

February 28, 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 American Electric Power Service Corp. as agent for AEP Texas North Co., AEP Texas Central Co., and Public Service of Oklahoma (AEP), FERC Docket No. NP17-_-000

Dear Ms. Bose:

The North American Electric Reliability Corporation (NERC) hereby provides this Notice of Penalty¹ regarding American Electric Power Service Corp. as agent for AEP Texas North Co., AEP Texas Central Co., and Public Service of Oklahoma (AEP), NERC Registry ID# NCR04006,² with information and details regarding the nature and resolution of the violations³ discussed in detail in the Settlement Agreement attached hereto (Attachment A), in accordance with the Federal Energy Regulatory Commission's (Commission or FERC) rules, regulations, and orders, as well as NERC's Rules of Procedure including Appendix 4C (NERC Compliance Monitoring and Enforcement Program (CMEP)).⁴

¹ *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 (2016). *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).

² AEP was included on the NERC Compliance Registry as a Distribution Provider, Generator Owner, Generator Operator, Transmission Owner, and Transmission Planner on June 28, 2007, and as a Transmission Operator (TOP) on May 4, 2010.

³ For purposes of this document, each violation at issue is described as a "violation," regardless of its procedural posture and whether it was a possible, alleged, or confirmed violation.

⁴ See 18 C.F.R § 39.7(c)(2) and 18 C.F.R § 39.7(d).

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NERC is filing this Notice of Penalty with the Commission because Texas Reliability Entity, Inc. (Texas RE) and AEP entered into a Settlement Agreement to resolve all outstanding issues arising from Texas RE’s determination and findings of the violations of EOP-003-2 R5 and TOP-001-1a R3.

According to the Settlement Agreement, AEP neither admits nor denies the violations, but agreed to the assessed penalty of two hundred five thousand dollars (\$205,000), in addition to other remedies and actions to mitigate the instant 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 Texas RE and AEP. The details of the findings and basis for the penalty are set forth in the Settlement Agreement and herein. This Notice of Penalty filing contains the basis for approval of the Settlement Agreement by the NERC Board of Trustees Compliance Committee (NERC BOTCC).

In accordance with Section 39.7 of the Commission’s regulations, 18 C.F.R. § 39.7 (2016), NERC provides the following summary table identifying each violation of a Reliability Standard resolved by the Settlement Agreement. Further information on the subject violations is set forth in the Settlement Agreement and herein.

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

NERC Violation ID	Standard	Req	VRF/VSL	Applicable Function(s)	Discovery Method* Date	Violation Start-End Date	Risk	Penalty Amount
TRE2015015386	EOP-003-2	R5	High/Severe	TOP	CA 12/1/2015	10/8/2014 – 10/8/2014	Moderate	\$205,000
TRE2015015387	TOP-001-1a	R3	High/Severe					

FACTS COMMON TO TRE2015015386 EOP-003-2 R5 and TRE2015015387 TOP-001-1a R3

On October 8, 2014, the Lower Rio Grande Valley (Valley) area experienced three generation unit trips that, combined with existing planned generation outages and elevated load due to high temperatures, resulted in certain transmission facilities exceeding their System Operating Limits (SOLs). The Electric

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Reliability Council of Texas, Inc. (ERCOT) responded by directing AEP to shed 134 MW of load. AEP personnel inadvertently used an incorrect load shedding setting, resulting in 678 MW of load shed. AEP restored approximately 440 MW of the excess load shed within ten minutes of the initial load shed event.

Texas RE discovered both violations during a Compliance Audit conducted from October 26, 2015 through December 1, 2015. Texas RE's Audit Findings for the EOP-003-2 R5 and TOP-001-1a R3 violations are included as Attachments B1 and C1, respectively.

The root cause of these violations was a lack of a robust process for ensuring the correct amount of load shed.

The violations directly led to the unintended loss of approximately 544 MW of load and approximately ten minutes of lost power for more than 150,000 customers. Voltages in the immediate area momentarily spiked above normal operating ranges, and system frequency momentarily peaked at 60.13 Hz. AEP's unintended load shedding represented 27% of the Lower Rio Grande Valley's 2,020 MW of total load, and 1% of the ERCOT region's 54,346 MW of load.

The violations' risk was mitigated because AEP shed excess load in response to the ERCOT load shed directive rather than failing to shed sufficient load or exacerbating the need for load shed. Additionally, the resulting voltages after the load shed were within emergency voltage limits and just above the normal voltage range. Similarly, while frequency did reach 60.13 Hz, it was well within ERCOT's operating frequency range. The system also operated as designed, and frequency recovered in eight seconds. Moreover, if additional contingencies had occurred during this period, additional load shed may have been possible. Finally, there are no SOLs in the Valley that, if violated, could lead to instability, uncontrolled separation, or cascading outages beyond the Valley region itself—thereby limiting the potential harm that could have resulted from these violations.

TRE2015015386 EOP-003-2 R5 – OVERVIEW

Texas RE determined that AEP failed to comply with reliability directives issued by its Reliability Coordinator when it shed more load than instructed by ERCOT.

Texas RE determined this violation posed a moderate risk and did not pose a serious or substantial risk to the reliability of the bulk power system (BPS). Attachment A1 includes the facts regarding the violation that Texas RE considered in its risk assessment.

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AEP submitted its Mitigation Plan, designated TREMIT012461, to address the referenced violation. Attachment A1 includes a description of the mitigation activities AEP took to address this violation. A copy of the Mitigation Plan is included as Attachment B2.

AEP certified on December 5, 2016 that it completed all mitigation activities. A copy of AEP's certification is included as Attachment B3. Texas RE verified on January 4, 2017 that AEP completed all mitigation activities on November 14, 2016. Attachment B3 provides specific information on Texas RE's verification of AEP's completion of the activities.

TRE2015015387 TOP-001-1a R3 – OVERVIEW

Texas RE determined that AEP failed to implement load shedding in steps established to minimize the risk of further uncontrolled separation, loss of generation, or system shutdown.

Texas RE determined that this violation posed a moderate risk and did not pose a serious or substantial risk to the reliability of the BPS. Attachment A1 includes the facts regarding the violation that Texas RE considered in its risk assessment.

AEP submitted its Mitigation Plan, designated TREMIT012460, to address the referenced violation. Attachment A1 includes a description of the mitigation activities AEP took to address this violation. A copy of the Mitigation Plan is included as Attachment C2.

AEP certified on December 5, 2016 that it had completed all mitigation activities. A copy of AEP's certification is included as Attachment C3. Texas RE verified on January 4, 2017 that AEP completed all mitigation activities on November 14, 2016. Attachment C3 provides specific information on Texas RE's verification of AEP's completion of the activities.

Regional Entity's Basis for Penalty

According to the Settlement Agreement, Texas RE assessed a penalty of two hundred five thousand dollars (\$205,000) for the referenced violations. In reaching this determination, Texas RE considered the following factors:

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1. Texas RE considered AEP's compliance history with EOP-003-1 R8 as an aggravating factor in the penalty determination.⁵ Texas RE determined that AEP's compliance history was not relevant for the violation of EOP-003-2 R5;
2. AEP had an internal compliance program at the time of the violation which Texas RE considered a mitigating factor, as discussed in Attachment A1;
3. AEP was cooperative throughout the compliance enforcement process;
4. there was no evidence of any attempt to conceal a violation nor evidence of intent to do so;
5. the violations resulted in a loss of load beyond the intended controlled load shedding;
6. the violations posed a moderate risk and not a serious or substantial risk to the reliability of the BPS, as discussed in Attachment A1; and
7. there were no other mitigating or aggravating factors or extenuating circumstances that would affect the assessed penalty.

After consideration of the above factors, Texas RE determined that, in this instance, the penalty amount of two hundred five thousand dollars (\$205,000) is appropriate and bears a reasonable relation to the seriousness and duration of the violations.

Statement Describing the Assessed Penalty, Sanction or Enforcement Action Imposed⁶

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,⁷ the NERC BOTCC reviewed the Settlement Agreement and supporting documentation on February 7, 2017 and approved the Settlement Agreement. In approving the Settlement Agreement, the NERC BOTCC

⁵ AEP's relevant prior noncompliance with EOP-003-1 R8 includes NERC Violation ID TRE2012010887, RFC2012010146, and RFC2012010147.

⁶ See 18 C.F.R. § 39.7(d)(4).

⁷ *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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reviewed the applicable requirements of the Commission-approved Reliability Standards and the underlying facts and circumstances of the violations at issue.

For the foregoing reasons, the NERC BOTCC approved the Settlement Agreement and believes that the assessed penalty of two hundred five thousand dollars (\$205,000) is appropriate for the violations and circumstances at issue, and is consistent with NERC's goal to promote and ensure reliability of the BPS.

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.

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 Texas RE and AEP executed February 14, 2017, included as Attachment A;
 1. Disposition Documents for the Violations, included as Attachment A1 to the Settlement Agreement;
- b) Record documents for the violation of EOP-003-2 R5 (TRE2015015386), included as attachment B:
 1. Texas RE's Audit Finding for EOP-003-2 R5 dated December 7, 2015;
 2. AEP's Mitigation Plan designated as TREMIT012461 for EOP-003-2 R5 submitted December 5, 2016;
 3. AEP's Certification of Mitigation Plan Completion for EOP-003-2 R5 dated January 5, 2017; and
- c) Record documents for the violation of TOP-001-1a R3 (TRE2015015387), included as attachment C:
 1. Texas RE's Audit Finding for TOP-001-1a R3 dated December 7, 2015;
 2. AEP's Mitigation Plan designated as TREMIT012460 for TOP-001-1a R3 submitted December 5, 2016;
 3. AEP's Certification of Mitigation Plan Completion for TOP-001-1a R3 dated January 5, 2017; and

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

<p>Derrick Davis* Director, Enforcement, Reliability Standards & Registration Texas Reliability Entity, Inc. 805 Las Cimas Parkway Suite 200 Austin, TX 78746 (512) 583-4923 (512) 233-2233 – facsimile derrick.davis@texasre.org</p> <p>Joseph Younger* Manager, Enforcement Texas Reliability Entity, Inc. 805 Las Cimas Parkway Suite 200 Austin, TX 78746 (512) 583-4939 (512) 233-2233 – facsimile joseph.younger@texasre.org</p> <p>Abby Fellinger* CMEP Analyst, Sr. Texas Reliability Entity, Inc. 805 Las Cimas Parkway Suite 200 Austin, TX 78746 (512) 583-4927 (512) 233-2233 – facsimile abby.fellinger@texasre.org</p>	<p>Sonia C. Mendonça* Vice President of Enforcement and Deputy General Counsel 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>*Persons to be included on the Commission’s service list are indicated with an asterisk. NERC requests waiver of the Commission’s rules and regulations to permit the inclusion of more than two people on the service list.</p>
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Public Service of Oklahoma

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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/ Edwin G. Kichline

Sonia C. Mendonça

Vice President of Enforcement and Deputy
General Counsel

Edwin G. Kichline

Senior Counsel and Director of
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cc: American Electric Power Service Corp. as agent for AEP Texas North Co., AEP Texas Central Co.,
and Public Service of Oklahoma
Texas Reliability Entity, Inc.

Attachments

Attachment A

**Settlement Agreement by and between Texas
RE and AEP executed February 14, 2017**

SETTLEMENT AGREEMENT

OF

TEXAS RELIABILITY ENTITY, INC.

AND

AMERICAN ELECTRIC POWER SERVICE CORPORATION AS AGENT FOR AEP TEXAS NORTH COMPANY, AEP TEXAS CENTRAL COMPANY, AND PUBLIC SERVICE COMPANY OF OKLAHOMA

I. INTRODUCTION

1. North American Electric Reliability Corporation (NERC) delegated authority to Texas Reliability Entity, Inc. to become the regional entity for the ERCOT region effective July 1, 2010, pursuant to Section 215(e)(4) of the Federal Power Act. NERC also delegated to Texas Reliability Entity, Inc. the authority and responsibility for the continuation of all compliance monitoring and enforcement activities that it had previously delegated to Texas Regional Entity (a division of Electric Reliability Council of Texas, Inc.). The term "Texas RE" is used herein to refer to both Texas Regional Entity and Texas Reliability Entity, Inc.
2. Texas RE and American Electric Power Service Corporation, as agent for AEP Texas North Company, AEP Texas Central Company, and Public Service Company of Oklahoma (AEP) enter into this Settlement Agreement (Settlement Agreement or Agreement) to resolve all outstanding issues arising from a preliminary and non-public assessment resulting in Texas RE's determination and findings, pursuant to the North American Electric Reliability Corporation (NERC) Rules of Procedure, of two alleged violations by AEP of NERC Reliability Standards EOP-003-2 R5 (TRE201505386) and TOP-001-1a R3 (TRE2015015387).
3. AEP neither admits nor denies the violations of NERC Reliability Standards EOP-003-2 R5 and TOP-001-1a R3 and has agreed to the proposed penalty of \$205,000.00 to be assessed to AEP, in addition to other remedies and mitigation actions to mitigate the instant Alleged Violations and facilitate future compliance under the terms and conditions of the Settlement Agreement.

II. STIPULATION

4. The facts stipulated herein are stipulated solely for the purpose of resolving, between AEP and Texas RE, the matters discussed herein and do not constitute stipulations or admissions for any other purpose. The attached Disposition Document is incorporated herein in its entirety. AEP and Texas RE hereby stipulate and agree to the following:

Background

5. See Section I of Addendum A in the Disposition Document for a description of AEP.

Violations of NERC Reliability Standards

6. See Sections III-a. and III-b. of Addendum A in the Disposition Document for the description of the violations.

III. PARTIES' SEPARATE REPRESENTATIONS

STATEMENT OF TEXAS RE AND SUMMARY OF FINDINGS

7. During a Compliance Audit conducted from October 26, 2015 through November 5, 2015, Texas RE determined that AEP, as a Transmission Operator (TOP), was in violation of TOP-001-1a R3. Specifically, AEP failed to implement load shedding in steps established to minimize the risk of further uncontrolled separation, loss of generation, or system shutdown with regard to the ERCOT load shed directive issued on October 8, 2014. ERCOT directed AEP to shed 134 MW of load. Instead, AEP shed approximately 678 MW of load.
8. During a Compliance Audit conducted from October 26, 2015 through November 5, 2015, Texas RE determined that AEP, as a TOP, was in violation of EOP-003-2 R5. Specifically, AEP failed to comply with reliability directives issued by the Reliability Coordinator unless such actions would violate safety, equipment, regulatory, or statutory requirements.
9. Texas RE agrees that this Agreement is in the best interest of the parties and in the best interest of bulk power system reliability.

STATEMENT OF AEP

10. AEP neither admits nor denies that the facts set forth and agreed to by the parties for purposes of this Agreement constitute violations of EOP-003-2 R5 and TOP-001-1a R3.
11. AEP has agreed to enter into this Settlement Agreement with Texas RE to avoid extended litigation with respect to the matters described or referred to herein, to avoid uncertainty, and to effectuate a complete and final resolution of the issues set forth herein. AEP agrees that this Agreement is in the best interest of the parties and in the best interest of maintaining a reliable electric infrastructure.

IV. MITIGATING ACTIONS, REMEDIES AND SANCTIONS

12. For purposes of settling any and all disputes arising from Texas RE's investigation into the matters discovered during a Texas RE audit of AEP, Texas RE and AEP agree that on and after the effective date of this Agreement, AEP has taken or shall take, on or after the effective date of this Agreement, the following actions to enhance the reliability of the Bulk Power System and prevent recurrence of the issues presented in this Agreement:

Activity	Dates to be completed
i. Restored approximately 678 MW of load shed	Complete
ii. Removed the "Zone Cycle Load Shed Button" from the AEP manual load shed program	Complete
iii. Increased the "time-out" interval on its load shed program	Complete
iv. Revised AEP's Transmission Load Shed Procedure to require the Transmission dispatcher to implement ERCOT load shedding directives in amounts no larger than 200 MW in a single instruction within a single distribution district	Complete
v. Revised AEP's Transmission Load Shed Procedure to require verbal verification that the load shed values entered by the AEP Distribution Dispatcher are correct prior to executing the load shed command	Complete
vi. Revised AEP's Distribution Dispatch Center Automated Manual Load Shed Procedure to include verbal verification with the Transmission dispatcher as well as steps addressing a directive to restore load	Complete
vii. Developed a training video demonstrating the Automated Load Shedding process	Complete
viii. Provided training on the video to the Distribution dispatchers	Complete
ix. Added additional steps to AEP's Distribution Dispatch Center Automated Manual Load Shed Procedure describing the process for arming the Automated Load Shedding Program and for executing the load shed command	Complete

The preceding mitigating actions, as well as Remedies and Sanctions, are discussed in detail in the Disposition Document.

13. Texas RE and AEP agree that Texas RE has verified completion or will verify completion of the mitigating actions set forth above and in Sections IV-a. and IV-b. of Addendum A, Disposition of Violations.

14. In order to facilitate Texas RE's need to communicate the status and provide accountability to the ERO (NERC), AEP will provide updates quarterly, or more frequently, upon request by Texas RE. AEP will submit these status updates to

Texas RE in accordance with the confidentiality provisions of Section 1500 of the NERC Rules of Procedure.

15. It is understood that Texas RE staff shall audit the progress of mitigation plans and any other remedies of this Agreement, including, but not limited to, site inspection, interviews, and requests for other documentation to validate progress and/or completion of the mitigation plans and any other remedies of this Agreement. Texas RE shall reasonably coordinate audits and information requests with AEP related to this Agreement.
16. Texas RE staff also consider the specific facts and circumstances of the violations and AEP'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 such user, owner, or operator to remedy the violation in a timely manner."¹ The factors considered by Texas RE staff in the determination of the appropriate penalty are set forth in Section V of the Disposition Document.
17. Based on the above factors, as well as the mitigation actions and preventative measures taken, AEP shall pay the monetary penalty of \$205,000.00 to Texas RE within thirty days after the Agreement is either approved by the Federal Energy Regulatory Commission or by operation of law, and Texas RE shall notify NERC if the payment is not received.
18. Failure to make a timely penalty payment or 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 and/or additional violation(s) and may subject AEP to new or additional enforcement, penalty, or sanction actions in accordance with the NERC Rules of Procedure.
19. If AEP does not make the monetary penalty payment above at the times agreed by the parties, interest payable to Texas RE will begin to accrue pursuant to the Commission's regulations at 18 C.F.R. § 35.19(a)(2)(iii) from the date that payment is due, in addition to the penalty specified above. AEP shall retain all rights to defend against such additional enforcement actions in accordance with NERC Rules of Procedure.

V. ADDITIONAL TERMS

20. 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,

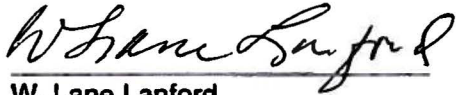
¹ 16 U.S.C. § 824o(e)(6).

director, agent, or representative of Texas RE or AEP has been made to induce the signatories or any other party to enter into the Settlement Agreement.

21. Texas RE 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 Texas RE and AEP 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 Texas RE will attempt to negotiate a revised settlement agreement with AEP 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.
22. 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.
23. AEP agrees that this Settlement Agreement, when approved by NERC and the Commission, shall represent a final settlement of all matters set forth herein and AEP waives its right to further hearings and appeal, unless and only to the extent that AEP contends that any NERC or Commission action on the Settlement Agreement contains one or more material modifications to the Settlement Agreement. Texas RE reserves all rights to initiate enforcement, penalty, or sanction actions against AEP in accordance with the NERC Rules of Procedure in the event that AEP fails to comply with the Mitigation Plan and compliance program agreed to in this Settlement Agreement. In the event AEP fails to comply with any of the stipulations, remedies, sanctions, or additional terms, as set forth in this Settlement Agreement, Texas RE will initiate enforcement, penalty, or sanction actions against AEP 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, AEP shall retain all rights to defend against such enforcement actions, also according to the NERC Rules of Procedure.
24. AEP consents to the use of Texas RE's determinations, findings, and conclusions set forth in this 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 AEP 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 Texas RE, nor does AEP consent to the use of this Settlement Agreement by any other party in any other action or proceeding.

25. 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.
26. 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.
27. The Settlement Agreement may be signed in counterparts.
28. This Settlement Agreement is executed in duplicate, each of which so executed shall be deemed to be an original.

Agreed to and accepted:



W. Lane Lanford
President & CEO
Texas Reliability Entity, Inc.

2-14-17

Date



Wade Smith
Senior Vice-President, Grid Development
American Electric Power Service Corporation

12/8/16

Date

Addendum A

DISPOSITION OF VIOLATIONS¹

Regional Entity: Texas Reliability Entity, Inc. (Texas RE)

Registered Entity Name: American Electric Power Service Corp as agent for AEP Texas North Co, AEP Texas Central Co, and Public Service of Oklahoma (AEP)

NERC Registry ID: NCR04006

I. ENTITY REGISTRATION INFORMATION

ENTITY IS REGISTERED FOR THE FOLLOWING FUNCTIONS:

Registered Function	Registration Date
Distribution Provider (DP)	6/28/2007
Generator Owner (GO)	6/28/2007
Generator Operator (GOP)	6/28/2007
Transmission Owner (TO)	6/28/2007
Transmission Planner (TP)	6/28/2007
Transmission Operator (TOP)	5/4/2010

Description of Registered Entity

AEP is engaged in the generation and transmission of electricity throughout the United States. AEP is one of the nation's largest generators of electricity, and owns nearly 32,000 MW of generating capacity in the U.S., serving over 5 million customers in 11 states. AEP also owns the nation's largest electricity transmission system, a 40,000+ mile network that includes more 765 kilovolt extra-high voltage transmission lines than all other U.S. transmission systems combined. AEP's transmission system directly or indirectly serves about 11 percent of the electricity demand in ERCOT. AEP Texas, a unit of AEP, delivers electricity to some 1,000,000 homes, businesses, and industries in south and west Texas. AEP Texas provides regulated energy delivery service to consumers, regardless of which Retail Electric Provider they choose.

AEP Texas includes AEP's two electric utility operating companies in ERCOT: AEP Texas Central Company (TCC) and AEP Texas North Company (TNC). The combined AEP TCC and AEP TNC service territory covers about 100,000 square miles, including 392 communities and all or parts of 96 counties.

¹ 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.

Is there a settlement agreement?

Yes No

With respect to the violation, the Registered Entity:

Neither admits nor denies it (settlement only)

Admits to it

Does not contest it (Including within 30 days)

With respect to the proposed penalty or sanction, the Registered Entity:

Accepts it/Does not contest it

II. PENALTY INFORMATION

Assessed Penalty or Sanction:

\$205,000.00

Factors Affecting Penalty Determination

(1) The presence and quality of the Registered Entity's Compliance Program

Is there a documented compliance program?

Yes No Undetermined

Explain

In late 2006, AEP created the Reliability Compliance Committee (RCC) as a cross-functional team of executives from business units within AEP. The RCC is responsible for ensuring the implementation and oversight of AEP's program to comply with the NERC reliability standards designed to protect the integrity of the North American bulk power system. The RCC oversees the development of a comprehensive plan for compliance with the NERC and Regional Reliability Organization (RRO) standards, as well as addressing other compliance related matters such as the approval of reliability compliance plans, policies, and procedures.

The specific roles of the RCC are as follows:

- Providing oversight and guidance to the implementation of the Reliability Compliance Program and for communicating to other non-RCC senior management on relevant matters
- Overseeing the development and on-going maintenance of a comprehensive Reliability Compliance Program to comply with mandatory electric reliability standards
- Providing guidance for continual improvement of the Reliability Compliance Program, including:
 - Development and implementation of consistent processes across all business units and support groups
 - Promoting a reliability and compliance culture that focuses on transparency and accountability
 - Enhancing the overall sustainability of the program
- Serving as an escalation point on matters not addressable at the NERC Compliance Steering Committee (NCSC)

In June of 2010, the RCC approved the formation of the NCSC as a cross-functional steering committee of leaders directly involved in NERC reliability, standards, and compliance matters.

The vision of the NCSC includes:

- Commitment to outstanding system reliability, achieved in part by full compliance with NERC reliability standards across AEP, achieved in a manner that is transparent, consistent, sustainable, objective, and efficient
- Sustained culture of reliability compliance that ensures that everyone knows what is expected and holds each other accountable
- Reliability policies and procedures tightly integrated into the way AEP personnel get their work done on a daily basis with auditable evidence generated as a by-product

The Office of the CEO includes the AEP CEO and his staff, audit services, legal, federal/external affairs, and corporate communication services. Within this office, legal service supports the business units in achieving full compliance of NERC and Texas RE reliability standards. Legal provides coordinated, centralized services system-wide that are essential to ensuring that AEP is compliant with all applicable federal and state laws, rules, and regulatory requirements. Audit services reports directly to the Chairman/CEO of AEP with a direct reporting responsibility to the Chairman of the Audit Committee of the Board of Directors. Audit services support the business units in achieving compliance to NERC and Texas RE reliability standards.

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 factor in employee evaluations, or otherwise.

(2) Registered Entity’s compliance history

Any previously filed violations of the same or similar Reliability Standard(s) or Requirement(s)

Yes No

If yes, list violations and status

A Settlement Agreement covering a violation of EOP-003-1 R8 (TRE2012010887) for AEP was filed with FERC under NP13-37-000 on May 30, 2013. On June 28, 2013, FERC issued an order stating it would not engage in further review of the Notice of Penalty on its own motion.

The previous instance pertained to AEP’s failure to timely implement and sufficiently maintain its load shedding obligation as directed by ERCOT during the February 2, 2011 emergency event. Specifically, AEP did not shed adequate firm load a total of 82 minutes or 17% of the time. AEP shed the expected 373.2 MW, but not within the required 30 minutes. After the 2011 event, AEP installed automated Load Shed software which significantly reduced the reaction time from the issuance of a directive to the actual shedding of load. AEP and Texas RE entered into a

Settlement Agreement regarding these events, and AEP agreed to pay \$200,000 in addition to other remedies and actions to mitigate the violation.

However, unlike the 2011 event, on October 8, 2014, AEP shed load within 4 minutes after receipt of the load shed directive, significantly reducing the risk to the BPS that was created by the near simultaneous trip of three generation units in the Lower Rio Grande Valley.² In this instance, AEP shed approximately 678 MW of load instead of the requested amount of 134 MW on October 8, 2014. Texas RE therefore determined that AEP's previous violation of EOP-003-1 R8 (TRE2012010887) is an aggravating factor in the current penalty determination because in both instances, AEP failed to properly implement an ERCOT load shed directive.

Any previously filed violations of the same or similar Reliability Standard(s) or Requirement(s) for affiliate entities?

Yes No

If yes, list violations and status

A Settlement Agreement covering violations of EOP-003-1 R1 (RFC2012010146) and EOP-003-1 R8 (RFC2012010147) for AEP in the RFC region was filed with FERC under NP13-35-000 on May 30, 2013. On June 28, 2013, FERC issued an order stating it would not engage in further review of the Notice of Penalty on its own motion.

Texas RE determined that these violations are distinguishable from the current instance. In the previous instance, the Kenzie Creek-Valley 138 kV line exceeded its Emergency and Load Dump Ratings. AEP's emergency operations plan called for immediate actions to address actual thermal overloads. AEP took steps to reconfigure its transmission system to address thermal overloads by opening circuit breakers. These actions were not sufficient, however, to mitigate the operating emergency in question. AEP and RFC entered into a Settlement Agreement regarding these events, and AEP agreed to pay \$225,000 in addition to other remedies and actions to mitigate the violation. In the current instance, in contrast, AEP shed load, which mitigated the emergency event but failed to properly comply with ERCOT's load shed directive by shedding 678 MW of load instead of 134 MW.

Does the registered entity's compliance history indicate that there are broader compliance culture problems?

Yes No

If yes, state whether such problems were considered aggravating factors in the penalty determination.

Regional Entity Conclusion Regarding Compliance History:

Texas RE determined that AEP's previous violation of EOP-003-1 R8 (TRE2012010887) is an aggravating factor in the current penalty determination.

² On March 25, 2016, the Public Utility Commission of Texas (Commission) approved a settlement agreement between the Commission Staff and AEP regarding the same incident.

(3) The degree and quality of cooperation by the Registered Entity.

Full cooperation Yes No

If no, explain:

(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?

Yes No

If yes, explain:

(6) Any other aggravating factors for consideration?

Yes No

If yes, explain:

(7) Any other extenuating circumstances?

Yes No

If yes, explain:

(8) Regional Entity Conclusion Regarding Factors Affecting the Penalty Determination:

Texas RE reviewed AEP's internal compliance program (ICP) and considered it to be a mitigating factor. AEP's compliance officer has independent access to the chief executive officer, executive committee, and board of directors. In addition, AEP's Reliability Compliance Committee is responsible for ensuring implementation and oversight of AEP's ICP. The NERC Compliance Steering Committee works to, inter alia, establish clear, visible, simple, and efficient processes; secure adequate resources for compliance; and assign clear accountability for achieving results associated with compliance activities. AEP's ICP provides an annual schedule of standards to review and internal assessments of compliance by each affected business unit and by independent staff, such as internal audits and regulatory services. AEP also utilizes a compliance management software program and has clearly defined procedures dictating the steps to take when compliance issues arise and mitigating activities are necessary.

Other Relevant Information

(1) Notice of Alleged Violation

Date

Or N/A

(2) Settlement Requested by Registered Entity

Date 5/24/2016

Or N/A

(3) Notice of Confirmed Violation issued

Date

Or N/A

(4) Supplemental Record information

Date(s)

Or N/A

(5) Registered Entity response contested

Findings

Penalty

Both

Did not contest

(6) Hearing Requested

Yes No

Date

Outcome

Appeal Requested

III-a. VIOLATION INFORMATION

NERC Violation ID NO.

TRE2015015386

RELIABILITY STANDARD	REQUIREMENT	SUB-REQUIREMENT	VRF	VSL
EOP-003-2	R5		High	Severe

Method of Discovery

Compliance Audit

Violation applies to the following functions:

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

Purpose of EOP-003-2: A Balancing Authority and Transmission Operator operating with insufficient generation or transmission capacity must have the capability and authority to shed load rather than risk an uncontrolled failure of the Interconnection.

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

Reliability Standard EOP-003-2 R5: A Transmission Operator or Balancing Authority shall implement load shedding, excluding automatic under-frequency load shedding, in steps established to minimize the risk of further uncontrolled separation, loss of generation, or system shutdown.

VIOLATION DESCRIPTION

During a Compliance Audit conducted from October 26, 2015 through December 1, 2015, Texas RE determined that AEP, as a Transmission Operator (TOP), was in violation of EOP-003-2 R5. Specifically, AEP failed to implement load shedding in steps established to minimize the risk of further uncontrolled separation, loss of generation, or system shutdown.

At 15:51 on October 8, 2014, three generation units in the Lower Rio Grande Valley (Valley) area tripped offline. These unit trips, combined with existing planned generation outages and elevated load due to high temperatures in the Valley, resulted in certain transmission facilities exceeding their System Operating Limits (SOL). In response to these events, the Electric Reliability Council of Texas, Inc. (ERCOT), acting as the Balancing Authority (BA) and Reliability Coordinator (RC) for the ERCOT region, declared a Transmission emergency at 16:08. At 16:49, ERCOT implemented the Valley Import Constraint Management Plan (Plan) to address internal Valley transmission issues. Pursuant to the Plan, ERCOT directed AEP to shed its portion of 200 MW, or 134 MW, of load.

Within four minutes following the receipt of ERCOT's load-shed directive, AEP personnel entered the appropriate amount of load to be shed into AEP's automated load shedding program. However, the AEP personnel in question then inadvertently selected the "Zone Cycle Load Shed Button" (i.e., shed all load for the manual load shed plan for the zone) instead of the "MW Amount Load Shed Control Button" (i.e., shed load in zone up to value entered) from the load shed program's main operating screen. Based on this instruction, the AEP load shed program, as designed, shed a complete cycle of load in the Valley zone. As a result, AEP shed 678 MW of load. Recognizing the unintended action, AEP restored approximately 440 MW of the excess load shed within 10 minutes of the initial load-shed event.

DURATION DATE

10/8/2014 at 16:53 (when AEP failed to properly implement the ERCOT load shed directive)

Region Notified of/Found Violation On:

12/01/2015 (date discovered at Audit)

Is the violation still occurring:

Yes No

If yes, explain:**Remedial Action Directive issued**

Yes No

Reliability Impact Statement – Potential and Actual

This violation posed a moderate risk and did not pose a serious or substantial risk to the reliability of the bulk power system (BPS). The direct impact on the BPS due to this violation was an unintended loss of approximately 544 MW of load. AEP's unintended shedding of approximately 544 MW of load represented 27% of the Lower Rio Grande Valley's Total 2,020 MW of load, and 1% of the ERCOT region's 54,346 MW of load.

The risk posed by this violation was mitigated by the fact that AEP shed excess load in response to the ERCOT load shed directive rather than failing to shed sufficient load or exacerbating the need for load-shed. Specifically, following AEP's actions, system conditions improved such that the thermal exceedances triggering the event were mitigated, significantly reducing the risk of cascading outages. In addition, the resulting voltages after the load shed were within emergency voltage limits and just above the normal voltage range. Similarly, while frequency did reach 60.13 Hz, it was well within the ERCOT operating experience. In addition, the system operated as designed and frequency recovered in 8 seconds. Moreover, if additional contingencies had occurred during this period, additional load-shed may have been possible, including activation of one or more stages of the Valley Undervoltage Load Shedding system. Finally, there are no SOLs in the Valley that, if violated, could lead to instability, uncontrolled separation, or cascading outages beyond the Valley region itself. In particular, the Valley does not contain Interconnection Reliability Operating Limits that, if exceeded, could result in cascading outages or voltage collapses either through manual action or as a consequence of the event (including UVLS).

IV-a. MITIGATION INFORMATION

Regional Entity required a formal Mitigation Plan

Yes No

NERC Mitigation Plan No. TREMIT012461

Date submitted to Regional Entity 12/5/2016

Date accepted by Regional Entity 12/6/2016

Date approved by NERC

Date provided to FERC

If applicable, identify and explain all prior versions that were accepted or rejected:

N/A

Mitigation Plan Completed?

Yes No

If no, proposed approved completion date:

Extensions requested?

Yes No

If yes, explain.

Date Regional Entity submitted Completion Certification 12/5/2016

Date Registered Entity certified it completed the Mitigation Plan 11/30/2016

Date Regional Entity verified completion of the Mitigation Plan

Actual Completion Date as determined by the Regional Entity

Description of Mitigating Activity

To mitigate this violation, AEP:

- 1) restored approximately 678 MW of load;
- 2) removed the "Zone Cycle Load Shed Button" from the AEP manual load shed program;
- 3) increased the "time-out" interval on its load shed program;
- 4) revised its Transmission Load Shed Procedure to require the Transmission dispatcher to implement ERCOT load shedding directives in amounts no larger than 200 MW in a single instruction within a single distribution district;
- 5) revised its Transmission Load Shed Procedure to require verbal verification that the load shed values entered by the AEP Distribution Dispatcher are correct prior to executing the load shed command;

- 6) revised its Distribution Dispatch Center Automated Manual Load Shed Procedure to include verbal verification with the Transmission dispatcher as well as steps addressing a directive to restore load;
- 7) developed a training video demonstrating the Automated Load Shedding process;
- 8) provided training on the video to the Distribution dispatchers; and
- 9) added additional steps to AEP's Distribution Dispatch Center Automated Manual Load Shed Procedure describing the process for arming the Automated Load Shedding Program and for executing the load shed command.

List of evidence reviewed by Regional Entity to evaluate completion of Mitigation Activity

Corrective Action # 1:

- TRE Valley Question AEP Responses - 10-31.pdf
- Texas RE Restoration Calculation.xls

Corrective Action # 2:

- Exhibit 3 -Load Shed 10_21_2014_.mp4
- LoadShedOverview04242014.pdf

Corrective Action # 3:

- 2014-10-08 Manual Load Shed - RFI for AEP - RESPONSE.pdf
- Texas RE Enforcement First Request for Information to AEP - AEP Response.pdf (Exhibit 5 Documentation for 60 second change)

Corrective Action # 4:

- EV 3 - Firm Load Shedding Procedure - revised.pdf

Corrective Action # 5:

- EV 4a - Mitigation Milestone_4.pdf

Corrective Action # 6:

- EV 5 - AEP Texas DDC AMLS Procedure June 20, 2016 Revision.pdf

Corrective Action # 7:

- Exhibit 3 -Load Shed 10_21_2014_.mp4

Corrective Action # 8:

- Exhibit 4 -- Distribution Dispatcher Video Training Signatures.pdf

Corrective Action # 9:

- Exhibit -- EV 9 - AEP Texas DDC AMLS Procedure Version 3.pdf

EXHIBITS

TRE2015015386_Audit Finding_AEP.pdf

TRE2015015386_TRE2015015387_Notice of Possible Violations_AEP.pdf

III-b. VIOLATION INFORMATION

NERC Violation ID NO.

TRE2015015387

RELIABILITY STANDARD	REQUIREMENT	SUB-REQUIREMENT	VRF	VSL
TOP-001-1a	R3		High	Severe

Method of Discovery

Compliance Audit

Violation applies to the following functions:

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

Purpose of TOP-001-1a R3: To ensure reliability entities have clear decision-making authority and capabilities to take appropriate actions or direct the actions of others to return the transmission system to normal conditions during an emergency.

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

Reliability Standard TOP-001-1a R3: Each Transmission Operator, Balancing Authority, and Generator Operator shall comply with reliability directives issued by the Reliability Coordinator, and each Balancing Authority and Generator Operator shall comply with reliability directives issued by the Transmission Operator, unless such actions would violate safety, equipment, regulatory or statutory requirements. Under these circumstances the Transmission Operator, Balancing Authority or Generator Operator shall immediately inform the Reliability Coordinator or Transmission Operator of the inability to perform the directive so that the Reliability Coordinator or Transmission Operator can implement alternate remedial actions.

VIOLATION DESCRIPTION

During a Compliance Audit conducted from October 26, 2015 through December 1, 2015, Texas RE determined that AEP, as a Transmission Operator (TOP), was in violation of EOP-003-2 R5. Specifically, AEP failed to comply with reliability directives issued by the Reliability Coordinator unless such actions would violate safety, equipment, regulatory or statutory requirements.

At 15:51 on October 8, 2014, three generation units in the Lower Rio Grande Valley (Valley) area tripped offline. These unit trips, combined with existing planned generation outages and elevated load due to high temperatures in the Valley, resulted in certain transmission facilities exceeding their System Operating Limits (SOL). In response to these events, the Electric Reliability Council of Texas, Inc. (ERCOT), acting as the Balancing Authority (BA) and Reliability Coordinator (RC) for the ERCOT region, declared a Transmission emergency at 16:08. At 16:49, ERCOT implemented the Valley Import Constraint Management Plan (Plan) to address internal Valley

transmission issues. Pursuant to the Plan, ERCOT directed AEP to shed its portion of 200 MW, or 134 MW, of load.

Within four minutes following the receipt of ERCOT's load-shed directive, AEP personnel entered the appropriate amount of load to be shed into AEP's automated load shedding program. However, the AEP personnel in question then inadvertently selected the "Zone Cycle Load Shed Button" (i.e., shed all load for the manual load shed plan for the zone) instead of the "MW Amount Load Shed Control Button" (i.e., shed load in zone up to value entered) from the load shed program's main operating screen. Based on this instruction, the AEP load shed program, as designed, shed a complete cycle of load in the Valley zone. As a result, AEP shed 678 MW of load. Recognizing the unintended action, AEP restored approximately 440 MW of the excess load shed within 10 minutes of the initial load-shed event.

DURATION DATE

10/8/2014 at 16:53 (when AEP failed to properly implement the ERCOT load shedding directive)

Region Notified of/Found Violation On:

12/01/2015 (the date discovered at Audit)

Is the violation still occurring:

Yes No

If yes, explain:**Remedial Action Directive issued**

Yes No

Reliability Impact Statement – Potential and Actual

This violation posed a moderate risk and did not pose a serious or substantial risk to the reliability of the bulk power system (BPS). The direct impact on the BPS due to this violation was an unintended loss of approximately 544 MW of load. AEP's unintended shedding of approximately 544 MW of load represented 27% of the Lower Rio Grande Valley's Total 2,020 MW of load, and 1% of the ERCOT region's 54,346 MW of load.

The risk posed by this violation was mitigated by the fact that AEP shed excess load in response to the ERCOT load shed directive rather than failing to shed sufficient load or exacerbating the need for load-shed. Specifically, following AEP's actions, system conditions improved such that the thermal exceedances triggering the event were mitigated, reducing the risk of cascading outages. In addition, the resulting voltages after the load shed were within emergency voltage limits and just above the normal voltage range. Similarly, while frequency did reach 60.13 Hz, it was well within the ERCOT operating experience. In addition, the system operated as designed and frequency recovered in 8 seconds. Moreover, if additional contingencies had occurred during this period, additional load-shed may have been possible, including activation of one or more stages of the Valley Undervoltage Load Shedding system. Finally, there are no SOLs in the Valley that, if violated, could lead to instability, uncontrolled separation, or cascading outages beyond the Valley region itself. In particular, the Valley does not contain Interconnection Reliability

Operating Limits that, if exceeded, could result in cascading outages or voltage collapses either through manual action or as a consequence of the event (including UVLS).

IV-b. MITIGATION INFORMATION

Regional Entity required a formal Mitigation Plan

Yes No

NERC Mitigation Plan No. TREMIT012460

Date submitted to Regional Entity 12/5/2016

Date accepted by Regional Entity 12/6/2016

Date approved by NERC

Date provided to FERC

If applicable, identify and explain all prior versions that were accepted or rejected:

N/A

Mitigation Plan Completed?

Yes No

If no, proposed approved completion date:

Extensions requested?

Yes No

If yes, explain.

Date Regional Entity submitted Completion Certification 12/5/2016

Date Registered Entity certified it completed the Mitigation Plan 11/30/2016

Date Regional Entity verified completion of the Mitigation Plan

Actual Completion Date as determined by the Regional Entity

Description of Mitigating Activity

To mitigate this violation, AEP:

- 1) restored approximately 678 MW of load;
- 2) removed the "Zone Cycle Load Shed Button" from the AEP manual load shed program;
- 3) increased the "time-out" interval on its load shed program;
- 4) revised its Transmission Load Shed Procedure to require the Transmission dispatcher to implement ERCOT load shedding directives in amounts no larger than 200 MW in a single instruction within a single distribution district;

- 5) revised its Transmission Load Shed Procedure to require verbal verification that the load shed values entered by the AEP Distribution Dispatcher are correct prior to executing the load shed command;
- 6) revised its Distribution Dispatch Center Automated Manual Load Shed Procedure to include verbal verification with the Transmission dispatcher as well as steps addressing a directive to restore load;
- 7) developed a training video demonstrating the Automated Load Shedding process;
- 8) provided training on the video to the Distribution dispatchers; and
- 9) added additional steps to AEP's Distribution Dispatch Center Automated Manual Load Shed Procedure describing the process for arming the Automated Load Shedding Program and for executing the load shed command.

List of evidence reviewed by Regional Entity to evaluate completion of Mitigation Activity

Corrective Action # 1:

- TRE Valley Question AEP Responses - 10-31.pdf
- Texas RE Restoration Calculation.xls

Corrective Action # 2:

- Exhibit 3 -Load Shed 10_21_2014_.mp4
- LoadShedOverview04242014.pdf

Corrective Action # 3:

- 2014-10-08 Manual Load Shed - RFI for AEP - RESPONSE.pdf
- Texas RE Enforcement First Request for Information to AEP - AEP Response.pdf (Exhibit 5 Documentation for 60 second change)

Corrective Action # 4:

- EV 3 - Firm Load Shedding Procedure - revised.pdf

Corrective Action # 5:

- EV 4a - Mitigation Milestone_4.pdf

Corrective Action # 6:

- EV 5 - AEP Texas DDC AMLS Procedure June 20, 2016 Revision.pdf

Corrective Action # 7:

- Exhibit 3 -Load Shed 10_21_2014_.mp4

Corrective Action # 8:

- Exhibit 4 -- Distribution Dispatcher Video Training Signatures.pdf

Corrective Action # 9:

- EV 9 - AEP Texas DDC AMLS Procedure Version 3.pdf

EXHIBITS

TRE2015015387_Audit Finding_AEP.pdf

TRE2015015386_TRE2015015387_Notice of Possible Violations_AEP.pdf

Addendum B

SERVICE LIST - American Electric Power Service Corp (NCR04006)
TRE201505386 and TRE201505387

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Violation - Discovery Record

Registered Entity: American Electric Power Service Corp as agent for AEP Texas North Co, AEP Texas Central Co, and Public Service of Oklahoma

NERC Registry ID: NCR04006

NERC Violation ID: TRE2015015386

Discovery Method: Audit

Date Submitted: December 02, 2015

Region Contact:

Phone: 512-583-4965 Email: keith.smith@texasre.org

Standard: EOP-003-2 - Load Shedding Plans

Purpose: A Balancing Authority and Transmission Operator operating with insufficient generation or transmission capacity must have the capability and authority to shed load rather than risk an uncontrolled failure of the Interconnection.

Requirement: EOP-003-2 R5.

A Transmission Operator or Balancing Authority shall implement load shedding, excluding automatic under-frequency load shedding, in steps established to minimize the risk of further uncontrolled separation, loss of generation, or system shutdown.

Violated Sub-Req(s):

Violated Function(s): Transmission Operator (TOP)

Init Determ a Vltn: December 01, 2015

Begin Date of Vltn: October 08, 2014

End Date:

Notified of Vltn on: December 01, 2015

Potential Impact to BES: This violation did not pose a serious or substantial risk to the bulk power system but had a moderate impact because more than 150,000 customers unnecessarily lost power for approximately 10 minutes, voltages in the immediate area momentarily spiked above normal operating ranges, and system frequency momentarily peaked at 60.13 Hz.

Brief Vltn Descr. & Cause: On October 8, 2014, ERCOT directed AEP to shed 134 MW of Load. An AEP distribution dispatcher pressed the wrong Load shed button, causing AEP to shed an incorrect amount of Load.

Alleged Violation null
Contravention:

Registered Entity null
Report/Response:

Risk Factor: High

Severity Level: VSL - Severe

Factual Basis: There is only one level include in the VSL for EOP-003-2 R5.

The Transmission Operator or Balancing Authority failed to implement load shedding in steps established to minimize the risk of further uncontrolled separation, loss of generation, or system shutdown.



Violation - Discovery Record

Registered Entity: American Electric Power Service Corp as agent for AEP Texas North Co, AEP Texas Central Co, and Public Service of Oklahoma

NERC Registry ID: NCR04006

NERC Violation ID: TRE2015015387

Discovery Method: Audit

Date Submitted: December 02, 2015

Region Contact:

Phone: 512-583-4965 Email: keith.smith@texasre.org

Standard: TOP-001-1a - Reliability Responsibilities and Authorities

Purpose: To ensure reliability entities have clear decision-making authority and capabilities to take appropriate actions or direct the actions of others to return the transmission system to normal conditions during an emergency.

Requirement: TOP-001-1a R3.

Each Transmission Operator, Balancing Authority, and Generator Operator shall comply with reliability directives issued by the Reliability Coordinator, and each Balancing Authority and Generator Operator shall comply with reliability directives issued by the Transmission Operator, unless such actions would violate safety, equipment, regulatory or statutory requirements. Under these circumstances the Transmission Operator, Balancing Authority, or Generator Operator shall immediately inform the Reliability Coordinator or Transmission Operator of the inability to perform the directive so that the Reliability Coordinator or Transmission Operator can implement alternate remedial actions.

Violated Sub-Req(s):

Violated Function(s): Transmission Operator (TOP)

Init Determ a Vln: December 01, 2015

Begin Date of Vln: October 08, 2014

End Date: October 08, 2014

Notified of Vln on: December 01, 2015

Potential Impact to BES: This violation did not pose a serious or substantial risk to the bulk power system but had a moderate impact because more than 150,000 customers unnecessarily lost power for approximately 10 minutes, voltages in the immediate area momentarily spiked above normal operating ranges, and system frequency momentarily peaked at 60.13 Hz.

Brief Vln Descr. & Cause: On October 8, 2014, ERCOT directed AEP to shed 134 MW of Load. AEP responded to the directive, but shed an incorrect amount of Load.

Alleged Violation null
Contravention:

Registered Entity null
Report/Response:

Risk Factor: High

Severity Level: VSL - Severe

Factual Basis: The NERC VSL Matrix only includes one level for non-compliance with TOP-001-1a R3, which is severe.

The responsible entity failed to comply with reliability directives issued by the Reliability Coordinator or the Transmission Operator (when applicable), when said directives would not have resulted in actions that would violate safety, equipment, regulatory or statutory requirements, or under circumstances that said directives would have resulted in actions that would violate safety, equipment, regulatory or statutory requirements the responsible entity failed to inform the Reliability Coordinator or Transmission Operator (when applicable) of the inability to perform the directive so that the Reliability Coordinator or Transmission Operator could implement alternate remedial actions.

Notice of Possible Violations

Date: December 10, 2015

To: American Electric Power Service Corp as agent for AEP Texas North, AEP Texas Central Co, and Public Service of Oklahoma

Attention: Zach McCullough

email: zwmccullough@aep.com

NERC Compliance Registry ID: NCR04006

Re: **Possible Violations of Requirements of Reliability Standards Approved by the Applicable Governmental Authority**

Violation IDs: TRE2015015386 and TRE2015015387

Reliability Standards Possibly Violated: EOP-003-2 R5 and TOP-001-1a R3

Possible Function Violated: Transmission Operator (TOP)

Discovery Method: Audit

Audit Dates: October 26, 2015 through December 1, 2015

Evidence of Possible Violations:

American Electric Power Service Corp as agent for AEP Texas North Co, AEP Texas Central Co, and Public Service of Oklahoma (AEP) is hereby notified that Texas Reliability Entity, Inc. (Texas RE) alleges that AEP possibly did not comply or possibly was not in compliance with the requirements of the NERC Reliability Standards listed above. Specifically, Texas RE has determined, based on Texas RE's audit findings dated December 1, 2015, that there is sufficient basis for finding that AEP may possibly not be or may not have been in compliance with the indicated Reliability Standard Requirements. Additional detail regarding the basis for Texas RE's findings is provided in Attachment A below.

This letter serves as official notice to preserve all documentation pertaining to the Possible Violations. Documentation includes, but is not limited to, — operator logs, recorded voice communications, e-mail and written correspondence, work orders, inspection records, patrol records, budget information, and any and all other documents that may be directly or indirectly related to the Possible Violations.

AEP may submit a response to the Possible Violations should they believe Texas RE has reached this conclusion in error. Texas RE will notify you of its conclusion after reviewing any response from AEP and upon final review of the Possible Violations. Texas RE may conclude that there is insufficient basis to pursue the matters further or may conclude sufficient basis does exist to

pursue the matter further with a Notice of Alleged Violations (NAV) that sets forth Texas RE's conclusions and your response options.

Texas RE appreciates your cooperation in advance and looks forward to resolving this matter in the interests of promoting the reliability of the Bulk-Power System. If you have not already done so, Texas RE encourages you to review the circumstances of the subject issues and submit Mitigation Plans within 30 days. Mitigation Plan submittal should be made via the webCDMS portal at the following address: <https://www.cdms.oati.com/CDMS/sys-login.wml>. Please note that Mitigation Plan submittal does not constitute an admission a violation has occurred nor does it waive your right to contest a NAV, if and when it is delivered.

Settlement negotiations may occur at any time after this notice and until such time a Notice of Penalty is filed with the Federal Energy Regulatory Commission (Commission) or Applicable Governmental Authority by NERC. Should you desire to discuss settlement negotiations, please use the webCDMS portal to make your request.

As required by the NERC Rules of Procedure and NERC Compliance Monitoring and Enforcement Program, the information in this notice will be provided on a non-public basis to the Commission or Applicable Governmental Authority. The information regarding the Possible Violations will not be made public unless and until a violation is confirmed.

If you have any questions, please feel free to contact Roger Paschall at 512-583-4937 or via e-mail at roger.paschall@texasre.org.

Respectfully submitted,

Derrick Davis
Texas Reliability Entity, Inc.
Director of Enforcement, Reliability Standards & Registration
(512) 583-4923
Email: derrick.davis@texasre.org

Attachment A

Registered Entity Acronym	Reliability Standard	Requirement	Method or Source of Possible Violation	Date or Period of Possible Violation
AEP	EOP-003-2	R5	Audit	10/8/2014
AEP	TOP-001-1a	R3	Audit	10/8/2014

Standard EOP-003-2 R5

Load Shedding Plans

R5. A Transmission Operator or Balancing Authority shall implement load shedding, excluding automatic under-frequency load shedding, in steps established to minimize the risk of further uncontrolled separation, loss of generation, or system shutdown.

Audit Finding:

On October 8, 2014, ERCOT directed AEP to shed 134 MW of Load. An AEP distribution dispatcher pressed the wrong Load shed button, causing AEP to shed an incorrect amount of Load.

Standard TOP-001-1a R3

Reliability Responsibilities and Authorities

R3. Each Transmission Operator, Balancing Authority, and Generator Operator shall comply with reliability directives issued by the Reliability Coordinator, and each Balancing Authority and Generator Operator shall comply with reliability directives issued by the Transmission Operator, unless such actions would violate safety, equipment, regulatory or statutory requirements. Under these circumstances the Transmission Operator, Balancing Authority or Generator Operator shall immediately inform the Reliability Coordinator or Transmission Operator of the inability to perform the directive so that the Reliability Coordinator or Transmission Operator can implement alternate remedial actions.

Audit Finding:

On October 8, 2014, ERCOT directed AEP to shed 134 MW of Load. AEP responded to the directive but shed an incorrect amount of Load.

Attachment B

Record documents for the violation of EOP-003-2 R5 (TRE2015015386)

B-1. Texas RE's Audit Finding for EOP-003-2 R5 dated December 7, 2015

B-2. AEP's Mitigation Plan designated as TREMIT012461 for EOP-003-2 R5 submitted December 5, 2016

B-3. AEP's Certification of Mitigation Plan Completion for EOP-003-2 R5 dated January 5, 2017

Violation - Discovery Record

Registered Entity: American Electric Power Service Corp as agent for AEP Texas North Co, AEP Texas Central Co, and Public Service of Oklahoma

NERC Registry ID: NCR04006

NERC Violation ID: TRE2015015386

Discovery Method: Audit

Date Submitted: December 02, 2015

Region Contact:

Phone: 512-583-4965 Email: keith.smith@texasre.org

Standard: EOP-003-2 - Load Shedding Plans

Purpose: A Balancing Authority and Transmission Operator operating with insufficient generation or transmission capacity must have the capability and authority to shed load rather than risk an uncontrolled failure of the Interconnection.

Requirement: EOP-003-2 R5.

A Transmission Operator or Balancing Authority shall implement load shedding, excluding automatic under-frequency load shedding, in steps established to minimize the risk of further uncontrolled separation, loss of generation, or system shutdown.

Violated Sub-Req(s):

Violated Function(s): Transmission Operator (TOP)

Init Determ a Vltn: December 01, 2015

Begin Date of Vltn: October 08, 2014

End Date:

Notified of Vltn on: December 01, 2015

Potential Impact to BES: This violation did not pose a serious or substantial risk to the bulk power system but had a moderate impact because more than 150,000 customers unnecessarily lost power for approximately 10 minutes, voltages in the immediate area momentarily spiked above normal operating ranges, and system frequency momentarily peaked at 60.13 Hz.

Brief Vltn Descr. & Cause: On October 8, 2014, ERCOT directed AEP to shed 134 MW of Load. An AEP distribution dispatcher pressed the wrong Load shed button, causing AEP to shed an incorrect amount of Load.

Alleged Violation null
Contravention:

Registered Entity null
Report/Response:

Risk Factor: High

Severity Level: VSL - Severe

Factual Basis: There is only one level include in the VSL for EOP-003-2 R5.

The Transmission Operator or Balancing Authority failed to implement load shedding in steps established to minimize the risk of further uncontrolled separation, loss of generation, or system shutdown.



Mitigation Plan

Mitigation Plan Summary

Registered Entity: American Electric Power Service Corp as agent for AEP Texas North Co, AEP Texas Central Co, and Public Service of Oklahoma

Mitigation Plan Code: TREMIT012461

Mitigation Plan Version: 1

NERC Violation ID	Requirement	Violation Validated On
TRE2015015386	EOP-003-2 R5.	03/09/2016

Mitigation Plan Submitted On: December 05, 2016

Mitigation Plan Accepted On: December 06, 2016

Mitigation Plan Proposed Completion Date: November 30, 2016

Actual Completion Date of Mitigation Plan:

Mitigation Plan Certified Complete by AEPSC On: December 05, 2016

Mitigation Plan Completion Verified by TRE On:

Mitigation Plan Completed? (Yes/No): No

Compliance Notices

Section 6.2 of the NERC CMEP sets forth the information that must be included in a Mitigation Plan. The Mitigation Plan must include:

- (1) The Registered Entity's point of contact for the Mitigation Plan, who shall be a person (i) responsible for filing the Mitigation Plan, (ii) technically knowledgeable regarding the Mitigation Plan, and (iii) authorized and competent to respond to questions regarding the status of the Mitigation Plan. This person may be the Registered Entity's point of contact described in Section B.
 - (2) The Alleged or Confirmed Violation(s) of Reliability Standard(s) the Mitigation Plan will correct.
 - (3) The cause of the Alleged or Confirmed Violation(s).
 - (4) The Registered Entity's action plan to correct the Alleged or Confirmed Violation(s).
 - (5) The Registered Entity's action plan to prevent recurrence of the Alleged or Confirmed violation(s).
 - (6) The anticipated impact of the Mitigation Plan on the bulk power system reliability and an action plan to mitigate any increased risk to the reliability of the bulk power-system while the Mitigation Plan is being implemented.
 - (7) A timetable for completion of the Mitigation Plan including the completion date by which the Mitigation Plan will be fully implemented and the Alleged or Confirmed Violation(s) corrected.
 - (8) Implementation milestones no more than three (3) months apart for Mitigation Plans with expected completion dates more than three (3) months from the date of submission. Additional violations could be determined or recommended to the applicable governmental authorities for not completing work associated with accepted milestones.
 - (9) Any other information deemed necessary or appropriate.
 - (10) The Mitigation Plan shall be signed by an officer, employee, attorney or other authorized representative of the Registered Entity, which if applicable, shall be the person that signed the Self Certification or Self Reporting submittals.
 - (11) This submittal form may be used to provide a required Mitigation Plan for review and approval by regional entity(ies) and NERC.
- The Mitigation Plan shall be submitted to the regional entity(ies) and NERC as confidential information in accordance with Section 1500 of the NERC Rules of Procedure.
 - This Mitigation Plan form may be used to address one or more related alleged or confirmed violations of one Reliability Standard. A separate mitigation plan is required to address alleged or confirmed violations with respect to each additional Reliability Standard, as applicable.
 - If the Mitigation Plan is accepted by regional entity(ies) and approved by NERC, a copy of this Mitigation Plan will be provided to the Federal Energy Regulatory Commission or filed with the applicable governmental authorities for approval in Canada.
 - Regional Entity(ies) or NERC may reject Mitigation Plans that they determine to be incomplete or inadequate.
 - Remedial action directives also may be issued as necessary to ensure reliability of the bulk power system.
 - The user has read and accepts the conditions set forth in these Compliance Notices.

Entity Information

Identify your organization:

Entity Name: American Electric Power Service Corp as agent for AEP Texas North Co, AEP Texas Central Co, and Public Service of Oklahoma

NERC Compliance Registry ID: NCR04006

Address: 1 Riverside Plaza
Columbus OH 43215

Identify the individual in your organization who will serve as the Contact to the Regional Entity regarding this Mitigation Plan. This person shall be technically knowledgeable regarding this Mitigation Plan and authorized to respond to Regional Entity regarding this Mitigation Plan:

Name: Zach McCullough

Title: Regulatory Consultant

Email: zwmccullough@aep.com

Phone: 614-716-2089

Violation(s)

This Mitigation Plan is associated with the following violation(s) of the reliability standard listed below:

Violation ID	Date of Violation	Requirement
Requirement Description		
TRE2015015386	10/08/2014	EOP-003-2 R5.
A Transmission Operator or Balancing Authority shall implement load shedding, excluding automatic under-frequency load shedding, in steps established to minimize the risk of further uncontrolled separation, loss of generation, or system shutdown.		

Brief summary including the cause of the violation(s) and mechanism in which it was identified:

The following incident was identified as a potential non-compliance violation during the TRE/AEP 10/2015 NERC compliance audit:

At 15:51 on October 8, 2014, three generation units in the Lower Rio Grande Valley (Valley) area tripped offline. These unit trips, combined with existing planned generation outages and elevated load due to high temperatures in the Valley, resulted in certain transmission facilities exceeding their System Operating Limits (SOL). In response to these events, the Electric Reliability Council of Texas, Inc. (ERCOT), acting as the Balancing Authority (BA) and Reliability Coordinator (RC) for the ERCOT region, declared a Transmission emergency at 16:08. At 16:49, ERCOT implemented the Valley Import Constraint Management Plan (Plan) to address internal Valley transmission issues. Pursuant to the Plan, ERCOT directed AEP to shed its portion of 200 MW, or 134 MW, of load.

Within four minutes following the receipt of ERCOT's load-shed directive, AEP personnel entered the appropriate amount of load to be shed into AEP's automated load shedding program. However, the AEP personnel in question then inadvertently selected the "Zone Cycle Load Shed Button" (i.e., shed all load for the manual load shed plan for the zone) instead of the "MW Amount Load Shed Control Button" (i.e., shed load in zone up to value entered) from the load shed program's main operating screen. Based on this instruction, the AEP load shed program, as designed, shed a complete cycle of load in the Valley zone. As a result, AEP shed 678 MW of load. Recognizing the unintended action, AEP restored approximately 440 MW of the excess load shed within 10 minutes of the initial load-shed event.

Relevant information regarding the identification of the violation(s):

EOP-003-2 R5:

On October 8, 2014, ERCOT directed AEP to shed 134 MW of load. AEP did not implement load shedding in steps established to minimize the risk of further uncontrolled separation, loss of generation, or system shutdown.

TOP-001-1a R3:

On October 8, 2014, ERCOT directed AEP to shed 134 MW of load. AEP responded to the directive, but did not comply to the directive and shed an excessive amount of load.

Plan Details

Identify and describe the action plan, including specific tasks and actions that your organization is proposing to undertake, or which it undertook if this Mitigation Plan has been completed, to correct the violation(s) identified above in Section C.1 of this form:

Mitigation Plan includes 9 milestones:

- 1) Restored approximately 678 MW of load during the event.
- 2) Removed the "Zone Cycle Load Shed Button" from the AEP manual load shed program.
- 3) Increased the "time-out" interval on the load shed program
- 4) Revised the Transmission Load Shed Procedure to have a Transmission dispatcher break up ERCOT instructions into no larger than 200 MW trips at a time for a single district while implementing the total load shed amount in a timely manner.
- 5) Revised the Transmission Load Shed Procedure to have a Transmission dispatcher verbally verify with the Distribution dispatcher the entered values prior to implementing the load shed command.
- 6) Revised the Distribution Dispatch Center Automated Manual Load Shed Procedure to include verbal verification with Transmission dispatcher as well as steps addressing a directive to restore load.
- 7) Developed a training video demonstrating the Automated Load Shedding process.
- 8) Provided training on the video to the Distribution dispatchers.
- 9) Developed detailed steps on the process for arming the Automated Load Shedding Program and for executing the load shed command.

Provide the timetable for completion of the Mitigation Plan, including the completion date by which the Mitigation Plan will be fully implemented and the violations associated with this Mitigation Plan are corrected:

Proposed Completion date of Mitigation Plan: November 30, 2016

Milestone Activities, with completion dates, that your organization is proposing for this Mitigation Plan:

Additional Relevant Information

An additional file (EV-7) could not currently be provided in CDMS due to large file size (1GB)

Reliability Risk

Reliability Risk

While the Mitigation Plan is being implemented, the reliability of the bulk Power System may remain at higher Risk or be otherwise negatively impacted until the plan is successfully completed. To the extent they are known or anticipated : (i) Identify any such risks or impacts, and; (ii) discuss any actions planned or proposed to address these risks or impacts.

During the implementation of the mitigation plan, the risk to the Bulk Power System was minimal. AEP has taken steps to correct the load shed program process error and train and heighten dispatcher awareness regarding the load shed process and procedures (with preventive internal controls as listed in Milestones 4, 5, 6 and 9). This event, the lessons learned from the event, and the revised process discussed herein have been discussed through training pertinent AEP dispatch personnel.

Prevention

Describe how successful completion of this plan will prevent or minimize the probability further violations of the same or similar reliability standards requirements will occur

In addition to the already held trainings, AEP's revised process and procedure instruction (with preventive internal controls as listed in Milestones 4, 5, 6 and 9) will give dispatchers clear direction and understanding of the responsibilities associated with the load shed process. Providing training will reinforce expectations with respect to AEP dispatch personnel.

Describe any action that may be taken or planned beyond that listed in the mitigation plan, to prevent or minimize the probability of incurring further violations of the same or similar standards requirements

Authorization

An authorized individual must sign and date the signature page. By doing so, this individual, on behalf of your organization:

- * Submits the Mitigation Plan, as presented, to the regional entity for acceptance and approval by NERC, and
- * if applicable, certifies that the Mitigation Plan, as presented, was completed as specified.

Acknowledges:

1. I am qualified to sign this mitigation plan on behalf of my organization.
2. I have read and understand the obligations to comply with the mitigation plan requirements and ERO remedial action directives as well as ERO documents, including but not limited to, the NERC rules of procedure and the application NERC CMEP.
3. I have read and am familiar with the contents of the foregoing Mitigation Plan.

American Electric Power Service Corp as agent for AEP Texas North Co, AEP Texas Central Co, and Plan, including the timetable completion date, as accepted by the Regional Entity, NERC, and if required, the applicable governmental authority.

Authorized Individual Signature: _____
(Electronic signature was received by the Regional Office via CDMS. For Electronic Signature Policy see CMEP.)

Authorized Individual

Name: Wade Smith

Title: SVP Grid Development

Authorized On: December 02, 2016

Certification of Mitigation Plan Completion

Submittal of a Certification of Mitigation Plan Completion shall include data or information sufficient for the Regional Entity to verify completion of the Mitigation Plan. The Regional Entity may request additional data or information and conduct follow-up assessments, on-site or other Spot Checking, or Compliance Audits as it deems necessary to verify that all required actions in the Mitigation Plan have been completed and the Registered Entity is in compliance with the subject Reliability Standard. (CMEP Section 6.6)

Registered Entity Name: American Electric Power Service Corp as agent for AEP Texas North Co, AEP Texas Central Co, and Public Service of Oklahoma

NERC Registry ID: NCR04006

NERC Violation ID(s): TRE2015015386

Mitigated Standard Requirement(s): EOP-003-2 R5.

Scheduled Completion as per Accepted Mitigation Plan: November 30, 2016

Date Mitigation Plan completed: November 30, 2016

TRE Notified of Completion on Date: December 05, 2016

Entity Comment:

Additional Documents			
From	Document Name	Description	Size in Bytes
Entity	TRE2015015386 Mitigation Package.pdf		9,938,830

I certify that the Mitigation Plan for the above named violation(s) has been completed on the date shown above and that all submitted information is complete and correct to the best of my knowledge.

Name: Wade Smith

Title: SVP Grid Development

Email: wmith@aep.com

Phone: (614) 933-2400

Authorized Signature _____ Date _____

(Electronic signature was received by the Regional Office via CDMS. For Electronic Signature Policy see CMEP.)

Attachment C

Record documents for the violation of TOP-001-1a R3 (TRE2015015387)

C-1. Texas RE's Audit Finding for TOP-001-1a R3 dated December 7, 2015;

C-2. AEP's Mitigation Plan designated as TREMIT012460 for TOP-001-1a R3 submitted December 5, 2016

C-3. AEP's Certification of Mitigation Plan Completion for TOP-001-1a R3 dated January 5, 2017

Violation - Discovery Record

Registered Entity: American Electric Power Service Corp as agent for AEP Texas North Co, AEP Texas Central Co, and Public Service of Oklahoma

NERC Registry ID: NCR04006

NERC Violation ID: TRE2015015387

Discovery Method: Audit

Date Submitted: December 02, 2015

Region Contact:

Phone: 512-583-4965 Email: keith.smith@texasre.org

Standard: TOP-001-1a - Reliability Responsibilities and Authorities

Purpose: To ensure reliability entities have clear decision-making authority and capabilities to take appropriate actions or direct the actions of others to return the transmission system to normal conditions during an emergency.

Requirement: TOP-001-1a R3.

Each Transmission Operator, Balancing Authority, and Generator Operator shall comply with reliability directives issued by the Reliability Coordinator, and each Balancing Authority and Generator Operator shall comply with reliability directives issued by the Transmission Operator, unless such actions would violate safety, equipment, regulatory or statutory requirements. Under these circumstances the Transmission Operator, Balancing Authority, or Generator Operator shall immediately inform the Reliability Coordinator or Transmission Operator of the inability to perform the directive so that the Reliability Coordinator or Transmission Operator can implement alternate remedial actions.

Violated Sub-Req(s):

Violated Function(s): Transmission Operator (TOP)

Init Determ a Vln: December 01, 2015

Begin Date of Vln: October 08, 2014

End Date: October 08, 2014

Notified of Vln on: December 01, 2015

Potential Impact to BES: This violation did not pose a serious or substantial risk to the bulk power system but had a moderate impact because more than 150,000 customers unnecessarily lost power for approximately 10 minutes, voltages in the immediate area momentarily spiked above normal operating ranges, and system frequency momentarily peaked at 60.13 Hz.

Brief Vln Descr. & Cause: On October 8, 2014, ERCOT directed AEP to shed 134 MW of Load. AEP responded to the directive, but shed an incorrect amount of Load.

Alleged Violation: null
Contravention:

Registered Entity: null
Report/Response:

Risk Factor: High

Severity Level: VSL - Severe

Factual Basis: The NERC VSL Matrix only includes one level for non-compliance with TOP-001-1a R3, which is severe.

The responsible entity failed to comply with reliability directives issued by the Reliability Coordinator or the Transmission Operator (when applicable), when said directives would not have resulted in actions that would violate safety, equipment, regulatory or statutory requirements, or under circumstances that said directives would have resulted in actions that would violate safety, equipment, regulatory or statutory requirements the responsible entity failed to inform the Reliability Coordinator or Transmission Operator (when applicable) of the inability to perform the directive so that the Reliability Coordinator or Transmission Operator could implement alternate remedial actions.

Mitigation Plan

Mitigation Plan Summary

Registered Entity: American Electric Power Service Corp as agent for AEP Texas North Co, AEP Texas Central Co, and Public Service of Oklahoma

Mitigation Plan Code: TREMIT012460

Mitigation Plan Version: 1

NERC Violation ID	Requirement	Violation Validated On
TRE2015015387	TOP-001-1a R3.	03/09/2016

Mitigation Plan Submitted On: December 05, 2016

Mitigation Plan Accepted On: December 06, 2016

Mitigation Plan Proposed Completion Date: November 30, 2016

Actual Completion Date of Mitigation Plan:

Mitigation Plan Certified Complete by AEPSC On: December 05, 2016

Mitigation Plan Completion Verified by TRE On:

Mitigation Plan Completed? (Yes/No): No

Compliance Notices

Section 6.2 of the NERC CMEP sets forth the information that must be included in a Mitigation Plan. The Mitigation Plan must include:

- (1) The Registered Entity's point of contact for the Mitigation Plan, who shall be a person (i) responsible for filing the Mitigation Plan, (ii) technically knowledgeable regarding the Mitigation Plan, and (iii) authorized and competent to respond to questions regarding the status of the Mitigation Plan. This person may be the Registered Entity's point of contact described in Section B.
 - (2) The Alleged or Confirmed Violation(s) of Reliability Standard(s) the Mitigation Plan will correct.
 - (3) The cause of the Alleged or Confirmed Violation(s).
 - (4) The Registered Entity's action plan to correct the Alleged or Confirmed Violation(s).
 - (5) The Registered Entity's action plan to prevent recurrence of the Alleged or Confirmed violation(s).
 - (6) The anticipated impact of the Mitigation Plan on the bulk power system reliability and an action plan to mitigate any increased risk to the reliability of the bulk power-system while the Mitigation Plan is being implemented.
 - (7) A timetable for completion of the Mitigation Plan including the completion date by which the Mitigation Plan will be fully implemented and the Alleged or Confirmed Violation(s) corrected.
 - (8) Implementation milestones no more than three (3) months apart for Mitigation Plans with expected completion dates more than three (3) months from the date of submission. Additional violations could be determined or recommended to the applicable governmental authorities for not completing work associated with accepted milestones.
 - (9) Any other information deemed necessary or appropriate.
 - (10) The Mitigation Plan shall be signed by an officer, employee, attorney or other authorized representative of the Registered Entity, which if applicable, shall be the person that signed the Self Certification or Self Reporting submittals.
 - (11) This submittal form may be used to provide a required Mitigation Plan for review and approval by regional entity(ies) and NERC.
- The Mitigation Plan shall be submitted to the regional entity(ies) and NERC as confidential information in accordance with Section 1500 of the NERC Rules of Procedure.
 - This Mitigation Plan form may be used to address one or more related alleged or confirmed violations of one Reliability Standard. A separate mitigation plan is required to address alleged or confirmed violations with respect to each additional Reliability Standard, as applicable.
 - If the Mitigation Plan is accepted by regional entity(ies) and approved by NERC, a copy of this Mitigation Plan will be provided to the Federal Energy Regulatory Commission or filed with the applicable governmental authorities for approval in Canada.
 - Regional Entity(ies) or NERC may reject Mitigation Plans that they determine to be incomplete or inadequate.
 - Remedial action directives also may be issued as necessary to ensure reliability of the bulk power system.
 - The user has read and accepts the conditions set forth in these Compliance Notices.

Entity Information

Identify your organization:

Entity Name: American Electric Power Service Corp as agent for AEP Texas North Co, AEP Texas Central Co, and Public Service of Oklahoma

NERC Compliance Registry ID: NCR04006

Address: 1 Riverside Plaza
Columbus OH 43215

Identify the individual in your organization who will serve as the Contact to the Regional Entity regarding this Mitigation Plan. This person shall be technically knowledgeable regarding this Mitigation Plan and authorized to respond to Regional Entity regarding this Mitigation Plan:

Name: Zach McCullough

Title: Regulatory Consultant

Email: zwmccullough@aep.com

Phone: 614-716-2089

Violation(s)

This Mitigation Plan is associated with the following violation(s) of the reliability standard listed below:

Violation ID	Date of Violation	Requirement
Requirement Description		
TRE2015015387	10/08/2014	TOP-001-1a R3.
Each Transmission Operator, Balancing Authority, and Generator Operator shall comply with reliability directives issued by the Reliability Coordinator, and each Balancing Authority and Generator Operator shall comply with reliability directives issued by the Transmission Operator, unless such actions would violate safety, equipment, regulatory or statutory requirements. Under these circumstances the Transmission Operator, Balancing Authority, or Generator Operator shall immediately inform the Reliability Coordinator or Transmission Operator of the inability to perform the directive so that the Reliability Coordinator or Transmission Operator can implement alternate remedial actions.		

Brief summary including the cause of the violation(s) and mechanism in which it was identified:

The following incident was identified as a potential non-compliance violation during the TRE/AEP 10/2015 NERC compliance audit:

At 15:51 on October 8, 2014, three generation units in the Lower Rio Grande Valley (Valley) area tripped offline. These unit trips, combined with existing planned generation outages and elevated load due to high temperatures in the Valley, resulted in certain transmission facilities exceeding their System Operating Limits (SOL). In response to these events, the Electric Reliability Council of Texas, Inc. (ERCOT), acting as the Balancing Authority (BA) and Reliability Coordinator (RC) for the ERCOT region, declared a Transmission emergency at 16:08. At 16:49, ERCOT implemented the Valley Import Constraint Management Plan (Plan) to address internal Valley transmission issues. Pursuant to the Plan, ERCOT directed AEP to shed its portion of 200 MW, or 134 MW, of load.

Within four minutes following the receipt of ERCOT's load-shed directive, AEP personnel entered the appropriate amount of load to be shed into AEP's automated load shedding program. However, the AEP personnel in question then inadvertently selected the "Zone Cycle Load Shed Button" (i.e., shed all load for the manual load shed plan for the zone) instead of the "MW Amount Load Shed Control Button" (i.e., shed load in zone up to value entered) from the load shed program's main operating screen. Based on this instruction, the AEP load shed program, as designed, shed a complete cycle of load in the Valley zone. As a result, AEP shed 678 MW of load. Recognizing the unintended action, AEP restored approximately 440 MW of the excess load shed within 10 minutes of the initial load-shed event.

Relevant information regarding the identification of the violation(s):

EOP-003-2 R5:

On October 8, 2014, ERCOT directed AEP to shed 134 MW of load. AEP did not implement load shedding in steps established to minimize the risk of further uncontrolled separation, loss of generation, or system shutdown.

TOP-001-1a R3:

On October 8, 2014, ERCOT directed AEP to shed 134 MW of load. AEP responded to the directive, but did not comply to the directive and shed an excessive amount of load.

Plan Details

Identify and describe the action plan, including specific tasks and actions that your organization is proposing to undertake, or which it undertook if this Mitigation Plan has been completed, to correct the violation(s) identified above in Section C.1 of this form:

- 1) Restored approximately 678 MW of load during the event.
- 2) Removed the "Zone Cycle Load Shed Button" from the AEP manual load shed program.
- 3) Increased the "time-out" interval on the load shed program
- 4) Revised the Transmission Load Shed Procedure to have a Transmission dispatcher break up ERCOT instructions into no larger than 200 MW trips at a time for a single district while implementing the total load shed amount in a timely manner.
- 5) Revised the Transmission Load Shed Procedure to have a Transmission dispatcher verbally verify with the Distribution dispatcher the entered values prior to implementing the load shed command.
- 6) Revised the Distribution Dispatch Center Automated Manual Load Shed Procedure to include verbal verification with Transmission dispatcher as well as steps addressing a directive to restore load.
- 7) Developed a training video demonstrating the Automated Load Shedding process.
- 8) Provided training on the video to the Distribution dispatchers.
- 9) Developed detailed steps on the process for arming the Automated Load Shedding Program and for executing the load shed command.

Provide the timetable for completion of the Mitigation Plan, including the completion date by which the Mitigation Plan will be fully implemented and the violations associated with this Mitigation Plan are corrected:

Proposed Completion date of Mitigation Plan: November 30, 2016

Milestone Activities, with completion dates, that your organization is proposing for this Mitigation Plan:

Additional Relevant Information

An additional file (EV-7) could not currently be provided in CDMS due to large file size (1GB)

Reliability Risk

Reliability Risk

While the Mitigation Plan is being implemented, the reliability of the bulk Power System may remain at higher Risk or be otherwise negatively impacted until the plan is successfully completed. To the extent they are known or anticipated : (i) Identify any such risks or impacts, and; (ii) discuss any actions planned or proposed to address these risks or impacts.

During the implementation of the mitigation plan, the risk to the Bulk Power System was minimal. AEP has taken steps to correct the load shed program process error and train and heighten dispatcher awareness regarding the load shed process and procedures (with preventive internal controls as listed in Milestones 4, 5, 6 and 9). This event, the lessons learned from the event, and the revised process discussed herein have been discussed through training pertinent AEP dispatch personnel.

Prevention

Describe how successful completion of this plan will prevent or minimize the probability further violations of the same or similar reliability standards requirements will occur

In addition to the already held trainings, AEP's revised process and procedure instruction (with preventive internal controls as listed in Milestones 4, 5, 6 and 9) will give dispatchers clear direction and understanding of the responsibilities associated with the load shed process. Providing training will reinforce expectations with respect to AEP dispatch personnel.

Describe any action that may be taken or planned beyond that listed in the mitigation plan, to prevent or minimize the probability of incurring further violations of the same or similar standards requirements

Authorization

An authorized individual must sign and date the signature page. By doing so, this individual, on behalf of your organization:

- * Submits the Mitigation Plan, as presented, to the regional entity for acceptance and approval by NERC, and
- * if applicable, certifies that the Mitigation Plan, as presented, was completed as specified.

Acknowledges:

1. I am qualified to sign this mitigation plan on behalf of my organization.
2. I have read and understand the obligations to comply with the mitigation plan requirements and ERO remedial action directives as well as ERO documents, including but not limited to, the NERC rules of procedure and the application NERC CMEP.
3. I have read and am familiar with the contents of the foregoing Mitigation Plan.

American Electric Power Service Corp as agent for AEP Texas North Co, AEP Texas Central Co, and Plan, including the timetable completion date, as accepted by the Regional Entity, NERC, and if required, the applicable governmental authority.

Authorized Individual Signature: _____

(Electronic signature was received by the Regional Office via CDMS. For Electronic Signature Policy see CMEP.)

Authorized Individual

Name: Wade Smith

Title: SVP Grid Development

Authorized On: December 02, 2016

Certification of Mitigation Plan Completion

Submittal of a Certification of Mitigation Plan Completion shall include data or information sufficient for the Regional Entity to verify completion of the Mitigation Plan. The Regional Entity may request additional data or information and conduct follow-up assessments, on-site or other Spot Checking, or Compliance Audits as it deems necessary to verify that all required actions in the Mitigation Plan have been completed and the Registered Entity is in compliance with the subject Reliability Standard. (CMEP Section 6.6)

Registered Entity Name: American Electric Power Service Corp as agent for AEP Texas North Co, AEP Texas Central Co, and Public Service of Oklahoma

NERC Registry ID: NCR04006

NERC Violation ID(s): TRE2015015387

Mitigated Standard Requirement(s): TOP-001-1a R3.

Scheduled Completion as per Accepted Mitigation Plan: November 30, 2016

Date Mitigation Plan completed: November 30, 2016

TRE Notified of Completion on Date: December 05, 2016

Entity Comment:

Additional Documents			
From	Document Name	Description	Size in Bytes
Entity	TRE2015015386 Mitigation Package.pdf		9,938,830

I certify that the Mitigation Plan for the above named violation(s) has been completed on the date shown above and that all submitted information is complete and correct to the best of my knowledge.

Name: Wade Smith

Title: SVP Grid Development

Email: wsmith@aep.com

Phone: (614) 933-2400

Authorized Signature _____ Date _____

(Electronic signature was received by the Regional Office via CDMS. For Electronic Signature Policy see CMEP.)