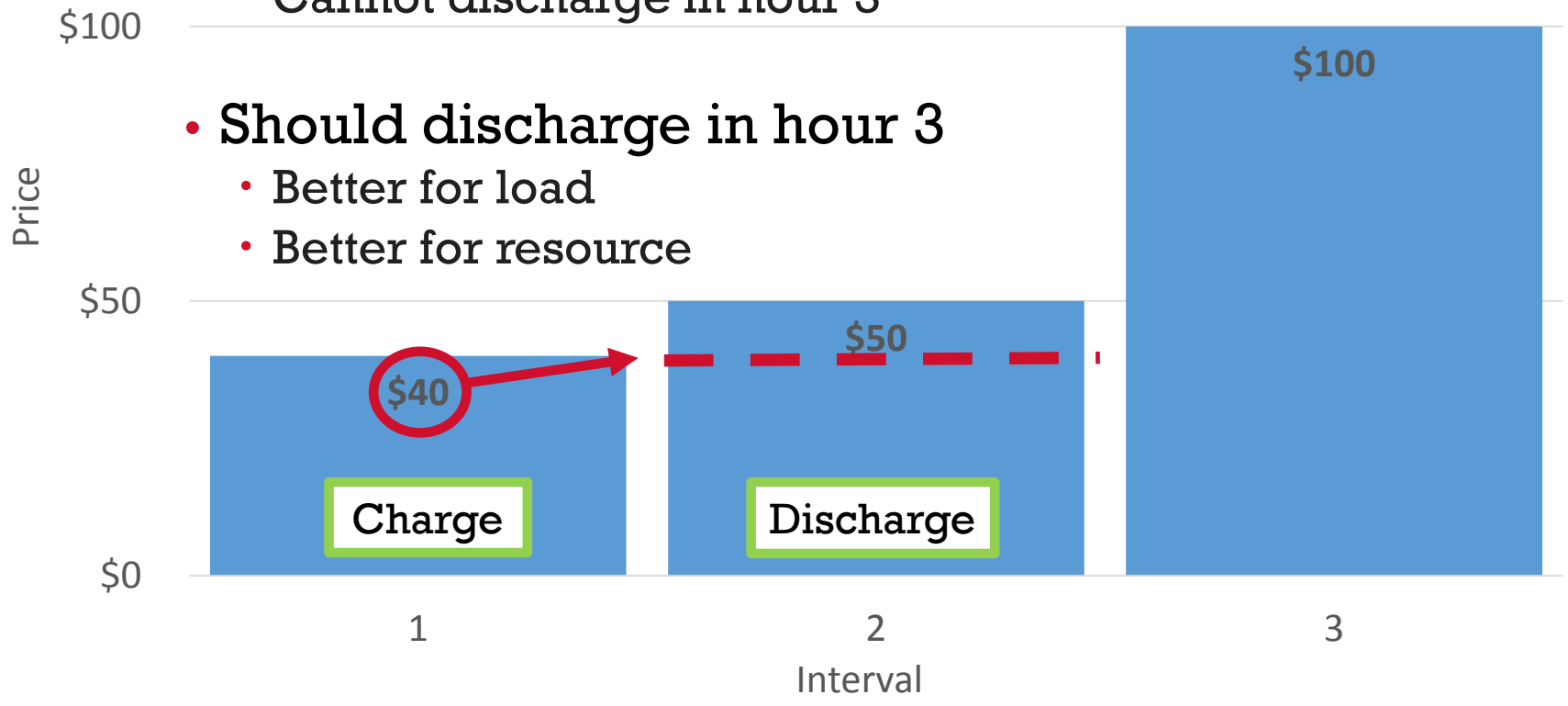
The mitigated offer should at least account for charging cost

- However, what happens if the offer in hour 2 is only charging cost?



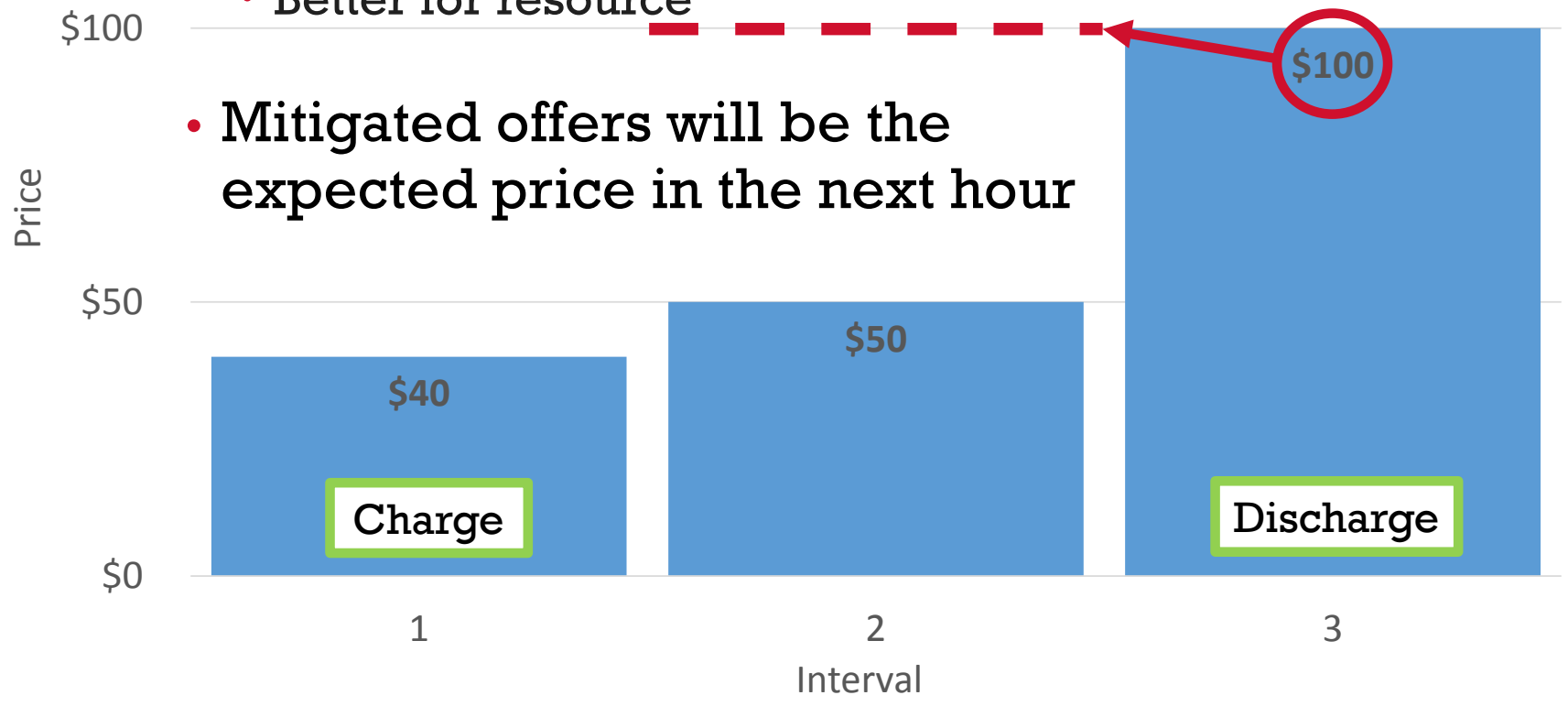
Charging cost not enough for the mitigated offer

- Price in hour 2 greater than charge cost in hour 1: $50 > $40
  - Unit will discharge in hour 2
  - Cannot discharge in hour 3
- Should discharge in hour 3
  - Better for load
  - Better for resource



Mitigated offer should include opportunity costs

- Mitigated offers will include opportunity cost in addition to charge cost
  - Better for load
  - Better for resource
- Mitigated offers will be the expected price in the next hour



Summary

- MMU proposed that mitigated offers for Electric Storage Resources include opportunity cost in addition to charging cost

- MMU proposed that physical withholding and uneconomic production apply to charging as well as discharging

Internal Audit

2019 Budget Forecast

2019 Budget Forecast* – Internal Audit

2019 Forecast	Line Item Description / Comments (required)
2,000	Miscellaneous Continuing Education for IA staff (CIA/CISA/CRMA exams, webinars, etc.)
600	NERC Certification Exam
2,600	Benefits, Cont Ed Total
2,000	Airfare - RTO/ISO Internal Audit meetings
1,000	Airfare - Finance and/or Oversight Committee meetings
500	Lodging - Finance and/or Oversight Committee meetings
2,000	Lodging - RTO/ISO Internal Audit meetings
100	Transportation/Parking - RTO/ISO Internal Audit meetings
60	Transportation/Parking - Finance and/or Oversight Committee meetings
300	Meals - RTO/ISO Internal Audit meetings.
5,960	Travel Total
410	ISACA annual dues
1,300	Institute of Internal Auditors (IIA) Group Dues
90	CISA License maintenance fees
500	Miscellaneous publications
2,300	Administrative Total
370,100	SOC1 Type2 audit (services, travel and out-of-pocket)
370,100	Services Total

*Excluding Salaries and Benefits/Taxes

2019 Budget Forecast Notes

- 2% increase over 2018
- Services – SPP Settlement System Replacement project will result in out-of-budget SOC1 expenses. The amount has not yet been determined. With a go-live date of May 1, 2019, KPMG will have to test the legacy Settlement systems in addition to the new Settlement Management System. Also, SPP is entering the final year of three-year SOC1 engagement with KPMG; engagement will go out for proposal in Q1 2019.

MARKET MONITORING ACTIVITY
REPORT TO THE OVERSIGHT COMMITTEE

October 29, 2018

MMU Staffing

- The MMU remains fully staffed with 16 authorized positions. Management changes occurred in October with Barbara Stroope leaving the department to pursue an opportunity as a manager in operations. Jodi Woods joined the MMU as the Manager of Market Policy and Reporting. Jodi has over 18 years experience at SPP and has 9 years of management experience from her previsous role in operations. This change was effective October 16.

Federal Energy Regulatory Commission (FERC)

- The MMU continues to have conference calls with FERC staff on a routine basis. We meet weekly with the Division of Energy Market Oversight and at least monthly with the Office of Enforcement (Division of Energy Market Oversight, Division of Analytics and Surveillance, and Division of Investigations) and the Office of Energy Market Regulation.
- SPP filed revision request 245 to include major maintenance in no-load and start-up offers on May 15. The MMU filed supporting comments. FERC accepted the revisions on October 18, however, with a reduced timeline to implement than previously planned. The MMU will have extensive involvement in reviewing the no-load and start-up adders proposed by the market participants.
- SPP filed revision request 231 to modify mitigation of Locally Committed Resources on July 17. The MMU submitted supporting comments as an attachment to the SPP filing. FERC approved these revisions on September 4 with an effective date of December 18, 2018. Implementation is expected in December.
- SPP is planning to file revision request 304 to modify the approval process for frequently constrained areas on October 22. The MMU submitted supporting comments as an attachment to the SPP filing.
- In September, Keith Collins visited FERC staff to present an overview of market highlights, and MMU recommendations to improve SPP markets. Keith also met with Commissioner Glick and Commissioner LaFleur on MMU independence, market highlights, and MMU recommendations.

Market Surveillance and Reporting

- The MMU published monthly market reports with the Market Working Group for the months of August, September, and October 2018.
- The MMU published its summer 2018 quarterly report on October 15. The MMU plans to have a lunch and learn session with SPP staff, and a teleconference call with market participants in early November to discuss the report highlights.
- The MMU has begun transitioning to Tableau as our new business intelligence tool, and have recentlly obtained full access to an ad hoc server, which holds our data. MMU staff have created

new visualizations for unit commitments, enhanced analysis for SPP capacity commitments, adjacent market prices, make whole payments, and wind forecasts. In addition, several metrics covering generation, load, and congestion have been moved from the old business intelligence tool to Tableau.

- SPP issued a hot weather alert from June 28 to July 1, 2018. Additional review and analysis was done on these operating days to assess any impact to the market. No adverse impacts were found.
- The MMU continues to review transmission congestion rights funding from the day-ahead market on a weekly basis and reviews causes of excessive overfunding and underfunding.

Market Design

- MMU Recommendations to SPP Board of Directors – the MMU continues to work with SPP staff and the Market Working Group regarding open recommendations.
    - In July, the MOPC and Board of Directors voted in favor of revision request 306 that will address one of the MMU's 2015 Annual State of the Market report recommendations related to the minimum run time of generators. SPP staff expect to file this with FERC in October or November. If FERC approves the proposal, it will address the MMU's concerns about make whole payments for recources that have minimum run times that force multi-day commitments.
    - In the 2015 Annual Report, the MMU recommended requiring non-dispatchable resources (NDVER) to become dispatchable (DVER). SPP staff developed revision request 272 which required a conversion from NDVER to DVER status. This revision request was approved by the MOPC and Board or Directors in July. SPP staff expect to file this with FERC in October or November. If FERC approves the proposal, it will address the MMU's concerns about the inefficienties associated with NDVERs.
    - In the 2017 Annual Report, the MMU recommended an enhancement of market rules for to include energy storage resources. The MMU staff have been heavily involved in the design of energy storage resources required by FERC Order 841. The Order requires SPP to develop a mechanism for batteries to participate in the market. A revision request was approved by MOPC on October 16 and will go to the Board on October 30. A FERC filing is required by December 3, 2018.
    - In the 2017 Annual Report, the MMU recommended the design of a ramp product. The idea of a ramp product has been discussed over the past several years and has now started moving forward. A ramp product design will most likely mirror MISO's design. SPP recently received a prototype clearing engine that includes a ramp product. SPP will use this prototype for further testing to determine further needed details of the design.
- Other relevant revision requests
    - The MMU has been actively engaged in the development of a revision request to fix issues related to jointly owned units (revision request 266). The MMU pointed out a manipulation concern and recommended changes to the original jointly owned unit design in its 2014 ASOM. A revision request to address the Tariff issues was approved and implemented in 2017, but came with some unintended consequences that the market participants did not envision. It also came with another potential gaming concern. A new revision request was developed in response to these concerns. This revision request was approved by the MOPC and Board or Directors in July. SPP staff expect to file this

with FERC in October or November. If FERC approves the proposal, it will address the MMU's concerns about manipulation associated with jointly owned units.

Planning

- Keith Collins and Serhat Guney attended the August Economic Studies Working Group (ESWG) meeting in Billings, MT. As this was the first time the MMU has engaged this group, Keith gave the group background on the Market Monitoring Unit, and explained how the MMU would participant going forward. The MMU is engaging this group to help provide feedback to align the planning processes with operational conditions.
- MMU staff attended the regular September Economic Studies Working Group meeting and recommended lowering the retirement age assumptions used for coal and natural gas resources in the planning model based on analysis of Energy Information Administration data.
- MMU staff participated on the September Economic Studies Working Group teleconference call and reiterated its recommendation to lower the retirement age for coal and natural gas resources, and indicated its support for developing a third scenario for the 2020 transmission plan to cover the possibility of a carbon tax and accelerated technology development. The ESWG accepted the MMU recommendations on adjusting the retirement age, but voted to only accept two case studies for the planning model.
- MMU staff presented at the October Economic Studies Working Group meeting on adjusting the accreditation values for new wind and solar resources based on MMU analysis of historic data in the SPP market.

Other Items

- Staff Training
    - The MMU staff is performing monthly lunch-n-learn sessions on various market topics. Staff members learn a topic and teach the rest of the team. For example, in September we covered a deep dive into special resource types like combined cycles, jointly owned units, quick-starts, variable energy resources, and demand resource.
- State commission outreach
    - In August, Keith Collins, Barbara Stroope, and Serhat Guney visited the Arkansas Public Service Commission to present an overview of market monitoring and the state of the SPP markets. Keith answered questions from PSC staff and commissioners on MMU independence and self-commitment of generation.
- Other outreach
    - In August, Keith Collins visited the Energy Information Administration to present an overview of market monitoring and the state of the SPP markets.
    - In September, Greg Warren and Nick Parker presented two hour-long sessions at the SPP Marketplace Symposium. This conference is attended by 100 stakeholders from across the SPP market.

- International market monitoring conference
    - In October, two staff members attended the Energy Intermarket Surveillance Group conference. This small, but active group of market monitors from around the world meets twice each year. The MMU staff presented three topics:
        - Competitive Market Metrics – Greg Sorenson
        - Renewable Integration and Market Power – Greg Sorenson
        - Energy Storage Resources – Jared Greenwalt

Respectfully submitted
Keith N. Collins
Executive Director, Market Monitoring and Analysis

SPP Organizational Group Self-Evaluation/Assessment
(August 2017 – July 2018)

GROUP NAME: **Oversight Committee (OC)**

THE CHARTER/SCOPE HAS BEEN REVIEWED IN THE PAST YEAR: **Yes**

MEMBER ROSTER/ATTENDANCE:

Member	Company	# Present	# Absent
Bernard, Phyllis	Director	5	0
Edwards, Graham	Director	3	0
Martin, Josh (C)	Director	5	0
Scherr, Bruce	Director	3	0
Skilton, Harry	Director	3	0
Michael Desselle	Staff Secretary	5	0

***Only on Committee for part of the assessment period.**

AVERAGE OVERALL ATTENDANCE (INCLUDING NON-GROUP MEMBERS): **11**

MEETINGS HELD TO DATE: **Live: 6** **Teleconference: 2**

AVERAGE LENGTH OF MEETINGS: **5 HOURS**

NUMBER OF VOTES TAKEN: **6**

*MEETING COST(S): **$89,783.81**

***** Meeting costs include hotel expenses (room rental, A/V, food and beverage), estimate of teleconference expenses, and Director fees for attendance.

MAJOR ACCOMPLISHMENTS/ISSUES ADDRESSED BY THE GROUP:

1.
2.
3.

MAJOR PENDING ISSUES BEFORE THE GROUP:

1.
2.
3.