

August 31, 2017

**VIA ELECTRONIC FILING**

Ms. Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, DC 20426

**Re: NERC Full Notice of Penalty regarding Southwest Power Pool (SPP),  
FERC Docket No. NP17-\_-000**

Dear Ms. Bose:

The North American Electric Reliability Corporation (NERC) submits this Notice of Penalty<sup>1</sup> regarding Southwest Power Pool's (SPP)<sup>2</sup> NERC Reliability Standards violations. This Notice of Penalty and attached Settlement Agreement (Attachment A) provide information regarding the nature and resolution of the violations, in accordance with the Federal Energy Regulatory Commission's (FERC or Commission) rules, regulations and orders, as well as NERC's Rules of Procedure, including Appendix 4C (NERC Compliance Monitoring and Enforcement Program (CMEP)).<sup>3</sup>

NERC is filing this Notice of Penalty with the Commission because SERC Reliability Corporation (SERC) and SPP have entered into a Settlement Agreement to resolve all outstanding issues arising from SERC's determination and findings of the following Reliability Standard violations: IRO-002-1, IRO-005-1, and FAC-014-2.

<sup>1</sup> *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards* (Order No. 672), III FERC Stats. & Regs. ¶ 31,204 (2006); *Notice of New Docket Prefix "NP" for Notices of Penalty Filed by the North American Electric Reliability Corporation*, Docket No. RM05-30-000 (February 7, 2008). See also 18 C.F.R. Part 39 (2015). *Mandatory Reliability Standards for the Bulk-Power System*, FERC Stats. & Regs. ¶ 31,242 (2007) (Order No. 693), *reh'g denied*, 120 FERC ¶ 61,053 (2007) (Order No. 693-A). See 18 C.F.R § 39.7(c)(2).

<sup>2</sup> NERC Registry ID# NCR01143. SPP was included on the NERC Compliance Registry as a Balancing Authority (BA) on March 1, 2014, Planning Authority/Planning Coordinator (PA/PC) on May 31, 2007, Reliability Coordinator (RC) on May 31, 2007, Reserve Sharing Group (RSG) on May 31, 2007, Transmission Planner (TP) on May 31, 2007, and Transmission Service Provider (TSP) on May 31, 2007.

<sup>3</sup> See 18 C.F.R § 39.7(c)(2).

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According to the Settlement Agreement, SPP neither admits nor denies the violations, but has agreed to the assessed zero-dollar penalty,<sup>4</sup> in addition to mitigation activities to correct the violations and facilitate future compliance under the terms and conditions of the Settlement Agreement.

**Statement of Findings Underlying the Violations**

This Notice of Penalty incorporates the findings and justifications set forth in the Settlement Agreement, by and between SERC and SPP. This Notice of Penalty also includes the NERC Board of Trustees Compliance Committee’s (NERC BOTCC) basis for approval of the Settlement Agreement.

Pursuant to Section 39.7 of the Commission’s regulations, 18 C.F.R. § 39.7 (2017), NERC provides the following summary table identifying each Reliability Standard violation resolved by the Settlement Agreement. Further information on the violations is set forth in the Settlement Agreement.

\*SR = Self-Report / SC = Self-Certification / CA = Compliance Audit / SPC = Spot Check / CI = Compliance Investigation

	Standard	Req	VRF/ VSL	Applicable Function(s)	Discovery Method* Date	Violation Start-End Date	Penalty Amount
SERC2013012078	IRO-002-1	R2	Medium/ Severe	RC	CI 2/27/2013	6/18/2007- 3/1/2014	\$0
SERC2013012080	IRO-005-1	R1; R1.8	High/ Lower				
SERC2013012081	FAC-014-2	R1	Medium/ Lower			3/4/2010- 4/30/2010	

**Background of the Violations and Discovery**

On June 17, 2009, a transmission system outage (June 2009 Event) resulted in the loss of 258 MW of load affecting approximately 48,800 customers. In response to the June 2009 Event, NERC initiated a Compliance Investigation (CI) that identified two SPP Interconnection Reliability Operations and

<sup>4</sup> SERC had determined a \$100,000 penalty, which it offset based on the SPP Reliability Enhancements as set forth in the Settlement Agreement.

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Coordination (IRO) violations that posed a serious or substantial risk to the reliability of the bulk power system (BPS) by exacerbating the June 2009 Event or delaying recovery. SPP's first IRO violation resulted from its failure to determine and request the data needed from Generation Owners and Generation Operators to support its Reliability Coordinator (RC) tasks. SPP only received hourly operating data from generation resources committed to its energy imbalance market. SPP thus modeled generation resources as available and operating when they were, in fact, not in service. SPP's failure to monitor all planned generation dispatches in its RC Area resulted in the second IRO violation. These violations contributed to reactive capability loss, overloaded lines, and loss of load.

During the CI, the NERC CI Team added a March 4, 2010, Event to the scope of its investigation. The NERC CI Team identified one Facilities Design, Connections, and Maintenance (FAC) violation that posed a minimal risk to the reliability of the BPS. The FAC violation resulted from SPP's failure to adhere to its System Operating Limit (SOL) Methodology when determining transmission transfer capability during the March 4, 2010, Event.

After completion of the CI, on February 27, 2013, the NERC CI Team transferred the three violations at issue to SERC, SPP's Compliance Enforcement Authority, for enforcement.

The Settlement Agreement and attachments include additional information and detail on the two Events.

#### SERC2013012078 IRO-002-1 R2 – OVERVIEW

SERC determined that SPP failed to determine and request the data needed from Generator Owners and Generator Operators to support its RC tasks. Attachment B provides the details of the violation.

SERC determined that this violation posed a serious or substantial risk to the reliability of the BPS. Attachment B includes the facts in place during the violation that SERC considered in its risk assessment.

SPP submitted its mitigation activities to address the referenced violation on September 7, 2015, stating it had completed the activities on March 1, 2014. Attachment B includes a description of the mitigation activities SPP took to address this violation.

SPP certified on October 20, 2015 that it had completed its mitigation activities on March 1, 2014, and SERC verified on October 20, 2015 that SPP had completed all mitigation activities. Attachment B provides specific information on SERC's verification of SPP's completion of the activities.

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#### SERC2013012080 IRO-005-1 R1; R1.8 – OVERVIEW

SERC determined that SPP failed to monitor all planned generation dispatches in its RC Area. Attachment C provides the details of the violation.

SERC determined that this violation posed a serious or substantial risk to the reliability of the BPS. Attachment C includes the facts in place during the violation that SERC considered in its risk assessment.

SPP submitted its mitigation activities to address the referenced violation on September 7, 2015, stating it had completed the activities on March 1, 2014. Attachment C includes a description of the mitigation activities SPP took to address this violation.

SPP certified on October 20, 2015 that it had completed its mitigation activities on March 1, 2014, and SERC verified on October 20, 2015 that SPP had completed all mitigation activities. Attachment C provides specific information on SERC's verification of SPP's completion of the activities.

#### SERC2013012081 FAC-014-2 R1 – OVERVIEW

SERC determined that SPP failed to ensure that its SOLs, including Interconnection Reliability Operating Limits, were consistent with its SOL Methodology. Attachment D provides the details of the violation.

SERC determined that this violation posed a minimal risk to the reliability of the BPS. Attachment D includes the facts in place during the violation that SERC considered in its risk assessment.

SPP submitted its mitigation activities to address the referenced violation on September 7, 2015 with a proposed completion date of August 1, 2016. Attachment D includes a description of the mitigation activities SPP took to address this violation.

SPP certified on August 9, 2016 that it had completed its mitigation activities on July 21, 2016, and SERC verified on August 12, 2016 that SPP had completed all mitigation activities. Attachment D provides specific information on SERC's verification of SPP's completion of the activities.

#### Regional Entity's Basis for Penalty

According to the Settlement Agreement, SERC has assessed a zero-dollar penalty. In reaching this determination, SERC considered the following factors:

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1. SERC considered the system conditions at the time of the June 2009 Event and the subsequent loss of load to be an aggravating factor in determining a proposed penalty;
2. SPP was cooperative throughout the compliance enforcement process;
3. there was neither evidence of any attempt to conceal a violation nor evidence of intent to do so;
4. two violations posed a serious or substantial risk to the reliability of the BPS, and one violation posed a minimal risk to the reliability of the BPS as discussed in Attachment A;
5. SPP completed “above-and-beyond” activities following the Events, as discussed in Attachment A; and
6. there were no other mitigating or aggravating factors or extenuating circumstances that would affect the assessed penalty.

After consideration of the above factors, SERC determined that a zero-dollar penalty, based on SPP’s implementation of Reliability Enhancements as set forth in the Settlement Agreement, is appropriate and bears a reasonable relation to the seriousness and duration of the violations.

#### **Statement Describing the Assessed Penalty, Sanction or Enforcement Action Imposed<sup>5</sup>**

##### **Basis for Determination**

Taking into consideration the Commission’s direction in Order No. 693, the NERC Sanction Guidelines and the Commission’s July 3, 2008, October 26, 2009 and August 27, 2010 Guidance Orders,<sup>6</sup> the NERC BOTCC reviewed the Settlement Agreement and supporting documentation on November 3, 2015 and August 8, 2017 and approved the Settlement Agreement. In approving the Settlement Agreement, the NERC BOTCC reviewed the applicable requirements of the Commission-approved Reliability Standards and the underlying facts and circumstances of the violations at issue.

Pursuant to 18 C.F.R. § 39.7(e), the penalty will be effective upon expiration of the 30-day period following the filing of this Notice of Penalty with FERC, or, if FERC decides to review the penalty, upon final determination by FERC.

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<sup>5</sup> See 18 C.F.R. § 39.7(d)(4).

<sup>6</sup> *North American Electric Reliability Corporation*, “Guidance Order on Reliability Notices of Penalty,” 124 FERC ¶ 61,015 (2008); *North American Electric Reliability Corporation*, “Further Guidance Order on Reliability Notices of Penalty,” 129 FERC ¶ 61,069 (2009); *North American Electric Reliability Corporation*, “Notice of No Further Review and Guidance Order,” 132 FERC ¶ 61,182 (2010).

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**Attachments to be Included as Part of this Notice of Penalty**

The attachments to be included as part of this Notice of Penalty are the following documents:

- a) Settlement Agreement by and between SERC and SPP executed October 20, 2015, included as Attachment A;
  - a. Disposition of Violation: Information Common to Instant Violations, dated October 20, 2015, included as Attachment A to the Settlement Agreement;
  - b. Disposition of Violation: IRO-002-1 R2 (SERC2013012078), dated October 20, 2015, included as Attachment B to the Settlement Agreement;
  - c. Disposition of Violation: IRO-005-1 R1; R1.8 (SERC2013012080), dated October 20, 2015, included as Attachment C to the Settlement Agreement;
  - d. Disposition of Violation: FAC-014-2 R1 (SERC2013012081), dated August 12, 2016, included as Attachment D to the Settlement Agreement.

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**Notices and Communications:** Notices and communications with respect to this filing may be addressed to the following:

<p>Gary J. Taylor*                  President and Chief Executive Officer                  SERC Reliability Corporation                  3701 Arco Corporate Drive, Suite 300                  Charlotte, NC 28273                  (704) 940-8205                  (704) 357-7914 – facsimile                  gtaylor@serc1.org</p> <p>Holly A. Hawkins*                  General Counsel                  SERC Reliability Corporation                  3701 Arco Corporate Drive, Suite 300                  Charlotte, NC 28273                  (704) 494-7775                  (704) 357-7914 – facsimile                  hhawkins@serc1.org</p> <p>James M. McGrane*                  Managing Counsel – Enforcement                  SERC Reliability Corporation                  3701 Arco Corporate Drive, Suite 300                  Charlotte, NC 28273                  (704) 494-7787                  (704) 357-7914 – facsimile                  jmcgrane@serc1.org</p>	<p>Sonia C. Mendonça*                  Vice President, Deputy General Counsel, and                  Director of Enforcement                  North American Electric Reliability                  Corporation                  1325 G Street N.W.                  Suite 600                  Washington, DC 20005                  (202) 400-3000                  (202) 644-8099 – facsimile                  sonia.mendonca@nerc.net</p> <p>Edwin G. Kichline*                  Senior Counsel and Director of Enforcement                  Oversight                  North American Electric Reliability                  Corporation                  1325 G Street N.W.                  Suite 600                  Washington, DC 20005                  (202) 400-3000                  (202) 644-8099 – facsimile                  edwin.kichline@nerc.net</p> <p>Arthur Brown*                  Counsel                  North American Electric Reliability                  Corporation                  1325 G Street N.W., Suite 600                  Washington, DC 20005                  (202) 400-3000                  (202) 644-8099 – facsimile                  arthur.brown@nerc.net</p>
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**Conclusion**

NERC respectfully requests that the Commission accept this Notice of Penalty as compliant with its rules, regulations, and orders.

Respectfully submitted,

/s/ Arthur Brown

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Vice President, Deputy General Counsel,  
and Director of Enforcement

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cc: Southwest Power Pool  
SERC Reliability Corporation

Attachments

**Attachment A**

**Settlement Agreement by and between SERC and SPP executed  
October 20, 2015**

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**SETTLEMENT AGREEMENT**  
**OF**  
**SERC RELIABILITY CORPORATION**  
**AND**  
**SOUTHWEST POWER POOL, INC.**

**I. INTRODUCTION**

1. SERC Reliability Corporation (SERC) and Southwest Power Pool, Inc. (SPP) enter into this Settlement Agreement (Settlement Agreement) to resolve all outstanding issues arising from a preliminary and non-public assessment resulting in SERC's determination and findings, pursuant to the North American Electric Reliability Corporation (NERC) Rules of Procedure, of three confirmed violations.

<b>Reliability Standard</b>	<b>Requirement</b>	<b>SERC Tracking No.</b>	<b>NERC Tracking No.</b>
IRO-002-1	R2	SERC2013-401771	SERC2013012078
IRO-005-1	R1; R1.8	SERC2013-401775	SERC2013012080
FAC-014-2	R1	SERC2013-401776	SERC2013012081

2. SPP neither admits nor denies the three violations and has agreed to other remedies and actions to mitigate the instant violations and to ensure future compliance under the terms and conditions of this Settlement Agreement.

Based on the foregoing, SERC imposes a penalty against SPP in the amount of \$100,000. However, SERC agrees to give SPP a full penalty offset of \$100,000 in exchange for SPP implementing the Reliability Enhancements set forth in Paragraph 14 and providing sufficient evidence to SERC of the cost of those Reliability Enhancements. SERC agrees that SPP has provided SERC with evidence satisfactory to SERC that its investments to date in the Reliability Enhancements substantially exceeded the amount of the penalty offset.

**II. STIPULATION**

3. The facts stipulated herein are stipulated solely for the purpose of resolving, between SPP and SERC, the matters discussed herein and do not constitute stipulations or admissions for any other purpose. SPP and SERC hereby stipulate and agree to the following:

## **Background**

4. See Section I of the Common Disposition document (Attachment A) for a description of SPP.

## **Violations of NERC Reliability Standards**

5. See Section I of the respective Disposition documents (Attachments B through D) for the description of the violations.

## **III. PARTIES' SEPARATE REPRESENTATIONS**

### **Statement of SERC and Summary of Findings**

6. SERC determined that SPP was in violation of IRO-002-1 R2 because it failed to request the data needed to support its reliability coordination tasks from its Generation Owners and Generation Operators. There was one violation included in the Disposition document, Attachment B.
7. SERC determined that SPP was in violation of IRO-005-1 R1.8 because it failed to monitor all planned generation dispatches in its Reliability Coordinator (RC) Area. There was one violation included in the Disposition document, Attachment C.
8. SERC determined that SPP was in violation of FAC-014-2 R1 because it failed to ensure that its System Operating Limits (SOLs), including Interconnection Reliability Operating Limits, were consistent with its SOL Methodology. There was one violation included in the Disposition document, Attachment D.
9. SERC agrees that this Settlement Agreement is in the best interest of the parties and in the best interest of bulk power system reliability.

### **Statement of SPP**

10. SPP neither admits nor denies the facts set forth and agreed to by the parties for purposes of this Settlement Agreement constitute violations of the Standards and Requirements listed herein.
11. SPP has agreed to enter into this Settlement Agreement with SERC to effectuate a complete and final resolution of the issues set forth herein. SPP agrees that this Settlement Agreement is in the best interest of the parties and in the best interest of BPS reliability.
12. SPP's Criteria required its members to submit outage and hourly MW resource plans for generating facilities for the current day and the next 6 days. Since no outage of the Lake Road Units was submitted to SPP, the units were expected to be available. SPP approved the outage of the St. Joseph-Cook transmission line. After the approved St. Joseph-Cook transmission line outage, a single contingency occurred

initiated by tree contact on the Woodbine-East 161kV transmission line resulting in its loss. This was followed by a Transmission Operator relay misoperation of the Woodbine-St. Joseph 161kV transmission line resulting in a second line outage. Concurrently, at the time of these contingencies, there were fewer Lake Road Units online than SPP anticipated when it had approved the St. Joseph-Cook transmission line outage.

#### **IV. MITIGATING ACTIONS, REMEDIES AND SANCTIONS**

13. SERC and SPP agree that SPP has completed the mitigating actions and SERC has verified the completion of the mitigating actions set forth in Section III of the Disposition documents identified as Attachments B and C.

SERC and SPP agree that SPP will complete the mitigating actions and SERC will verify the completion of the mitigating actions set forth in the Section III of the Disposition document identified as Attachment D. SPP will provide written quarterly updates to SERC on its progress in implementing the mitigating actions described in Attachment D until SPP completes all of the mitigating actions. After completing the mitigating actions, SPP will provide SERC with a written update that certifies that SPP has completed all of the mitigating actions.

The Mitigating Actions, Remedies and Sanctions are discussed in detail in the respective Disposition documents (Attachments B through D).

14. In addition to the mitigating actions listed in Section III of the respective disposition documents (Attachments B through D), SPP has completed Reliability Enhancements, which SERC took into consideration when assessing the proposed penalty and penalty offset. These Reliability Enhancements are discussed below:
  - i. In January 2010, SPP implemented the use of an enhanced AC-based study method to conduct its next-day and other N-1 contingency analyses across its RC Area. SPP's previous practice had been to rely upon a DC-based solution method as an initial screening analysis. Subsequently, SPP would conduct a full AC-based solution on selected contingencies for its next-day and other N-1 contingency analyses across its RC Area. If problems were identified in a specific local area based on the initial DC screen, SPP would follow-up with AC-based solution analyses for that local area. SPP found that using an AC-based solution method identified potential contingency overload conditions that were not identified using a DC-based solution method. As a result, using the full AC-based solution method on all contingencies has enhanced BPS reliability. Specifically, SPP has the ability to identify more potential System Operating Limit exceedances and the ability to take actions to reduce the risk under specific contingencies. The cost associated with this enhanced AC-based study method was born by SPP staff resources that dedicated the time to perform this study method in lieu of performing other necessary functions. Subsequently, in November 2011, SPP procured additional study software (PowerGem) to conduct enhanced voltage stability analysis and next-day and other operational planning

analysis studies. This software provides faster results, more thorough voltage stability analysis due to more comprehensive solution capabilities of divergent conditions, and analyzes increased numbers of scenarios. This results in enhanced analysis capabilities for the operating horizon. The analysis improvements result in less time analyzing non-converged solutions and in determining mitigation activities for identified SOL exceedances. The software automatically identifies issues and provides information to the engineer such as recommended unit commitments, redispatch, and outage re-scheduling or cancellation. These system changes have provided improved capabilities for SPP's RC tasks by introducing analytical efficiencies into the processes by which next-day and operational planning is performed by SPP. The total cost of the software to date is approximately \$195,000.

- ii. In June 2010, SPP implemented wind forecasting software to facilitate more accurate operational planning analysis, which facilitates effective and efficient administration of SPP's role as a consolidated Balancing Authority (BA), and, thereby, enhances BPS reliability. The system interfaces with SPP's control room operator window (CROW) outage management system to determine real-time adjustments to wind/production calculations compared to the availability of turbines. These enhancements provide greater resource planning capabilities in support of SPP's BA and RC functions and promote more accurate real-time assessments of wind resource availability and, as necessary, the potential need for procurement of capacity or ancillary services to effectively and efficiently manage changes in wind resource output. This software costs approximately \$14,000 per month and has cost approximately \$850,000 over the past five years.
- iii. From November 2010 through October 2011, SPP implemented enhancements in its CROW outage application that allow for more efficient and effective submission and management of outage requests for SPP RC Area facilities over the legacy solution. Additional validations and prioritization criteria regarding the outage submissions are built into the tool directly. The enhanced data requirements required for each outage submission allow SPP and other neighboring reliability entities, such as BAs, TOPs, RCs, and GOPs, to have additional, necessary information regarding the outage. Such additional information includes: outage recall time/capability; reason for the outage; generating resource derate granularity; and facilitation of NERC Generator Availability Data System and Transmission Availability Data System reporting. CROW interfaces directly with NERC System Data Exchange (SDX) in the provision of SPP outage data to other NERC reliability entities, providing more timely information exchanges and improved reliability coordination. The cost of procurement and implementation was \$265,000. Over the past four years, maintenance costs have totaled approximately \$140,000. The total cost to date is approximately \$400,000.
- iv. In 2011, SPP implemented an additional stability analysis tool (DSA Tools) to perform off-line stability screening studies and detailed stability analysis of the SPP Planning Coordinator footprint. This analysis is incremental to the annual

stability screening studies required by the NERC TPL Standards, and, therefore, facilitates enhanced BPS reliability. The additional analysis performed pursuant to this software expands the scope of analysis by leveraging several automation features. The amount and complexity of the scenarios studied were greatly increased over the legacy solution due to the faster solution times and ability to automate the analysis procedures. Since 2011, maintenance costs have totaled approximately \$52,500.

- v. In 2011, SPP began posting every 10 minutes, real-time contingency analysis (RTCA) results from the SPP state estimator/energy management system (EMS) for use by Transmission Operators (TOPs) within the SPP RC Area to support those entities in their performance of TOP functions, thereby facilitating enhanced BPS reliability. There are TOPs of varying sizes and complexity within the SPP RC Area. In some cases, the posted RTCA results serve as a backup to a TOP's own RTCA solution where the TOP can benchmark its own results and also evaluate impacts due to SPP's analysis of the RC's wide-area. In other cases, the TOP's system and capabilities do not necessitate a full EMS based RTCA package. SPP's postings allow that TOP to leverage the SPP results for its own periodic real-time evaluations of contingencies. The posting process allows more timely exchange and better use of operational information in support of SPP's BA and RC responsibilities and in support of the TOP function in the SPP region.
- vi. In December 2012, SPP hired an additional three staff engineers and one supervisor engineer for the Operations Planning group. This additional staff provides additional scenario analysis capabilities and resources for operational support, thereby enhancing the resource capability in support of SPP's RC function, which benefits BPS reliability. SPP added new analysis capabilities and process changes to its operational planning group, including additional outage coordination scheduling, seven-day reliability unit commitment analysis, and increased production of seasonal assessments from within the operations support staff. The new analysis and assessment production was incremental to work previously being done. The total cost of the additional staff has been approximately \$450,000 per year.
- vii. In 2013 and 2014, SPP procured a common load forecasting tool that is used by the TOPs within the SPP BA instead of having each TOP using a different load forecasting tool. Unlike the legacy application, the new PRT load forecasting tool offers SPP and the TOPs in the SPP BA a process by which economic and meteorological data can be integrated based on consistent modeling assumptions. The new tool sets benchmarking criteria to actual load and helps address the new NERC TPL Standard in performing load sensitivities while demonstrating the impact of changes to load forecasting algorithms. This enhanced load forecasting capability supports these entities in the performance of their operational duties and functions, and, therefore, benefits BPS reliability. The total cost of the common load forecasting tool is approximately \$120,000.

15. SERC agrees that SPP has provided SERC with evidence satisfactory to SERC of the completion of the Reliability Enhancements specified in Paragraph 14 and that its investments to date in the Reliability Enhancements substantially exceeded \$100,000.
16. SERC also considered the specific facts and circumstances of the violations and SPP's actions in response to the violations in determining a proposed penalty that meets the requirement in Section 215 of the Federal Power Act that "[a]ny penalty imposed under this section shall bear a reasonable relation to the seriousness of the violation and shall take into consideration the efforts of an entity to remedy the violation in a timely manner."<sup>1</sup> The factors considered by SERC in the determination of the appropriate penalty are set forth in Section II of the Common Disposition document.
17. Based on the above factors, as well as the mitigation actions and preventative measures taken, SERC agrees that SPP has provided SERC with evidence satisfactory to SERC that investments to date in the Reliability Enhancements described in Paragraph 14 have substantially exceeded \$100,000, and SERC agrees to give SPP a full penalty offset of \$100,000. Thus, no penalty payment by SPP will be due to NERC.<sup>2</sup>
18. Failure to comply with any of the terms and conditions agreed to herein, or any other conditions of this Settlement Agreement shall be deemed to be either the same alleged violations that initiated this Settlement Agreement and/or additional violations and may subject SPP to new or additional enforcement, penalty or sanction actions in accordance with the NERC Rules of Procedure. SPP shall retain all rights to defend against such additional enforcement actions in accordance with NERC Rules of Procedure.

## V. ADDITIONAL TERMS

19. The signatories to the Settlement Agreement agree that they enter into the Settlement Agreement voluntarily and that, other than the recitations set forth herein, no tender, offer or promise of any kind by any member, employee, officer, director, agent or representative of SERC or SPP has been made to induce the signatories or any other party to enter into the Settlement Agreement. The signatories agree that the terms and conditions of this Settlement Agreement are consistent with the Commission's regulations and orders, and NERC's Rules of Procedure.

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<sup>1</sup> 16 U.S.C. § 824o(e)(6).

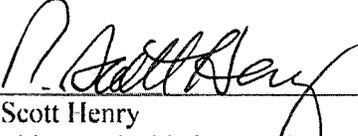
<sup>2</sup> Pursuant to Section 3 of the Agreement Between SERC Reliability Corporation and Southwest Power Pool Regional Entity Concerning Compliance Monitoring and Enforcement of Southwest Power Pool, Inc. Registered Functions (effective January 1, 2013), any penalty to be paid by SPP for violation of Reliability Standards by an SPP Registered Function shall be transmitted to NERC.

20. SERC shall report the terms of all settlements of compliance matters to NERC. NERC will review the settlement for the purpose of evaluating its consistency with other settlements entered into for similar violations or under other, similar circumstances. Based on this review, NERC will either approve the settlement or reject the settlement and notify SERC and SPP of changes to the settlement that would result in approval. If NERC rejects the settlement, NERC will provide specific written reasons for such rejection and SERC will attempt to negotiate a revised settlement agreement with SPP including any changes to the settlement specified by NERC. If a settlement cannot be reached, the enforcement process shall continue to conclusion. If NERC approves the settlement, NERC will (i) report the approved settlement to the Commission for the Commission's review and approval by order or operation of law and (ii) publicly post this Settlement Agreement.
21. This Settlement Agreement shall become effective upon the Commission's approval of the Settlement Agreement by order or operation of law as submitted to it or as modified in a manner acceptable to the parties.
22. SPP agrees that this Settlement Agreement, when approved by NERC and the Commission, shall represent a final settlement of all matters set forth herein and SPP waives its right to further hearings and appeal, unless and only to the extent that SPP contends that any NERC or Commission action on the Settlement Agreement contains one or more material modifications to the Settlement Agreement. SERC reserves all rights to initiate enforcement, penalty or sanction actions against SPP in accordance with the NERC Rules of Procedure in the event that SPP does not comply with the Mitigation Plans and compliance program agreed to in this Settlement Agreement. In the event SPP fails to comply with any of the stipulations, remedies, sanctions or additional terms, as set forth in this Settlement Agreement, SERC will initiate enforcement, penalty, or sanction actions against SPP to the maximum extent allowed by the NERC Rules of Procedure, up to the maximum statutorily allowed penalty. Except as otherwise specified in this Settlement Agreement, SPP shall retain all rights to defend against such enforcement actions, also according to the NERC Rules of Procedure.
23. SPP consents to the use of SERC's determinations, findings, and conclusions set forth in this Settlement Agreement for the purpose of assessing the factors, including the factor of determining the company's history of violations, in accordance with the NERC Sanction Guidelines and applicable Commission orders and policy statements. Such use may be in any enforcement action or compliance proceeding undertaken by NERC and/or any Regional Entity; provided, however, that SPP does not consent to the use of the specific acts set forth in this Settlement Agreement as the sole basis for any other action or proceeding brought by NERC and/or SERC, nor does SPP consent to the use of this Settlement Agreement by any other party in any other action or proceeding.
24. Each of the undersigned warrants that he or she is an authorized representative of the entity designated, is authorized to bind such entity and accepts the Settlement Agreement on the entity's behalf.

25. The undersigned representative of each party affirms that he or she has read the Settlement Agreement, that all of the matters set forth in the Settlement Agreement are true and correct to the best of his or her knowledge, information and belief, and that he or she understands that the Settlement Agreement is entered into by such party in express reliance on those representations, provided, however, that such affirmation by each party's representative shall not apply to the other party's statements of position set forth in Section III of this Settlement Agreement.
26. The Settlement Agreement may be signed in counterparts.
27. This Settlement Agreement is executed in duplicate, each of which so executed shall be deemed to be an original.

*Remainder of page intentionally blank.  
Signatures to be affixed to the following page.*

Agreed to and accepted:

  
\_\_\_\_\_  
R. Scott Henry  
President and Chief Executive Officer  
**SERC RELIABILITY CORPORATION**

10/20/2015  
Date

  
  
\_\_\_\_\_  
Michael Desselle  
Vice President and  
Chief Compliance Officer  
**SOUTHWEST POWER POOL, INC.**

10/20/2015  
Date

**Attachment A  
Disposition of Violation:  
Information Common to Instant Violations  
dated October 20, 2015**



WITH RESPECT TO THE ASSESSED PENALTY OR SANCTION, REGISTERED ENTITY

ACCEPTS IT/ DOES NOT CONTEST IT YES

**II. PENALTY INFORMATION**

TOTAL ASSESSED PENALTY OR SANCTION OF ONE HUNDRED THOUSAND DOLLARS (\$100,000) FOR THREE (3) VIOLATIONS OF RELIABILITY STANDARDS. SERC AGREES TO GIVE SPP A FULL PENALTY OFFSET OF \$100,000 IN EXCHANGE FOR SPP IMPLEMENTING THE RELIABILITY ENHANCEMENTS DESCRIBED IN PARAGRAPH II(6) BELOW.

(1) REGISTERED ENTITY'S COMPLIANCE HISTORY

PREVIOUSLY FILED VIOLATIONS OF ANY OF THE INSTANT RELIABILITY STANDARD(S) OR REQUIREMENT(S) THEREUNDER IN THE SERC REGION

YES  NO

LIST VIOLATIONS AND STATUS

Not applicable

ADDITIONAL COMMENTS

Not applicable

PREVIOUSLY FILED VIOLATIONS OF OTHER RELIABILITY STANDARD(S) OR REQUIREMENTS THEREUNDER IN THE SERC REGION

YES  NO

LIST VIOLATIONS AND STATUS

SPP, registered as Southwest Power Pool, Inc. – ICTE (NCR01323), had previously filed violations of other NERC Reliability Standards and Requirements in the SERC Region. A Settlement Agreement covering violations of COM-002-2 R2 was filed with FERC under NP13-14-000 on December 31, 2012. On January 30, 2013, FERC issued an order stating it would not engage in further review of the Notice of Penalty.

ADDITIONAL COMMENTS

SERC did not consider the prior SPP violations of COM-002-2 R2 to be an aggravating factor in the penalty determination. The prior violations were unrelated to the violations at issue in this enforcement matter.

(2) THE DEGREE AND QUALITY OF COOPERATION BY THE REGISTERED ENTITY (IF THE RESPONSE TO FULL COOPERATION IS “NO,” THE ABBREVIATED NOP FORM MAY NOT BE USED.)

FULL COOPERATION      YES       NO   
IF NO, EXPLAIN

(3) THE PRESENCE AND QUALITY OF THE REGISTERED ENTITY’S COMPLIANCE PROGRAM

IS THERE A DOCUMENTED COMPLIANCE PROGRAM  
YES       NO   
EXPLAIN

SPP’s has a documented internal compliance program (ICP). The earliest version of the ICP, which focused on audit preparation, was effective on June 18, 2007. The remaining documents in the ICP were effective on January 1, 2009. The latest revision to the ICP became effective on March 14, 2011. The ICP consists of seven documents – Compliance Charter, Compliance Program Overview, Audit Preparation, Self Reporting & Mitigation, Evaluation Process, Compliance Distribution Plan, and Internal Assessment Schedule.

The ICP was developed by the SPP Compliance Department using requirements identified by FERC, NERC, the Regional Entities, SPP, and applicable tariffs. The ICP is reviewed and approved by the Director of Compliance, Chief Compliance Officer, and/or the Oversight Committee. All revisions must be approved by the Director of Compliance and/or the Chief Compliance Officer. The Compliance Department is responsible for managing and oversight of the overall ICP, but the individual business units are responsible for actual implementation in their departments. The Director of Compliance has open access to SPP officers, including the President, as well as the Oversight Committee of the Board of Directors.

The ICP is reviewed at least annually and modified as necessary. The ICP also includes provisions for compliance training. Compliance awareness training is required for new hires within 30 days of starting employment with SPP. All employees are required to go through compliance awareness training annually. The Compliance Department conducts annual self-audits of all business units with regulatory requirements.

EXPLAIN SENIOR MANAGEMENT’S ROLE AND INVOLVEMENT WITH RESPECT TO THE REGISTERED ENTITY’S COMPLIANCE PROGRAM, INCLUDING WHETHER SENIOR MANAGEMENT TAKES ACTIONS THAT SUPPORT THE COMPLIANCE PROGRAM, SUCH AS TRAINING, COMPLIANCE AS A FACTOR IN EMPLOYEE EVALUATIONS, OR OTHERWISE.

SPP senior management and officers fully support the ICP. The SPP Board of Directors has established metrics that include measures focused on reliability compliance. The Director of Compliance provides a compliance report at each quarterly Board of Directors Oversight Committee meeting. In addition, the ICP is submitted to the Director of Compliance, Chief Compliance Officer, and/or Oversight Committee for review and approval, as well as for periodic updates. New employees are required to undergo compliance awareness training within 30 days of starting employment with SPP. All employees are required to go through compliance awareness training annually.

(4) ANY ATTEMPT BY THE REGISTERED ENTITY TO CONCEAL THE VIOLATION(S) OR INFORMATION NEEDED TO REVIEW, EVALUATE OR INVESTIGATE THE VIOLATION.

YES  NO   
IF YES, EXPLAIN

(5) ANY EVIDENCE THE VIOLATION(S) WERE INTENTIONAL (IF THE RESPONSE IS "YES," THE ABBREVIATED NOP FORM MAY NOT BE USED.)

YES  NO   
IF YES, EXPLAIN

(6) ANY OTHER MITIGATING FACTORS FOR CONSIDERATION

YES  NO   
IF YES, EXPLAIN

In addition to the mitigating actions listed in Section III of the respective disposition documents (Attachments B through D), SPP has completed Reliability Enhancements, which SERC took into consideration when assessing the proposed penalty and penalty offset. These Reliability Enhancements are discussed below:

- i. In January 2010, SPP implemented the use of an enhanced AC-based study method to conduct its next-day and other N-1 contingency analyses across its RC Area. SPP's previous practice had been to rely upon a DC-based solution method as an initial screening analysis. Subsequently, SPP would conduct a full AC-based solution on selected contingencies for its next-day and other N-1 contingency analyses across its RC Area. If problems were identified in a specific local area based on the initial DC screen, SPP would follow-up with AC-based solution analyses for that local area. SPP found that using an AC-based solution method identified potential contingency overload conditions that were not identified using a DC-based solution method. As a result, using the full AC-based solution method on all contingencies

has enhanced BPS reliability. Specifically, SPP has the ability to identify more potential System Operating Limit exceedances and the ability to take actions to reduce the risk under specific contingencies. The cost associated with this enhanced AC-based study method was born by SPP staff resources that dedicated the time to perform this study method in lieu of performing other necessary functions. Subsequently, in November 2011, SPP procured additional study software (PowerGem) to conduct enhanced voltage stability analysis and next-day and other operational planning analysis studies. This software provides faster results, more thorough voltage stability analysis due to more comprehensive solution capabilities of divergent conditions, and analyzes increased numbers of scenarios. This results in enhanced analysis capabilities for the operating horizon. The analysis improvements result in less time analyzing non-converged solutions and in determining mitigation activities for identified SOL exceedances. The software automatically identifies issues and provides information to the engineer such as recommended unit commitments, redispatch, and outage re-scheduling or cancellation. These system changes have provided improved capabilities for SPP's RC tasks by introducing analytical efficiencies into the processes by which next-day and operational planning is performed by SPP. The total cost of the software to date is approximately \$195,000.

- ii. In June 2010, SPP implemented wind forecasting software to facilitate more accurate operational planning analysis, which facilitates effective and efficient administration of SPP's role as a consolidated Balancing Authority (BA), and, thereby, enhances BPS reliability. The system interfaces with SPP's control room operator window (CROW) outage management system to determine real-time adjustments to wind/production calculations compared to the availability of turbines. These enhancements provide greater resource planning capabilities in support of SPP's BA and RC functions and promote more accurate real-time assessments of wind resource availability and, as necessary, the potential need for procurement of capacity or ancillary services to effectively and efficiently manage changes in wind resource output. This software costs approximately \$14,000 per month and has cost approximately \$850,000 over the past five years.
- iii. From November 2010 through October 2011, SPP implemented enhancements in its CROW outage application that allow for more efficient and effective submission and management of outage requests for SPP RC Area facilities over the legacy solution. Additional validations and prioritization criteria regarding the outage submissions are built into the tool directly. The enhanced data requirements required for each outage submission allow SPP and other neighboring reliability entities, such as BAs, TOPs, RCs, and GOPs, to have additional, necessary information regarding the outage. Such

additional information includes: outage recall time/capability; reason for the outage; generating resource derate granularity; and facilitation of NERC Generator Availability Data System and Transmission Availability Data System reporting. CROW interfaces directly with NERC System Data Exchange (SDX) in the provision of SPP outage data to other NERC reliability entities, providing more timely information exchanges and improved reliability coordination. The cost of procurement and implementation was \$265,000. Over the past four years, maintenance costs have totaled approximately \$140,000. The total cost to date is approximately \$400,000.

- iv. In 2011, SPP implemented an additional stability analysis tool (DSA Tools) to perform off-line stability screening studies and detailed stability analysis of the SPP Planning Coordinator footprint. This analysis is incremental to the annual stability screening studies required by the NERC TPL Standards, and, therefore, facilitates enhanced BPS reliability. The additional analysis performed pursuant to this software expands the scope of analysis by leveraging several automation features. The amount and complexity of the scenarios studied were greatly increased over the legacy solution due to the faster solution times and ability to automate the analysis procedures. Since 2011, maintenance costs have totaled approximately \$52,500.
- v. In 2011, SPP began posting every 10 minutes, real-time contingency analysis (RTCA) results from the SPP state estimator/energy management system (EMS) for use by Transmission Operators (TOPs) within the SPP RC Area to support those entities in their performance of TOP functions, thereby facilitating enhanced BPS reliability. There are TOPs of varying sizes and complexity within the SPP RC Area. In some cases, the posted RTCA results serve as a backup to a TOP's own RTCA solution where the TOP can benchmark its own results and also evaluate impacts due to SPP's analysis of the RC's wide-area. In other cases, the TOP's system and capabilities do not necessitate a full EMS based RTCA package. SPP's postings allow that TOP to leverage the SPP results for its own periodic real-time evaluations of contingencies. The posting process allows more timely exchange and better use of operational information in support of SPP's BA and RC responsibilities and in support of the TOP function in the SPP region.
- vi. In December 2012, SPP hired an additional three staff engineers and one supervisor engineer for the Operations Planning group. This additional staff provides additional scenario analysis capabilities and resources for operational support, thereby enhancing the resource capability in support of SPP's RC function, which benefits BPS reliability. SPP added new analysis capabilities and process changes to its operational planning group, including additional outage coordination scheduling, seven-day reliability unit commitment

analysis, and increased production of seasonal assessments from within the operations support staff. The new analysis and assessment production was incremental to work previously being done. The total cost of the additional staff has been approximately \$450,000 per year.

vii. In 2013 and 2014, SPP procured a common load forecasting tool that is used by the TOPs within the SPP BA instead of having each TOP using a different load forecasting tool. Unlike the legacy application, the new PRT load forecasting tool offers SPP and the TOPs in the SPP BA a process by which economic and meteorological data can be integrated based on consistent modeling assumptions. The new tool sets benchmarking criteria to actual load and helps address the new NERC TPL Standard in performing load sensitivities while demonstrating the impact of changes to load forecasting algorithms. This enhanced load forecasting capability supports these entities in the performance of their operational duties and functions, and, therefore, benefits BPS reliability. The total cost of the common load forecasting tool is approximately \$120,000.

(7) ANY OTHER AGGRAVATING FACTORS FOR CONSIDERATION

YES  NO

IF YES, EXPLAIN

SERC considered the system conditions at the time of the June 17, 2009 event and the subsequent loss of load of 258 MW of load affecting approximately 48,800 customers to be an aggravating factor in the penalty determination.

(8) ANY OTHER EXTENUATING CIRCUMSTANCES

YES  NO

IF YES, EXPLAIN

OTHER RELEVANT INFORMATION:

NOTICE OF ALLEGED VIOLATION AND PROPOSED PENALTY OR SANCTION ISSUED

DATE: April 29, 2015 OR N/A

SETTLEMENT DISCUSSIONS COMMENCED

DATE: July 13, 2015 OR N/A

NOTICE OF CONFIRMED VIOLATION ISSUED

DATE: OR N/A

SUPPLEMENTAL RECORD INFORMATION

DATE(S) OR N/A

REGISTERED ENTITY RESPONSE CONTESTED

FINDINGS  PENALTY  BOTH  NO CONTEST

HEARING REQUESTED

YES  NO

DATE

OUTCOME

APPEAL REQUESTED

SETTLEMENT AGREEMENT BETWEEN SERC AND SPP EXECUTED

DATE: October 20, 2015

**Attachment B  
Disposition of Violation:  
IRO-002-1 R2 (SERC2013012078)  
dated October 20, 2015**

**DISPOSITION OF VIOLATION<sup>1</sup>**  
**Dated October 20, 2015**

NERC TRACKING NO.      SERC TRACKING NO.  
 NO.

**SERC2013012078      SERC2013-401771**

**I.      VIOLATION INFORMATION**

RELIABILITY STANDARD	REQUIREMENT(S)	SUB-REQUIREMENT(S)	VRF(S)	VSL(S)
<b>IRO-002-1</b>	<b>R2</b>		<b>Medium</b>	<b>Severe<sup>2</sup></b>

VIOLATION(S) APPLIES TO THE FOLLOWING FUNCTIONS IN THE SERC  
 REGION:

BA	DP	GO	GOP	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
								X						

PURPOSE OF THE RELIABILITY STANDARD AND TEXT OF RELIABILITY STANDARD AND REQUIREMENT(S)/SUB-REQUIREMENT(S)

**The purpose statement of IRO-002 provides:**

Reliability Coordinators need information, tools and other capabilities to perform their responsibilities.

**IRO-002-1 R2 provides:**

**R2.** Each Reliability Coordinator shall determine the data requirements to support its reliability coordination tasks and shall request such data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities, or adjacent Reliability Coordinators.

**VIOLATION DESCRIPTION**

On November 4, 2009, NERC initiated a Compliance Investigation (CI) in response to a June 17, 2009 event. On July 19, 2010, NERC added a March 4, 2010 event to the scope of the CI.

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<sup>1</sup> For purposes of this document and attachments hereto, each violation at issue is described as a "violation," regardless of its procedural posture and whether it was a possible, alleged or confirmed violation.

<sup>2</sup> Basis for VSL Assignment: SERC assessed a Violation Severity Level (VSL) of "Severe" in accordance with the February 2, 2009 VSL Matrix because SPP failed to demonstrate that it requested the data from three or more of its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators.

On February 27, 2013, the NERC CI team reported to SERC that SPP, as a Reliability Coordinator (RC), was in violation of IRO-002-1 R2. SPP failed to request the data needed to support its reliability coordination tasks from its Generation Owners and Generation Operators.

At approximately 9:55 a.m. on June 17, 2009, there was a transmission system outage in the St. Joseph, Missouri service territory. The outage was caused by a series of related events, including a scheduled (and SPP-approved) outage of the St. Joseph-Cook transmission line, and the loss of the Woodbine-East Side and Woodbine – St. Joseph 161 kV lines due to a fault. The Woodbine-East Side and Woodbine – St. Joseph lines were serially connected and thus SERC considered the loss of these lines to be an N-1 event. The loss of these lines resulted in the separation of the energy and reactive power source at the St. Joseph substation from the St. Joseph area. This in turn placed the burden of energy and reactive system demand on the Lake Road generation station and the Lake Road-Alabama-Nashua transmission path to serve load at the Cook, Industrial Park, Lake Road, Alabama, and East Side substations, resulting in a decline of system voltage in the St. Joseph area.

There are seven generating units at the Lake Road generating station. At this time, however, only Unit 4 was online. To support the system voltage in the St. Joseph area, Lake Road Unit 4 reactive power output automatically increased to its maximum capability. At the time of the event, Unit 4 was supplying 86 MW and 33 MVAR. At approximately 9:57 a.m., Lake Road Unit 4 tripped by automatic relay action caused by the Unit 4 exciter.

The loss of Lake Road Unit 4 resulted in an increase of real and reactive power on the Lake Road-Alabama-Nashua 161 kV transmission path, which was eventually opened at the Alabama substation by over-current relay action. This resulted in a subsequent loss of energy to serve loads at the Cook, Industrial Park, Lake Road, Alabama, and East Side substations. This loss of energy resulted in the loss of 258 MW of load, affecting approximately 48,800 customers.

SPP's data requirements are defined in its Criteria document. In Appendix 7 of the SPP Criteria, SPP identifies additional operational and topology data that it requires. One of the data items that SPP requires is a resource plan, which requires SPP members to "submit resource plans for generating facilities within the SPP region ... for the current day and next 6 days. An hourly MW plan must be submitted. The plan may be submitted on a unit-by-unit or plant-by-plant basis as the unit or plant is modeled in the SPP EMS. For each unit and for each hour the following information must be submitted: Resource Status, Planned MW, Minimum Operating Limit, and Maximum Operating Limit." This data requirement was in effect prior to the mandatory and enforceable date of the IRO-002-1 Standard.

In studies used for contingency planning, SPP included hourly forecasts for approximately 59,000 MW of generation that was participating in the Real-Time Energy

Imbalance Service (RTEIS) market. However, despite SPP's Criteria, SPP used assumptions based on the reported availability of the units and did not request or use hourly MW plans for approximately 15,500 MW of generation that was not participating in the RTEIS market, including the Lake Road units.

Using SPP's assumptions, six of the seven Lake Road units were considered to be available to be brought online and capable of supplying approximately 104 MW and 60 MVAR of power to the system, if needed. The seventh Lake Road unit was not included in SPP's next day study for June 17, 2009, despite SPP being aware of all seven Lake Road units through supervisory control and data acquisition (SCADA) data.

**RELIABILITY IMPACT STATEMENT- POTENTIAL AND ACTUAL**

This violation posed a serious and substantial risk to the reliability of the bulk power system. SPP's failure to determine and request the data requirements needed to support its reliability coordination tasks could result in incorrect input to next-day analyses. Inaccurate analyses could lead to incorrect outage management, contingency plans, and responses to a real-time event. SPP's failure to determine and request the data requirements needed to support its reliability tasks contributed to a loss of reactive capability, overloaded lines and the loss of 258 MW of load, affecting approximately 48,800 customers.

**II. DISCOVERY INFORMATION**

**METHOD OF DISCOVERY**

- SELF-REPORT
- SELF-CERTIFICATION
- COMPLIANCE AUDIT
- COMPLIANCE INVESTIGATION
- SPOT CHECK
- COMPLAINT
- PERIODIC DATA SUBMITTAL
- EXCEPTION REPORTING

**DURATION DATE(S)**

6/18/2007 (when the Standard became mandatory and enforceable) through 3/1/2014 (mitigation completion)

**DATE DISCOVERED BY OR REPORTED TO REGIONAL ENTITY** 2/27/2013

- IS THE VIOLATION STILL OCCURRING YES  NO
- IF YES, EXPLAIN
- REMEDIAL ACTION DIRECTIVE ISSUED YES  NO
- PRE TO POST JUNE 18, 2007 VIOLATION YES  NO

### III. MITIGATION INFORMATION

FOR FINAL ACCEPTED MITIGATION ACTIVITIES:

DATE SUBMITTED TO REGIONAL ENTITY 9/7/2015  
 DATE ACCEPTED BY REGIONAL ENTITY 10/15/2015

MITIGATION ACTIVITIES COMPLETED YES  NO

EXPECTED COMPLETION DATE 3/1/2014  
 EXTENSIONS GRANTED  
 ACTUAL COMPLETION DATE 3/1/2014  
 DATE OF CERTIFICATION LETTER 10/20/2015  
 CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF 3/1/2014  
 VERIFIED COMPLETE BY REGIONAL ENTITY ON 10/20/2015<sup>3</sup>

ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT RECURRENCE

To mitigate this violation, SPP:

- 1) SPP implemented additional validations that the data was being submitted by all resources.
- 2) SPP implemented its Day Ahead Market and consolidated to a single Balancing Authority on March 1, 2014. As part of that implementation, additional requirements and data validations for hourly resource availability were put in place as SPP began its role as a Balancing Authority. SPP now has commitment authority for all resources in its BA footprint. SPP does collect such information under an obligation contained in the SPP Criteria, from all generating units within the SPP Reliability Coordinator Area.

LIST OF EVIDENCE REVIEWED BY REGIONAL ENTITY TO EVALUATE COMPLETION OF MITIGATION ACTIVITIES OR MILESTONES (FOR CASES IN WHICH MITIGATION IS NOT YET COMPLETED, LIST EVIDENCE REVIEWED FOR COMPLETED MILESTONES)

SERC reviewed the following evidence submitted by SPP as evidence of completion of its Mitigation Plan:

- 1) Certification of Southwest Power Pool, Inc. as the Balancing Authority for the SPP Balancing Authority Area, *Southwest Power Pool, Inc.*, Docket Nos. ER12-1179-015, dated February 18, 2014, confirming NERC's certification of SPP as the SPP Balancing Authority.
- 2) A screenshot of an SPP tool showing market data and resource details for a single generation unit and a list of power plants and individual generation units that could be queried for similar data. The screenshot demonstrates that

<sup>3</sup> This Disposition Document serves as SERC's Verification of Mitigation Plan Completion.

SPP received generation forecasts for the generation unit in question in the form of market prices for energy during the periods that the generation unit was available for dispatch by SPP as the Balancing Authority.

- 3) An attestation that SPP does collect such information under an obligation contained in the SPP Criteria, from all generating units within the SPP Reliability Coordinator Area.

**EXHIBITS:**

**SOURCE DOCUMENT**

NERC Compliance Investigation report dated August 31, 2012

**MITIGATION PLAN**

SPP Mitigation Activities submitted on September 7, 2015

**CERTIFICATION BY REGISTERED ENTITY**

SPP Certification of Completed Mitigation Activities dated October 20, 2015

**VERIFICATION BY REGIONAL ENTITY**

This Disposition document serves as SERC's Verification of Mitigation Activities Completion.

**Attachment C**  
**Disposition of Violation:**  
**IRO-005-1 R1; R1.8 (SERC2013012080)**  
**dated October 20, 2015**

**DISPOSITION OF VIOLATION<sup>1</sup>**  
**Dated October 20, 2015**

NERC TRACKING NO.      SERC TRACKING NO.  
 NO.  
**SERC2013012080      SERC2013-401775**

**I. VIOLATION INFORMATION**

RELIABILITY STANDARD	REQUIREMENT(S)	SUB-REQUIREMENT(S)	VRF(S)	VSL(S)
<b>IRO-005-1</b>	<b>R1</b>	<b>R1.8</b>	<b>High</b>	<b>Lower<sup>2</sup></b>

VIOLATION(S) APPLIES TO THE FOLLOWING FUNCTIONS IN THE SERC  
 REGION:

BA	DP	GO	GOP	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
								X						

PURPOSE OF THE RELIABILITY STANDARD AND TEXT OF RELIABILITY STANDARD AND REQUIREMENT(S)/SUB-REQUIREMENT(S)

**The purpose statement of IRO-005 provides:**

The Reliability Coordinator must be continuously aware of conditions within its Reliability Coordinator Area and include this information in its reliability assessments. The Reliability Coordinator must monitor Bulk Electric System parameters that may have significant impacts upon the Reliability Coordinator Area and neighboring Reliability Coordinator Areas.

**IRO-005-1 R1 provides:**

**R1.** Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following:

**R1.1.** Current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.

**R1.2.** Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.

<sup>1</sup> For purposes of this document and attachments hereto, each violation at issue is described as a "violation," regardless of its procedural posture and whether it was a possible, alleged or confirmed violation.

<sup>2</sup> Basis for VSL Assignment: SERC assessed a Violation Severity Level (VSL) of "Lower" in accordance with the March 1, 2008 VSL Matrix because SPP failed to monitor planned generation dispatches.

- R1.3.** Current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.
- R1.4.** System real and reactive reserves (actual versus required).
- R1.5.** Capacity and energy adequacy conditions.
- R1.6.** Current ACE for all its Balancing Authorities.
- R1.7.** Current local or Transmission Loading Relief procedures in effect.
- R1.8.** Planned generation dispatches.
- R1.9.** Planned transmission or generation outages.
- R1.10.** Contingency events.

#### VIOLATION DESCRIPTION

On November 4, 2009, NERC initiated a Compliance Investigation (CI) in response to a June 17, 2009 event. On July 19, 2010, NERC added a March 4, 2010 event to the scope of the CI.

On February 27, 2013, the NERC CI team reported to SERC that SPP, as a Reliability Coordinator (RC), was in violation of IRO-005-2 R1.8. SPP failed to monitor all planned generation dispatches in its RC area. SERC later determined that the violation extended back to Version 1 of the Standard.

At approximately 9:55 a.m. on June 17, 2009, there was a transmission system outage in the St. Joseph, Missouri service territory. The outage was caused by a series of related events, including a scheduled (and SPP-approved) outage of the St. Joseph-Cook transmission line, and the loss of the Woodbine-East Side and Woodbine –St. Joseph 161 kV lines due to a fault. The Woodbine-East Side and Woodbine – St. Joseph lines were serially connected and thus SERC considered the loss of the lines to be an N-1 event. The loss of these lines resulted in the separation of the energy and reactive power source at the St. Joseph substation from the St. Joseph area. This in turn placed the burden of energy and reactive system demand on the Lake Road generation station and the Lake Road-Alabama-Nashua transmission path to serve load at the Cook, Industrial Park, Lake Road, Alabama, and East Side substations, resulting in a decline of system voltage in the St. Joseph area.

There are seven generating units at the Lake Road generating station. At the time, however, only Unit 4 was online. To support the system voltage in the St. Joseph area, Lake Road Unit 4 reactive power output automatically increased to its maximum capability. At the time of the event, Unit 4 was supplying 86 MW and 33 MVAR. At approximately 9:57 a.m., Lake Road Unit 4 tripped by automatic relay action caused by the Unit 4 exciter.

The loss of Lake Road Unit 4 resulted in an increase of real and reactive power on the Lake Road-Alabama-Nashua 161 kV transmission path, which was eventually opened at the Alabama substation by over-current relay action. This resulted in a subsequent loss of energy to serve loads at the Cook, Industrial Park, Lake Road, Alabama, and East Side

substations. This loss of energy resulted in the loss of 258 MW of load, affecting approximately 48,800 customers.

SPP’s data requirements are defined in its Criteria document. In Appendix 7 of the SPP Criteria, SPP identifies additional operational and topology data that it requires. One of the data items that SPP requires is a resource plan, which requires SPP members to “submit resource plans for generating facilities within the SPP region ... for the current day and next 6 days. An hourly MW plan must be submitted. The plan may be submitted on a unit-by-unit or plant-by-plant basis as the unit or plant is modeled in the SPP EMS. For each unit and for each hour the following information must be submitted: Resource Status, Planned MW, Minimum Operating Limit, and Maximum Operating Limit.” This data requirement was in effect prior to the mandatory and enforceable date of the IRO-005-1 Standard.

In studies used for contingency planning, SPP included hourly forecasts for approximately 59,000 MW of generation that was participating in the Real-Time Energy Imbalance Service (RTEIS) market. However, despite SPP’s Criteria, SPP used assumptions based on the reported availability of the units and did not request or use information regarding planned generation dispatches, including hourly MW plans, for approximately 15,500 MW of generation that was not participating in the RTEIS market, including the Lake Road units, and thus did not monitor planned generation dispatches for those units.

Using SPP’s assumptions, six of the seven Lake Road units were considered to be available to be brought online and capable of supplying approximately 104 MW and 60 MVAR of power to the system, if needed. The seventh Lake Road unit was not included in SPP’s next day study for June 17, 2009, despite SPP being aware of all seven Lake Road units through supervisory control and data acquisition (SCADA) data.

**RELIABILITY IMPACT STATEMENT- POTENTIAL AND ACTUAL**

This violation posed a serious and substantial risk to the reliability of the bulk power system. SPP’s failure to monitor all planned generation dispatches could lead to incorrect input to contingency analyses. Inaccurate analyses could lead to incorrect outage management, contingency plans, and responses to a real-time event. SPP’s failure to monitor the forecast generation contributed to a loss of reactive capability, overloaded lines and the loss of 258 MW of load, affecting approximately 48,800 customers.

**II. DISCOVERY INFORMATION**

**METHOD OF DISCOVERY**

- SELF-REPORT
- SELF-CERTIFICATION
- COMPLIANCE AUDIT
- COMPLIANCE INVESTIGATION
- SPOT CHECK

COMPLAINT	<input type="checkbox"/>
PERIODIC DATA SUBMITTAL	<input type="checkbox"/>
EXCEPTION REPORTING	<input type="checkbox"/>

## DURATION DATE(S)

6/18/2007 (when the Standard became mandatory and enforceable) through 3/1/2014  
(mitigation completion)

DATE DISCOVERED BY OR REPORTED TO REGIONAL ENTITY 2/27/2013

IS THE VIOLATION STILL OCCURRING YES  NO   
IF YES, EXPLAIN

REMEDIAL ACTION DIRECTIVE ISSUED YES  NO   
PRE TO POST JUNE 18, 2007 VIOLATION YES  NO

### III. MITIGATION INFORMATION

## FOR FINAL ACCEPTED MITIGATION ACTIVITIES:

DATE SUBMITTED TO REGIONAL ENTITY 9/7/2015  
DATE ACCEPTED BY REGIONAL ENTITY 10/15/2015

MITIGATION ACTIVITIES COMPLETED YES  NO

EXPECTED COMPLETION DATE 3/1/2014  
EXTENSIONS GRANTED  
ACTUAL COMPLETION DATE 3/1/2014  
DATE OF CERTIFICATION LETTER 10/20/2015  
CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF 3/1/2014  
VERIFIED COMPLETE BY REGIONAL ENTITY ON 10/20/2015<sup>3</sup>

ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT  
RECURRENCE

To mitigate this violation, SPP:

- 1) SPP implemented additional validations that the data was being submitted by all resources.
- 2) SPP implemented its Day Ahead Market and consolidated to a single Balancing Authority on March 1, 2014. As part of that implementation, additional requirements and data validations for hourly resource availability were put in place as SPP began its role as a Balancing Authority. SPP now has commitment authority for all resources in its BA footprint. SPP does

<sup>3</sup> This Disposition Document serves as SERC's Verification of Mitigation Plan Completion.

collect such information under an obligation contained in the SPP Criteria, from all generating units within the SPP Reliability Coordinator Area.

**LIST OF EVIDENCE REVIEWED BY REGIONAL ENTITY TO EVALUATE COMPLETION OF MITIGATION ACTIVITIES (FOR CASES IN WHICH MITIGATION IS NOT YET COMPLETED, LIST EVIDENCE REVIEWED FOR COMPLETED MILESTONES)**

SERC reviewed the following evidence submitted by SPP as evidence of completion of its Mitigation Activities:

- 1) Certification of Southwest Power Pool, Inc. as the Balancing Authority for the SPP Balancing Authority Area, *Southwest Power Pool, Inc.*, Docket Nos. ER12-1179-015, dated February 18, 2014, confirming NERC's certification of SPP as the SPP Balancing Authority.
- 2) A screenshot of an SPP tool showing market data and resource details for a single generation unit and a list of power plants and individual generation units that could be queried for similar data. The screenshot demonstrates that SPP received generation forecasts for the generation unit in question in the form of market prices for energy during the periods that the generation unit was available for dispatch by SPP as the Balancing Authority.
- 3) An attestation that SPP does collect such information under an obligation contained in the SPP Criteria, from all generating units within the SPP Reliability Coordinator Area.

**EXHIBITS:**

**SOURCE DOCUMENT**

NERC Compliance Investigation report dated August 31, 2012

**MITIGATION PLAN**

SPP Mitigation Activities submitted on September 7, 2015

**CERTIFICATION BY REGISTERED ENTITY**

SPP Certification of Completed Mitigation Activities dated October 20, 2015

**VERIFICATION BY REGIONAL ENTITY**

This Disposition document serves as SERC's Verification of Mitigation Activities Completion.

**Attachment D  
Disposition of Violation:  
FAC-014-2 R1 (SERC2013012081)  
dated August 12, 2016**

**DISPOSITION OF VIOLATION<sup>1</sup>**  
**Dated August 12, 2016**

NERC TRACKING NO.      SERC TRACKING NO.

**SERC2013012081      SERC2013-401776**

**I.      VIOLATION INFORMATION**

RELIABILITY STANDARD	REQUIREMENT(S)	SUB-REQUIREMENT(S)	VRF(S)	VSL(S)
<b>FAC-014-2</b>	<b>R1</b>		<b>Medium</b>	<b>Lower<sup>2</sup></b>

VIOLATION(S) APPLIES TO THE FOLLOWING FUNCTIONS IN THE SERC  
REGION:

BA	DP	GO	GOP	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
								X						

PURPOSE OF THE RELIABILITY STANDARD AND TEXT OF RELIABILITY STANDARD AND REQUIREMENT(S)/SUB-REQUIREMENT(S)

**The purpose statement of FAC-014-2 provides:**

To ensure that System Operating Limits (SOLs) used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on an established methodology or methodologies.

**FAC-014-2 R1 provides:**

**R1.** The Reliability Coordinator shall ensure that SOLs, including Interconnection Reliability Operating Limits (IROs), for its Reliability Coordinator Area are established and that the SOLs (including Interconnection Reliability Operating Limits) are consistent with its SOL Methodology.

**VIOLATION DESCRIPTION**

On November 4, 2009, NERC initiated a Compliance Investigation (CI) in response to a June 17, 2009 event. On July 19, 2010, NERC added a March 4, 2010 event to the scope of the CI.

<sup>1</sup> For purposes of this document and attachments hereto, each violation at issue is described as a "violation," regardless of its procedural posture and whether it was a possible, alleged or confirmed violation.

<sup>2</sup> Basis for VSL Assignment: SERC assessed a Violation Severity Level (VSL) of "Lower" in accordance with the July 24, 2013 VSL Matrix because there are SOLs for the Reliability Coordinator Area, but one of these SOLs was inconsistent with the Reliability Coordinator's SOL Methodology.

On February 27, 2013, the NERC CI team reported to SERC that SPP, as a Reliability Coordinator (RC), was in violation of FAC-014-2 R1. SPP failed to ensure that its System Operating Limits (SOLs), including Interconnection Reliability Operating Limits (IROLs), were consistent with its SOL Methodology.

At 9:31 p.m. on March 4, 2010, the Circle-Reno 115 kV line flow exceeded the normal rating of 216 MVA, but was below the emergency rating of 240 MVA. SPP was unaware of the normal rating exceedance because its supervisory control and data acquisition (SCADA) and its Power World Retriever (PWR) were incorrectly set at 446 MVA. SPP's Real-Time Network analysis (RTNET) alarm was set at 240 MVA, and its Real-Time Contingency Analysis (RTCA) alarm was set at 228 MVA. At 9:52 p.m., a Transmission Operator (TOP) contacted SPP to inform it that the normal rating of 216 MVA on the Circle-Reno line had been exceeded and to request relief.

At approximately 9:55 p.m., SPP's RTCA application indicated a loading issue on Circle-Reno line for an N-1 contingency plan, specifically for the loss of the Emporia-Wichita 345 kV line. The RTCA application indicated that, during the contingency, the Circle-Reno line could be loaded up to 130% of its emergency rating. At 9:59 p.m., the Circle-Reno line flow exceeded 240 MVA in real time, and continued to do so several times during the next 45 minutes. The load on the line was approximately 246.7 MVA, 102.8% of the emergency rating. At 11:08 p.m., the Circle-Reno line flow dropped below 216 MVA, the normal rating.

In response to the call from the TOP, the RTCA results, and to control the post-contingent flows, SPP issued a dispatch order to lower generation by 20 MW at the sending end of the line, and to raise generation by 20 MW at the receiving end of the line. Voice recordings show that SPP proposed the creation of a temporary Flowgate, which the TOP consented to. SPP then created the temporary Flowgate and established an SOL on the Circle-Reno line of 284 MVA, or 118% of the line's emergency Facility Rating.

SPP's Criteria states that System Operating Limits are based upon certain operating criteria. The Criteria includes methodologies for determining SOLs in both the operating and planning horizon (found in Sections 12.3.1 and 12.3.2, respectively) that state that "SOLs shall not exceed applicable Facility Ratings. SOLs equal applicable Facility Ratings unless additional studies have established a lower limit based on other operational issues such as transient, dynamic and voltage stability, etc." The Criteria also notes in Section 12.3 that SPP "creates temporary flowgates when operating conditions reveal any additional limiting system configurations. Since SPP is utilizing these flowgates to ensure the system is operating within acceptable reliability criteria, these flowgate limits serve as the SPP System Operating Limits." However, there is no explicit statement in the Criteria that temporary flowgates can exceed applicable Facility Ratings. Thus, the establishment of a SOL higher than the emergency rating of the Facility was not consistent with the SOL methodology. Finally, the Criteria document states in Section 12.2.1.2 that member systems "may use a higher emergency rating if [the members] are willing to experience more transformer loss-of-life." During the conversation between SPP and the TOP, however, it is not clear that a transformer was

the limiting element and the issue of loss-of-life was not discussed, again showing that the establishment of the SOL that was greater than the Facility Rating was inconsistent with the SOL methodology.

**RELIABILITY IMPACT STATEMENT- POTENTIAL AND ACTUAL**

This violation posed a minimal risk and did not pose a serious or substantial risk to the reliability of the bulk power system. SPP’s failure to ensure that a SOL was established in accordance with its SOL methodology could have led to unexpected equipment damage or loss-of-life. However, SPP has tools and coordinates with other entities within its RC area to provide an early detection of an overload condition, allowing SPP to initiate corrective actions. Although SPP’s SCADA and the PWR alarms were set higher than the normal and emergency Facility Ratings, SPP’s two Energy Management System (EMS) alarms, RTNET and RTCA, were configured to provide operator notification of real or potential loading issues at 100% and 95%, respectively, of the emergency rating. In this case, and as the result of the EMS notification, the overload condition was detected, SPP quickly initiated corrective actions which included reconfiguring the generation, and the issue was resolved without losing any lines, loads or generating units.

**II. DISCOVERY INFORMATION**

**METHOD OF DISCOVERY**

- SELF-REPORT
- SELF-CERTIFICATION
- COMPLIANCE AUDIT
- COMPLIANCE INVESTIGATION
- SPOT CHECK
- COMPLAINT
- PERIODIC DATA SUBMITTAL
- EXCEPTION REPORTING

**DURATION DATE(S)**

3/4/2010 (when the SOL was established) through 4/30/2010 (when the TOP upgraded the rating of the Circle-Reno line to 359 MVA)

**DATE DISCOVERED BY OR REPORTED TO REGIONAL ENTITY** 2/27/2013

- IS THE VIOLATION STILL OCCURRING YES  NO
- IF YES, EXPLAIN
- REMEDIAL ACTION DIRECTIVE ISSUED YES  NO
- PRE TO POST JUNE 18, 2007 VIOLATION YES  NO

**III. MITIGATION INFORMATION**

## FOR FINAL ACCEPTED MITIGATION ACTIVITIES:

DATE SUBMITTED TO REGIONAL ENTITY	9/7/2015
DATE ACCEPTED BY REGIONAL ENTITY	10/15/2015

MITIGATION ACTIVITIES COMPLETED	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
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EXPECTED COMPLETION DATE	8/1/2016
EXTENSIONS GRANTED	
ACTUAL COMPLETION DATE	7/21/2016
DATE OF CERTIFICATION LETTER	8/9/2016
CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF	7/21/2016
VERIFIED COMPLETE BY REGIONAL ENTITY AS OF	8/12/2016 <sup>3</sup>

## ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT RECURRENCE

To mitigate this violation, SPP will:

- 1) Revise its RC SOL Methodology, found in the SPP Criteria, to improve the clarity that the limit provided by Transmission Operators to the RC to be used for the SOL must not exceed the applicable Facility Rating for the current system or ambient conditions and clarify the SOL establishment procedure. If system or ambient conditions allow for a new, higher Facility Rating, then evidence must be obtained that establishes the higher Facility Rating.
- 2) Train all individuals who may become involved in the process on the revised process and their learning will be evaluated.
- 3) Develop and present reminders to all SPP RC operators that SOLs will not exceed established Facility Ratings.
- 4) Provide redlined SPP Criteria to SPP working groups to evaluate and approve the SOL Methodology changes.
- 5) Review and edit as necessary SPP internal and member training programs regarding SOLs and the establishment procedure to include the new, proposed SOL methodology language and clarified intent.
- 6) Have the SPP Markets and Operations Policy Committee review the proposed SOL Methodology changes in the Criteria for approval and submission to the SPP Board of Directors.
- 7) Have the SPP Board of Directors review the proposed SOL Methodology changes in the Criteria for approval.

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<sup>3</sup> This Disposition document serves as SERC's Verification of Mitigation Activities Completion.

LIST OF EVIDENCE REVIEWED BY REGIONAL ENTITY TO EVALUATE COMPLETION OF MITIGATION ACTIVITIES (FOR CASES IN WHICH MITIGATION IS NOT YET COMPLETED, LIST EVIDENCE REVIEWED FOR COMPLETED MILESTONES)

SERC reviewed the following evidence submitted by SPP as evidence of completion of its Mitigation Activities:

- 1) A SOL Methodology Revisions Recommendation Report requesting revisions to the RC SOL Methodology in the Criteria and reflecting the approval of the SPP Board of Directors, and a revised Congestion Management Procedure with revisions to the Facility Rating section reflecting changes driven by the revision request report.
- 2) A report showing completed training on the SPP RC Congestion Management Procedure and a signed attestation by the Operations Analyst and Performance Support trainer indicating the dates the training was completed and evaluated for RCs and shift supervisors.
- 3) A revised Congestion Management Procedure including a reminder to operators that “SOLs shall not exceed Facility Ratings.”
- 4) A SOL Methodology Revisions Recommendation Report reflecting approved changes to the SPP Criteria relevant to the SOL Methodology.
- 5) A System Operator Conference workbook with 2016 course content that includes a discussion of the SOL Methodology, and a REOPS Participant Guide that references SOLs in the context of Emergency Operations and emphasizes that the Transmission Operator determines and SOL and refers the trainee to a specific section of the Criteria, where the changes to the SOL Methodology were made.
- 6) Minutes from the Markets and Operations Policy Committee showing the approval of the proposed changes to the SOL Methodology in the Criteria as part of the consent agenda.
- 7) Minutes from the Board of Directors approving the proposed changes to the SOL Methodology in the Criteria as part of the consent agenda.

EXHIBITS:

SOURCE DOCUMENT

NERC Compliance Investigation report dated August 31, 2012

MITIGATION PLAN

SPP Mitigation Activities submitted on September 7, 2015

CERTIFICATION BY REGISTERED ENTITY

SPP Certification of Completed Mitigation Activities dated August 9, 2016

VERIFICATION BY REGIONAL ENTITY

This Disposition document serves as SERC’s Verification of Mitigation Activities Completion.