



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

September 30, 2010

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

**Re: NERC Abbreviated Notice of Penalty regarding Tennessee Valley Authority,  
FERC Docket No. NP10-\_\_-000**

Dear Ms. Bose:

The North American Electric Reliability Corporation (NERC) hereby provides this Abbreviated Notice of Penalty (NOP) regarding Tennessee Valley Authority (TVA),<sup>1</sup> with information and

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<sup>1</sup> On September 25, 2009, NERC filed a Notice of Penalty designated as NOC-056 and issued FERC Docket No. NP09-36-000 regarding a Notice of Confirmed Violation for TVA's violation of PRC-005-1. On October 23, 2009, FERC issued an order stating it would not engage in further review of the Notice of Penalty. This issue involved two of the local power distributors for which TVA accepted compliance responsibility. TVA self-certified as non-compliant with NERC Reliability Standard PRC-005-1, R1 and R2 on September 1, 2007, as part of its required, annual self-certification of compliance due to be submitted to SERC Reliability Corporation (SERC) on September 1, 2007. TVA's self-certification submittal was specific to the compliance status of the TVA Distributors, a group of 159 electric power distribution companies surrounded by and interconnected with TVA's transmission system, some with ownership rights to transmission facilities operated at 100kV or above (Distributors). TVA has accepted compliance responsibility for the TVA Distributors as a joint registration organization, within the SERC region, and is included on the NERC Compliance Registry as the registered and responsible entity on behalf of these 159 Distributors. TVA stated in its self-certification that a power distributor was in progress of defining the philosophy, procedures, and frequency of testing. In addition, the power distributor also reported that its program to document maintenance and testing scheduling was incomplete and was revising the program to use its management system. The deficiencies pertained to documentation of two (2) of the TVA Distributors. The first Distributor was deemed to have been in violation of PRC-005-1, R1 because the Distributor's Protection System maintenance and testing procedure document did not specify the intervals for maintenance and testing and the basis on which the intervals were determined, for all of its applicable relays. The second Distributor was deemed to be in violation of PRC-005-1, R2 because the Distributor could not produce evidence to confirm that its relevant protective system devices associated with transmission systems were maintained and tested within defined intervals. Specifically, SERC identified the following instances of deficiency: (1) relays were being tested, but the documentation of relay testing was lacking, and (2) the protective systems have been maintained, but documentation of maintenance and basis for testing intervals was missing. Although the violations are for the same Registered Entity and involve the same NERC Reliability Standard (PRC-005-1), SERC determined these should not be considered repeat violations because the scope is unrelated and should not serve as a basis for aggravating the penalty because the prior

details regarding the nature and resolution of the violation<sup>2</sup> discussed in detail in the Settlement Agreement (Attachment c) and the Disposition Document attached hereto (Attachment A to the Settlement Agreement), in accordance with the Federal Energy Regulatory Commission's (Commission or FERC) rules, regulations and orders, as well as NERC Rules of Procedure including Appendix 4C (NERC Compliance Monitoring and Enforcement Program (CMEP)).<sup>3</sup>

On May 14, 2009, while preparing for a June 1, 2009 self-certification, TVA reported to SERC Reliability Corporation (SERC) that TVA was in violation of PRC-005-1 R2.1 (first violation) because it had failed to perform a quarterly inspection of a microwave repeater station containing a relay communication circuit. On May 22, 2009, again in preparation for the June 1, 2009 self-certification, TVA reported to SERC that TVA was in violation of PRC-005-1 R2.1 (second violation) because it did not have evidence that batteries in 17 hydroelectric generating facilities were maintained and tested within the defined intervals beginning in April 2008 and continuing until June 2009.<sup>4</sup> This NOP is being filed with the Commission because SERC and TVA have entered into a Settlement Agreement to resolve all outstanding issues arising from SERC's determination and findings of the enforceable violations of PRC-005-1 R2.1. According to the Settlement Agreement, TVA admits the violations, and has agreed to the assessed penalty of ten thousand dollars (\$10,000), 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. Accordingly, the violations identified as NERC Violation Tracking Identification Numbers SERC200900271 and SERC200900273 are being filed in accordance with the NERC Rules of Procedure and the CMEP.

### **Statement of Findings Underlying the Violations**

This NOP incorporates the findings and justifications set forth in the Settlement Agreement executed on August 30, 2010, by and between SERC and TVA. The details of the findings and the basis for the penalty are set forth in the Disposition Documents. This NOP 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, NERC provides the following summary table identifying each violation of a Reliability Standard resolved by the Settlement Agreement, as discussed in greater detail below.

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violations were specific to Distributors and that Mitigation Plan would not have resolved or prevented the instant violation.

<sup>2</sup> 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.

<sup>3</sup> *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards* (Order No. 672), III FERC Stats. & Regs. ¶ 31,204 (2006); *Notice of New Docket Prefix "NP" for Notices of Penalty Filed by the North American Electric Reliability Corporation*, Docket No. RM05-30-000 (February 7, 2008). See also 18 C.F.R. Part 39 (2010). *Mandatory Reliability Standards for the Bulk-Power System*, FERC Stats. & Regs. ¶ 31,242 (2007) (Order No. 693), *reh'g denied*, 120 FERC ¶ 61,053 (2007) (Order No. 693-A). See 18 C.F.R. § 39.7(c)(2).

<sup>4</sup> As noted in footnote 1, because the instant violations were completely unrelated to the violations filed under NOC-056, the mitigating activities for both NOC-056 and NOC-585 were adequate to deter future violations under the similar individual facts and circumstances.

Region	Registered Entity	NOC ID	NERC Violation ID	Reliability Std.	Req. (R)	VRF	Total Penalty (\$)
SERC	Tennessee Valley Authority	NOC-585	SERC200900271	PRC-005-1	2.1	High <sup>5</sup>	10,000
			SERC200900273	PRC-005-1	2.1	High <sup>6</sup>	

The text of the Reliability Standard at issue is set forth in the Disposition Document.

#### PRC-005-1 R2.1 - OVERVIEW<sup>7</sup>

On May 14, 2009, TVA reported to SERC that TVA was in violation of PRC-005-1 R2.1 (first violation) stating that as a Transmission Owner (TO), it had failed to perform a quarterly inspection of a microwave repeater station containing a relay communication circuit. On May 22, 2009, TVA reported to SERC that TVA was in violation of PRC-005-1 R2.1 (second violation) stating that as a Generator Owner (GO), TVA does not have evidence that batteries in 17 hydroelectric generating facilities were maintained and tested within the defined intervals beginning in April 2008 and continuing until June 2009.

The duration of the PRC-005-1 R2.1 (first violation) violation was from October 7, 2008, when the quarterly testing was due, through January 13, 2009, the date when the testing and maintenance was completed. The duration of the PRC-005-1 R2.1 (second violation) violation was from April 30, 2008, when the quarterly testing was due, through June 11, 2009, the date when the applicable battery inspections were completed.

SERC concluded that the violation of PRC-005-1 R2.1 (first violation) did not pose a serious or substantial risk to the reliability of the bulk power system (BPS) because: (1) TVA missed a single quarterly inspection, and (2) the microwave repeater station is a looped system- a failure of the specific station would cause the trip signal to be carried over the other end of the loop.

SERC concluded that the violation of PRC-005-1 R2.1 (second violation) did not pose a serious or substantial risk to the reliability of the BPS because: (1) The only difference between what was previously monthly (that had been included in weekly Preventative Maintenance) and the quarterly was a checking and recording electrolyte temperature of 10% of each battery's cells rather than just the pilot cells, therefore the only gap actually experienced was a fewer number of individual cell temperature readings during the period when quarterly inspections were not performed, and (2) Sixteen of the plants have indication of the station battery status through TVA's automation control system (ACS). The single exception is a pumped storage plant which

<sup>5</sup> PRC-005-1 R2 has a "Lower" VRF; R2.1 and R2.2 each have a "High" VRF. SERC assessed a "High" VRF for this violation. During a final review of the standards subsequent to the March 23, 2007 filing of the Version 1 VRFs, NERC identified that some standards requirements were missing VRFs; one of these include PRC-005-1 R2.1. On May 4, 2007, NERC assigned PRC-005 R2.1 a "High" VRF. In the Commission's June 26, 2007 Order on Violation Risk Factors, the Commission approved the PRC-005-1 R2.1 "High" VRF as filed. Therefore, the "High" VRF was in effect from June 26, 2007.

<sup>6</sup> *Id.*

<sup>7</sup> Further information on this violation is contained in the Disposition Document included as Attachment A to the Settlement Agreement.

is not automated but has battery system alarms in the control room and has 24-hour operators in the control room. Therefore, although the quarterly inspections were missed, in fact the weekly inspections and the annual inspection continued. Although the weekly inspection was less rigorous than the planned quarterly inspections, it was adequate to minimize the risk to the BPS.

## **Statement Describing the Assessed Penalty, Sanction or Enforcement Action Imposed<sup>8</sup>**

### **Basis for Determination**

Taking into consideration the Commission's direction in Order No. 693, the NERC Sanction Guidelines, the Commission's July 3, 2008 and October 26, 2009 Guidance Orders,<sup>9</sup> the NERC BOTCC reviewed the Settlement Agreement and supporting documentation on August 3, 2010. The NERC BOTCC approved the Settlement Agreement, including SERC's assessment of a ten thousand dollar (\$10,000) financial penalty against TVA and other actions to facilitate future compliance required under the terms and conditions of the Settlement Agreement. In approving the Settlement Agreement, the NERC BOTCC reviewed the applicable requirements of the Commission-approved Reliability Standards and the underlying facts and circumstances of the violations at issue.

In reaching this determination, the NERC BOTCC considered the following factors:

1. the violations were TVA's second processed violation of the instant Standard. Although the current violations are for the same Registered Entity and involves the same NERC Reliability Standard (PRC-005-1) as TVA's prior violation (NOC-056), SERC determined the instant violations should not be considered repeat violations because the scope is completely different and the earlier violations were attributable to 2 of 159 local power distributors for which TVA accepted compliance responsibility;
2. TVA reported the violation in preparing for its June 1, 2009 self-certification;
3. TVA agreed to resolve these issues via settlement and promptly initiated various mitigation and preventative measures, as described in its Mitigation Plan, before issuance of a Notice of Alleged Violation and Proposed Penalty or Sanction;
4. SERC reported that TVA was cooperative throughout the compliance enforcement process;
5. TVA has a compliance program,<sup>10</sup> as discussed in the Disposition Document;
6. there was no evidence of any attempt to conceal a violation nor evidence of intent to do so;
7. the violations did not pose a serious or substantial risk to the BPS, as discussed in the Notice of Penalty and Disposition Document; and

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<sup>8</sup> See 18 C.F.R. § 39.7(d)(4).

<sup>9</sup> *North American Electric Reliability Corporation*, "Guidance Order on Reliability Notices of Penalty," 124 FERC ¶ 61,015 (2008); *North American Electric Reliability Corporation*, "Further Guidance Order on Reliability Notices of Penalty," 129 FERC ¶ 61,069 (2009). See also *North American Electric Reliability Corporation*, "Notice of No Further Review and Guidance Order," 132 FERC ¶ 61,182.

<sup>10</sup> SERC considered the existence of TVA's internal compliance program as a neutral factor in determining the penalty.

8. SERC reported that there were no other mitigating or aggravating factors or extenuating circumstances that would affect the assessed penalty.

For the foregoing reasons, the NERC BOTCC approves the Settlement Agreement and believes that the assessed penalty of ten thousand dollar (\$10,000) 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 NOP 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 NOP are the following documents:

- a) PRC-005-1 R2.1 (first violation) TVA Self Report dated May 14, 2009, included as Attachment a;
- b) PRC-005-1 R2.1 (second violation) TVA Self Report dated May 22, 2009, included as Attachment b;
- c) Settlement Agreement by and between SERC and TVA executed August 30, 2010, included as Attachment c;
  - i. Disposition Document, included as Attachment A to the Settlement Agreement;
- d) TVA 's Mitigation Plan MIT-07-1902 (first violation) submitted May 14, 2009, included as Attachment d;
- e) TVA 's Mitigation Plan MIT-08-1903 (second violation) submitted May 22, 2009, included as Attachment e;
- f) TVA 'S Certification of Mitigation Plan Completion of MIT-07-1902 (first violation) dated June 12, 2009, included as Attachment f;
- g) TVA 'S Certification of Mitigation Plan Completion of MIT-08-1903 (second violation) dated August 24, 2009, included as Attachment g;
- h) SERC 'S Verification of Mitigation Plan Completion of MIT-07-1902 (first violation) dated November 20, 2009, included as Attachment h; and
- i) SERC 'S Verification of Mitigation Plan Completion of MIT-08-1903 second violation dated May 21, 2010, included as Attachment i.

#### **A Form of Notice Suitable for Publication<sup>11</sup>**

A copy of a notice suitable for publication is included in Attachment j.

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<sup>11</sup> See 18 C.F.R. § 39.7(d)(6).

## Notices and Communications

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

<p>Gerald W. Cauley* President and Chief Executive Officer David N. Cook* Sr. Vice President and General Counsel North American Electric Reliability Corporation 116-390 Village Boulevard Princeton, NJ 08540-5721 (609) 452-8060 (609) 452-9550 – facsimile gerry.cauley@nerc.net david.cook@nerc.net</p> <p>James R. Dalrymple* Vice President Transmission Reliability Organization Tennessee Valley Authority 1101 Market Street MR 1C-C Chattanooga, TN 37402 (423) 751-8678 (423) 751-7116 - facsimile jrdalrymple@tva.gov</p> <p>Richard T. Saas* Senior Attorney Tennessee Valley Authority WT 6A-K Knoxville, TN 37902 (865) 632-8941 (865) 632-4528 - facsimile rtsaas@tva.gov</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>	<p>Rebecca J. Michael* Assistant General Counsel North American Electric Reliability Corporation 1120 G Street, N.W. Suite 990 Washington, DC 20005-3801 (202) 393-3998 (202) 393-3955 – facsimile rebecca.michael@nerc.net</p> <p>R. Scott Henry* President and CEO SERC Reliability Corporation 2815 Coliseum Centre Drive Charlotte, NC 28217 (704) 940-8202 (704) 357-7914 – facsimile shenry@serc1.org</p> <p>Marisa A. Sifontes* General Counsel Jacqueline E. Carmody* Legal Counsel SERC Reliability Corporation 2815 Coliseum Centre Drive, Suite 500 Charlotte, NC 28217 (704) 494-7775 (704) 357-7914 – facsimile msifontes@serc1.org jcarmody@serc1.org</p> <p>Kenneth B. Keels, Jr.* Director of Compliance Andrea Koch* Manager of Compliance Enforcement SERC Reliability Corporation 2815 Coliseum Centre Drive Charlotte, NC 28217 (704) 940-8214 (704) 357-7914 – facsimile kkeels@serc1.org akoch@serc1.org</p>
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## Conclusion

Accordingly, NERC respectfully requests that the Commission accept this Abbreviated NOP as compliant with its rules, regulations and orders.

Respectfully submitted,

Gerald W. Cauley  
President and Chief Executive Officer  
David N. Cook  
Sr. Vice President and General Counsel  
North American Electric Reliability Corporation  
116-390 Village Boulevard  
Princeton, NJ 08540-5721  
(609) 452-8060  
(609) 452-9550 – facsimile  
gerry.cauley@nerc.net  
david.cook@nerc.net

/s/ Rebecca J. Michael  
Rebecca J. Michael  
Assistant General Counsel  
North American Electric Reliability  
Corporation  
1120 G Street, N.W.  
Suite 990  
Washington, DC 20005-3801  
(202) 393-3998  
(202) 393-3955 – facsimile  
rebecca.michael@nerc.net

cc: Tennessee Valley Authority  
SERC Reliability Corporation

Attachments

## **Attachment a**

**PRC-005-1 R2.1 (first violation) TVA Self Report  
dated May 14, 2009**





**SERC Reliability Corporation**  
**Self-Reporting / Complaint Form Template**  
**Revision 1 (10-25-07)**

Report Type (please check): ☒ Self-Report      ☐ Complaint

Date of Report:   5/14/2009  

NAME OF PERSON REPORTING POSSIBLE STANDARD VIOLATION(S)		
CONTACT NAME	CONTACT TELEPHONE NUMBER	
Russell C Hardison	423-751-8300	
CONTACT E-MAIL	CONTACT FAX	
rhardison@tva.gov	423-751-4760	
REPORTING COMPANY NAME	ANONYMOUS? (Y/N)	
Tennessee Valley Authority	N	
NERC OR REGIONAL STANDARD(S) AND SPECIFIC REQUIREMENT(S) POSSIBLY VIOLATED		
NAME OF COMPANY POSSIBLY VIOLATING STANDARD(S)		ENTITY FUNCTION TYPE(S)
Tennessee Valley Authority		TO
STANDARD # AND VERSION	MEASURE / REQUIREMENT	DATE OF POSSIBLE VIOLATION(S)
PRC-005-1	R2.1	5/14/2009
POSSIBLE VIOLATION DESCRIPTION, REASON FOR COMPLAINT, OR QUESTION		
Due to an inadvertant human performance error, TVA did not conduct a quarterly test for part of a Protection System (a relay communication circuit at a microwave repeater station) at its South Jackson Microwave (MW) Station, consistent with TVA's applicable testing intervals. The protection circuit in question is a backup circuit for the Montgomery to Wilson 500-kV "A" Set Pilot Circuit.		
RELIABILITY IMPACT (IF KNOWN)		
No reliability impact due to this being a loop communication circuit. If this site had failed and taken out this communication path, the other part of the loop would have carried communications required for proper relay communication.		

**SERC Staff will contact the person providing the report as soon as possible.**

**If you do not receive a response from SERC Staff within 2 business days please contact the SERC office (704-357-7372).**

**Please complete the form as completely as possible and email to [serccomply@serc1.org](mailto:serccomply@serc1.org).**

## **Attachment b**

**PRC-005-1 R2.1 (second violation) TVA Self  
Report dated May 22, 2009**



**SERC Reliability Corporation**  
**Self-Reporting / Complaint Form Template**  
**Revision 1 (10-25-07)**

**Report Type (please check):** ☒ **Self-Report**      ☐ **Complaint**

**Date of Report:**   5-22-09  

NAME OF PERSON REPORTING POSSIBLE STANDARD VIOLATION(S)		
CONTACT NAME	CONTACT TELEPHONE NUMBER	
David Thompson	423-751-2961	
CONTACT E-MAIL	CONTACT FAX	
dwthompson@tva.gov		
REPORTING COMPANY NAME	ANONYMOUS? (Y/N)	
Tennessee Valley Authority	N	
<b>NERC OR REGIONAL STANDARD(S) AND SPECIFIC REQUIREMENT(S) POSSIBLY VIOLATED</b>		
NAME OF COMPANY POSSIBLY VIOLATING STANDARD(S)		ENTITY FUNCTION TYPE(S)
Tennessee Valley Authority		GO
STANDARD # AND VERSION	MEASURE / REQUIREMENT	DATE OF POSSIBLE VIOLATION(S)
PRC-005-1	R2.1	
<b>POSSIBLE VIOLATION DESCRIPTION, REASON FOR COMPLAINT, OR QUESTION</b>		
TVA did not follow its documented maintenance procedure concerning battery systems providing power for protective relays. The quarterly maintenance activities on the batteries were not completed as required by the maintenance program.		
<b>RELIABILITY IMPACT (IF KNOWN)</b>		
There is no risk to the bulk power system or to the generator protective functions associated with this possible violation.		

**SERC Staff will contact the person providing the report as soon as possible.**

**If you do not receive a response from SERC Staff within 2 business days please contact the SERC office (704-357-7372).**

**Please complete the form as completely as possible and email to [serccomply@serc1.org](mailto:serccomply@serc1.org).**

## **Attachment c**

### **Settlement Agreement by and between SERC and TVA executed August 52, 2010**

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**SETTLEMENT AGREEMENT**  
**OF**  
**SERC RELIABILITY CORPORATION**  
**AND**  
**TENNESSEE VALLEY AUTHORITY**

**I. INTRODUCTION**

1. SERC Reliability Corporation (“SERC”) and Tennessee Valley Authority (“TVA”) enter into this Settlement Agreement (“Settlement Agreement”) to resolve all outstanding issues arising from a preliminary and non-public assessment resulting in SERC’s determination and findings, pursuant to the North American Electric Reliability Corporation (“NERC”) Rules of Procedure, of two violations by TVA of NERC Reliability Standard PRC-005-1 (Transmission and Generation Protection System Maintenance and Testing, Requirement (R)2.1 (SERC Issue Tracking Nos. 09-027 and 09-029; NERC Violation ID Nos. SERC200900271 and SERC2009000273).
2. TVA admits the violations of NERC Reliability Standard PRC-005-1, R2.1 and has agreed to the proposed penalty of ten thousand dollars (\$10,000) to be assessed to TVA, in addition to other remedies and mitigation actions to mitigate the instant alleged violations and ensure future compliance under the terms and conditions of the Settlement Agreement.

**II. STIPULATION**

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

**Background**

4. See Section I of the Disposition document for a description of TVA.

**Violations of NERC Reliability Standard PRC-005-1, Requirement 2.1**

5. See Section II of the Disposition document for the description of the violations.

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

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

6. SERC Compliance Enforcement staff ("SERC staff") finds that beginning on October 7, 2008 and continuing until completion of this portion of TVA's Mitigation Plan on January 13, 2009, TVA, as a Transmission Owner, failed to perform a quarterly inspection and maintenance of a relay communication circuit at a microwave repeater as described in the Disposition document, and as required by PRC-005-1, R2.1.
7. SERC staff finds that beginning on April 30, 2008 and continuing until June 11, 2009, TVA as a Generator Owner, failed to provide evidence that Protection System devices were maintained and tested within the defined intervals for batteries in 17 hydroelectric generating facilities as described in the Disposition document, and as required by PRC-005-1, R2.1.
8. SERC staff concluded that the violations did not pose a serious or substantial risk to the bulk-power system, as discussed in the Disposition document.
9. SERC agrees that this Settlement Agreement is in the best interest of the parties and in the best interest of bulk-power system reliability.

#### **Statement of TVA**

10. TVA admits that the facts set forth and agreed to by the parties for purposes of this Agreement constitute violations of PRC-005-1, R 2.1.
11. TVA has agreed to enter into this Settlement Agreement with SERC 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. TVA agrees that this Settlement Agreement is in the best interest of the parties and in the best interest of bulk-power system reliability.

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

12. SERC staff and TVA agree that TVA has completed and SERC staff has verified completion of the mitigating actions set forth in Section IV of the Disposition document. The Mitigating Actions, Remedies and Sanctions are discussed in detail in the Disposition document.

13. SERC staff also considered the specific facts and circumstances of the violations and TVA'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 TVA to remedy the violation in a timely manner."<sup>1</sup> The factors considered by SERC staff in the determination of the appropriate penalty are set forth in Section V of the Disposition doc.
14. Based on the above factors, as well as the mitigation actions and preventative measures taken, TVA shall pay \$10,000 to SERC as set forth in this Settlement Agreement. TVA shall remit the payment to SERC via check, or by wire transfer to an account to be identified by SERC, within thirty days after the Agreement is either approved by the Federal Energy Regulatory Commission or by operation of law. SERC shall notify NERC, and NERC shall notify the Commission, if the payment is not timely received. If TVA does not remit the payment by the required date, interest payable to SERC will begin to accrue pursuant to the Commission's regulations at 18 C.F.R. §35.19a(a)(2)(iii) from the date that payment is due, and shall be payable in addition to the payment.
15. 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 violation that initiated this Settlement Agreement and/or additional violation(s) and may subject TVA to new or additional enforcement, penalty or sanction actions in accordance with the NERC Rules of Procedure. TVA shall retain all rights to defend against such additional enforcement actions in accordance with NERC Rules of Procedure.

## **V. ADDITIONAL TERMS**

16. The signatories to the Settlement Agreement agree that they enter into the Settlement Agreement voluntarily and that, other than the recitations set forth herein, no tender, offer or promise of any kind by any member, employee, officer, director, agent or representative of SERC or TVA has been made to induce the signatories or any other party to enter into the Settlement Agreement. The signatories agree that the terms and conditions of this Settlement Agreement are consistent with the Commission's regulations and orders, and NERC's Rules of Procedure.
17. SERC shall report the terms of all settlements of compliance matters to NERC. NERC will review the settlement for the purpose of evaluating its consistency with other settlements entered into for similar violations or under other, similar circumstances. Based on this review, NERC will either approve the settlement or reject the settlement and notify SERC and TVA of changes to the settlement that would result in approval. If NERC rejects the settlement, NERC will provide

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<sup>1</sup> 16 U.S.C. § 824o(e)(6).



specific written reasons for such rejection and SERC will attempt to negotiate a revised settlement agreement with TVA 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.

18. 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.
19. TVA agrees that this Settlement Agreement, when approved by NERC and the Commission, shall represent a final settlement of all matters set forth herein and TVA waives its right to further hearings and appeal, unless and only to the extent that TVA contends that any NERC or Commission action on the Settlement Agreement contains one or more material modifications to the Settlement Agreement. SERC reserves all rights to initiate enforcement, penalty or sanction actions against TVA in accordance with the NERC Rules of Procedure in the event that TVA fails to comply with the mitigation plan and compliance program agreed to in this Settlement Agreement. In the event TVA fails to comply with any of the stipulations, remedies, sanctions or additional terms, as set forth in this Settlement Agreement, SERC will initiate enforcement, penalty, or sanction actions against TVA 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, TVA shall retain all rights to defend against such enforcement actions, also according to the NERC Rules of Procedure.
20. TVA consents to the use of SERC's determinations, findings, and conclusions set forth in this Settlement Agreement for the purpose of assessing the factors, including the factor of determining the company's history of violations, in accordance with the NERC Sanction Guidelines and applicable Commission orders and policy statements. Such use may be in any enforcement action or compliance proceeding undertaken by NERC and/or any Regional Entity; provided, however, that TVA does not consent to the use of the specific acts set forth in this Settlement Agreement as the sole basis for any other action or proceeding brought by NERC and/or SERC, nor does TVA consent to the use of this Settlement Agreement by any other party in any other action or proceeding.
21. 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.
22. The undersigned representative of each party affirms that he or she has read the Settlement Agreement, that all of the matters set forth in the Settlement Agreement are true and correct to the best of his or her knowledge, information and belief, and that he or she understands that the Settlement Agreement is entered into by such

party in express reliance on those representations, provided, however, that such affirmation by each party's representative shall not apply to the other party's statements of position set forth in Section III of this Settlement Agreement.

23. The Settlement Agreement may be signed in counterparts.


24. This Settlement Agreement is executed in duplicate, each of which so executed shall be deemed to be an original.

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


Agreed to and accepted:

  
R. Scott Henry  
President and CEO  
**SERC RELIABILITY CORPORATION**

8/30/2010  
Date

  
Rob Manning  
EVP, Power Systems Operations  
**TENNESSEE VALLEY AUTHORITY**

8/26/10  
Date

  
Richard Dearman  
General Manager, NERC Compliance - TVA wide  
**TENNESSEE VALLEY AUTHORITY**

8/26/2010  
Date

## **Disposition Document**

**DISPOSITION OF VIOLATION<sup>1</sup>****Dated August 30, 2010**NERC TRACKING  
NO.**SERC200900271****SERC200900273**REGIONAL ENTITY TRACKING  
NO.**09-027****09-029**

NOC#

**NOC-585**

REGISTERED ENTITY

**Tennessee Valley Authority (TVA)**

NERC REGISTRY ID

**NCR01151**

REGIONAL ENTITY

**SERC Reliability Corporation (SERC)****I. REGISTRATION INFORMATION**

ENTITY IS REGISTERED FOR THE FOLLOWING FUNCTIONS:

BA	DP	GO	GOP	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
<b>5/31/07</b>	<b>5/31/07</b>	<b>5/31/07</b>	<b>5/31/07</b>	<b>3/20/08</b>	<b>5/31/07</b>	<b>5/31/07</b>		<b>5/31/07</b>	<b>5/31/07</b>		<b>5/31/07</b>	<b>5/31/07</b>	<b>5/31/07</b>	<b>5/31/07</b>

\* VIOLATIONS APPLY TO SHADED FUNCTIONS

## DESCRIPTION OF THE REGISTERED ENTITY

**TVA, a corporation owned by the U.S. government, provides electricity for 9 million people in parts of seven southeastern states. TVA's power-service area covers 80,000 square miles in the southeastern United States, including almost all of Tennessee and parts of Mississippi, Kentucky, Alabama, Georgia, North Carolina and Virginia and has its main offices in Knoxville, Chattanooga; Nashville, Tennessee; and Muscle Shoals, Alabama. TVA operates fossil-fuel, nuclear, and hydropower plants, and also produces energy from renewable sources as noted below. TVA manages the nation's fifth-largest river system, including 49 dams to reduce flood damage, produce power, maintain navigation, provide recreational opportunities, and protect water quality in the 41,000-square-mile watershed.**

**TVA, which receives no taxpayer money and makes no profits, also provides flood control, navigation and land management for the Tennessee River system and assists utilities and state and local governments with economic development.**

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

**TVA's Generation Assets**

<b>11 fossil plants (59 units)</b>	<b>29 hydro plants (109 units)</b>
<b>3 nuclear plants (6 units)</b>	<b>1 pumped-storage plant (4 units)</b>
<b>2 combined-cycle plants (6 units)</b>	<b>2 diesel-generator sites (9 units)</b>
<b>15 solar energy sites</b>	<b>1 wind energy site</b>
<b>1 digester-gas site</b>	<b>1 biomass-cofiring site</b>

**TVA's Generation Output**

- **33.7 million MW (net summer capability) capacity**

**TVA's Transmission**

- **Over 16,000 miles of transmission lines**

**II. VIOLATION INFORMATION**

RELIABILITY STANDARD	REQUIREMENT(S)	SUB-REQUIREMENT(S)	VRF(S)	VSL(S)
<b>PRC-005-1</b>	<b>2</b>	<b>2.1</b>	<b>High<sup>2</sup></b>	<b>Lower</b>
<b>PRC-005-1</b>	<b>2</b>	<b>2.1</b>	<b>High<sup>3</sup></b>	<b>Lower</b>

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

The purpose statement of PRC-005-1 provides: “[t]o ensure that all transmission and generation Protection Systems<sup>[4]</sup> affecting the reliability of the Bulk Electric System (BES) are maintained and tested.”

PRC-005-1, R2 provides:

**Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional [Entity] on request (within 30 calendar days). The documentation of the program implementation shall include:**

<sup>2</sup> PRC-005-1, R2 has a “Lower” VRF, but SERC staff assigned the “High” VRF due to the violation of R2.1 which has a “High” VRF. During a final review of the standards subsequent to the March 23, 2007 filing of the Version 1 VRFs, NERC identified that some standards’ requirements were missing VRFs; one of these includes PRC-005-1, R2.1. On May 4, 2007, NERC assigned PRC-005, R2.1 a “High” VRF. In the Commission’s June 26, 2007 Order on Violation Risk Factors, the Commission approved the PRC-005-1, R2.1 “High” VRF as filed. Therefore, the “High” VRF was in effect from June 26, 2007.

<sup>3</sup> *Id.*

<sup>4</sup> *The NERC Glossary of Terms Used in Reliability Standards* defines Protection System as “Protective relays, associated communication systems, voltage and current sensing devices, station batteries and DC control circuitry.”

**R2.1. Evidence Protection System devices were maintained and tested within the defined intervals.**

**R2.2. Date each Protection System device was last tested/maintained.**

#### VIOLATION DESCRIPTION

##### **PRC-005-1, R2.1 (First Violation)**

On May 14, 2009, while preparing for a June 1, 2009 self-certification, TVA reported that, as a Transmission Owner (TO), it had failed to perform a quarterly inspection of a microwave repeater station containing a relay communication circuit. TVA determined that due to a human performance error, TVA did not conduct a quarterly test for part of its transmission Protection System, a relay communication circuit at a microwave repeater station, consistent with TVA's applicable testing intervals. The protection circuit in question is a backup circuit for a 500-kV "A" Set Pilot Circuit and was commissioned in July 2008. While the protection communication circuit was placed in service in July 2008, the microwave repeater station has been in service for many years handling other, non-protection system, communication needs.

In accordance with its Protection System Maintenance and Testing program, TVA conducts quarterly tests of its Protection System Communication Stations. The quarterly inspections consist of the following activities: (1) inspection of dry nitrogen pressurizing system; (2) inspection of propane/diesel generator gas systems; (3) general visual inspection (*i.e.*, locks, lights, fans, fence, grounding, guys, *etc.*); (4) engine generator check (*i.e.*, oil level, belts, radiator, *etc.*); (5) battery charger readings; (6) station battery load test and readings; (7) generator load test; and (8) generator starting battery readings. Each year, TVA's Work Management System (WMS) generates work orders at the defined intervals for each inspection that needs to be scheduled for TVA's Protection Systems for the coming fiscal year (October 1- September 30).

At the beginning of FY2008 (in October 2007), a work order was generated for the microwave repeater station for each quarter of the 2008 fiscal year (prior to the time that the protection circuit was placed in service). In error, TVA maintenance schedulers closed the April 2008 work order in February 2008. However, in accordance with TVA's process, the work order should have remained in the system to allow for the work to occur in April 2008.

When TVA maintenance schedulers later discovered that there was no work order for the April 2008 quarterly inspection of the microwave station, they manually generated another work order with the next available quarterly inspection date (October 7, 2008), while the WMS retained the April 2008 reference on that work order. This created an April work order with a scheduled completion date of October 2008. The October 2008 schedule date went unnoticed. The April work



order, with an October 2008 schedule date, was completed and closed in April 2008. The next inspection was completed as planned on June 27, 2008 just prior to the relay circuit being placed in service in July 2008.

When work orders were generated for FY2009 (in October 2008), the WMS created another work order for the October 2008 quarterly inspection for the microwave station with an inspection date of October 7, 2008. Upon review of planned work orders, TVA's maintenance schedulers saw both October 7, 2008 work orders for the same equipment and closed the FY2009 work order for the October 7, 2008 inspection, as being duplicative.

The next quarterly inspection occurred as scheduled on January 13, 2009. In preparing for its June 1, 2009 self-certification, TVA detected the missing April 2008 quarterly inspection.

As a TO, TVA is in violation of PRC-005-1, R2.1 because it failed to perform a quarterly inspection and maintenance of the relay communication circuit at a microwave repeater station.

#### **PRC-005-1, R2.1 (Second Violation)**

In March 2008, TVA changed the generation Protective System Maintenance and Testing procedures covering its hydro-electric facilities to collapse some of the monthly preventative maintenance (PM) activities into its weekly routine so that battery PM would occur at weekly, quarterly, and annual intervals. When entering the intended changes into its PM scheduling software, TVA personnel inadvertently deleted quarterly PM activities. Therefore, no quarterly maintenance work orders were generated, and the maintenance was not performed for three quarters in 2008 (April, July, October) and the first quarter in 2009. The quarterly PM was completed in January 2009 when the concurrent annual inspection was performed. The primary difference between what was previously monthly and the quarterly data was in the number of electrolyte temperature and voltage measurements taken of the individual cells. This error was detected in preparing documentation for purposes of self-certification of TVA's compliance with Reliability Standards due June 1, 2009 and was self-reported to SERC on May 22, 2009.

Seventeen hydro plants were affected with a total generating capacity of approximately 4,600 MW or 13% of TVA's total generating capability and the only deviation from TVA's scheduled maintenance was the inadvertent elimination of quarterly inspections. TVA continued to conduct weekly and annual inspections as required by its maintenance program. The total number of missed quarterly inspections was 4 at each plant.

As a Generator Owner (GO), TVA is in violation of PRC-005-1, R2.1 because it does not have evidence that the batteries in 17 hydroelectric generating facilities were maintained and tested within the defined intervals beginning in April 2008 and

continuing until June 2009. Each of the 17 plants missed 4 quarterly inspections: April 2008, July 2008, October 2008 and March 2009. Quarterly inspections resumed beginning June 2009.

#### RELIABILITY IMPACT STATEMENT- POTENTIAL AND ACTUAL

##### PRC-005-1, R2.1 (First Violation)

SERC staff determined this violation of PRC-005-1, R2.1 posed no serious or substantial risk to the BPS because: (1) TVA missed a single quarterly inspection, and (2) the microwave repeater station is a looped system so that a failure of the specific station would cause the trip signal to be carried over the other end of the loop.

##### PRC-005-1, R2.1 (Second Violation)

SERC staff determined this violation of PRC-005-1, R2.1 posed no serious or substantial risk to the BPS because: (1) The only difference between what was previously monthly (that had been included in weekly PM) and the quarterly is a checking and recording electrolyte temperature of 10% of each battery's cells rather than just the pilot cells, therefore the only gap actually experienced was a fewer number of individual cell temperature readings during the period when quarterly inspections were not performed, and (2) Sixteen of the plants have indication of the station battery status through TVA's automation control system (ACS). The single exception is a pumped storage plant which is not automated but has battery system alarms in the control room and has 24-hour operators in the control room. Therefore, although the quarterly inspections were missed, in fact the weekly inspections and the annual inspection continued. Although the weekly inspection was less rigorous than the planned quarterly inspections, it was adequate to minimize the risk to the BPS.

IS THERE A SETTLEMENT AGREEMENT YES ☒ NO ☐

WITH RESPECT TO THE VIOLATION(S), REGISTERED ENTITY

NEITHER ADMITS NOR DENIES IT (SETTLEMENT ONLY) YES ☐  
 ADMITS TO IT YES ☒  
 DOES NOT CONTEST IT (INCLUDING WITHIN 30 DAYS) YES ☒

WITH RESPECT TO THE ASSESSED PENALTY OR SANCTION, REGISTERED ENTITY

ACCEPTS IT/ DOES NOT CONTEST IT YES ☒

**III. DISCOVERY INFORMATION****PRC-005-1, R2.1 (First Violation)****METHOD OF DISCOVERY**

SELF-REPORT  
 SELF-CERTIFICATION<sup>5</sup>  
 COMPLIANCE AUDIT  
 COMPLIANCE VIOLATION INVESTIGATION  
 SPOT CHECK  
 COMPLAINT  
 PERIODIC DATA SUBMITTAL  
 EXCEPTION REPORTING

☐  
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**DURATION DATE(S)**

**10/7/08 (the date the quarterly maintenance was due) until 1/13/09 (when the testing and maintenance was completed)**

**DATE DISCOVERED BY OR REPORTED TO REGIONAL ENTITY 5/14/09**

IS THE VIOLATION STILL OCCURRING

YES ☐ NO ☒

IF YES, EXPLAIN

REMEDIAL ACTION DIRECTIVE ISSUED

YES ☐ NO ☒

PRE TO POST JUNE 18, 2007 VIOLATION

YES ☐ NO ☒

**PRC-005-1, R2.1 (Second Violation)****METHOD OF DISCOVERY**

SELF-REPORT  
 SELF-CERTIFICATION<sup>6</sup>  
 COMPLIANCE AUDIT  
 COMPLIANCE VIOLATION INVESTIGATION  
 SPOT CHECK  
 COMPLAINT  
 PERIODIC DATA SUBMITTAL  
 EXCEPTION REPORTING

☐  
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**DURATION DATE(S)**

**4/30/08 (the date the quarterly maintenance was due) until 6/11/09 (when the applicable battery inspections were completed)**

**DATE DISCOVERED BY OR REPORTED TO REGIONAL ENTITY 5/22/09**

<sup>5</sup> As noted above, in anticipation of self-certification, TVA submitted this violation on SERC's Self Reporting form. For the purposes of penalty determination, the report was considered a Self-Certification.

<sup>6</sup> *Id.*

IS THE VIOLATION STILL OCCURRING

YES ☐ NO ☒

IF YES, EXPLAIN

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

#### IV. MITIGATION INFORMATION

##### **PRC-005-1, R2.1 (First Violation)**

FOR FINAL ACCEPTED MITIGATION PLAN:

MITIGATION PLAN NO.	<b>MIT-07-1902</b>
DATE SUBMITTED TO REGIONAL ENTITY	<b>5/14/09<sup>7</sup></b>
DATE ACCEPTED BY REGIONAL ENTITY	<b>8/20/09</b>
DATE APPROVED BY NERC	<b>8/21/09</b>
DATE PROVIDED TO FERC	<b>8/21/09</b>

IDENTIFY AND EXPLAIN ALL PRIOR VERSIONS THAT WERE ACCEPTED OR REJECTED, IF APPLICABLE

**NONE**

MITIGATION PLAN COMPLETED YES ☒ NO ☐

EXPECTED COMPLETION DATE	<b>6/15/09</b>
EXTENSIONS GRANTED	<b>NA</b>
ACTUAL COMPLETION DATE	<b>6/11/09</b>

DATE OF CERTIFICATION LETTER	<b>6/12/09</b>
CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF	<b>6/11/09</b>

DATE OF VERIFICATION LETTER	<b>11/20/09</b>
VERIFIED COMPLETE BY REGIONAL ENTITY AS OF	<b>6/11/09</b>

ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT RECURRENCE

**TVA completed its inspection of the subject microwave repeater station and returned to compliance on January 13, 2009.**

**In order to understand what caused the violation and to prevent recurrence of the violation, TVA completed a corrective action process to determine the apparent cause of the violation. The cause was determined to be human**

<sup>7</sup> The Mitigation Plan was signed on May 13, 2009.

**error and improper use of TVA's WMS, therefore TVA's action to prevent recurrence was to conduct personnel training on the proper use of the WMS for the individuals using the system.**

**TVA also provided additional training that focused on the importance of verifying that work orders match the work to be performed, that the applicable dates are correct, and that all work has been completed prior to closure of the work order. The training also emphasized that re-issued work orders should reflect the work that should have been performed and the inspection dates of any inadvertently or incorrectly closed work orders. The training would be provided to affected personnel via required reading documents and reinforced by supervisors.**

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

**TVA submitted and SERC reviewed the following evidence in support of its certification that its Mitigation Plan was completed in accordance with its terms:**

- 1. Corrective Action Program showing the record and conclusion of TVA's internal apparent cause analysis;**
- 2. A letter to relevant TVA personnel discussing the violation, its apparent cause and directing solutions to avoid similar occurrences in the future. The letter was required to be signed by the technicians and their supervision attesting they had read and understood the document and the supervisor had reinforced its content;**
- 3. A roster of TVA Personnel Trained lists the personnel that signed the training letter above; and**
- 4. Letters of acknowledgement from each of the individuals responsible for entering and executing work orders acknowledging the training they received on the WMS.**

**PRC-005-1, R2.1 (Second Violation)**

**FOR FINAL ACCEPTED MITIGATION PLAN:**

<b>MITIGATION PLAN NO.</b>	<b>MIT-08-1903</b>
<b>DATE SUBMITTED TO REGIONAL ENTITY</b>	<b>5/22/09<sup>8</sup></b>
<b>DATE ACCEPTED BY REGIONAL ENTITY</b>	<b>8/20/09</b>
<b>DATE APPROVED BY NERC</b>	<b>8/21/09</b>
<b>DATE PROVIDED TO FERC</b>	<b>8/21/09</b>

**IDENTIFY AND EXPLAIN ALL PRIOR VERSIONS THAT WERE ACCEPTED OR REJECTED, IF APPLICABLE**

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<sup>8</sup> The Mitigation Plan was signed on May 21, 2009.

**NONE**

MITIGATION PLAN COMPLETED      YES   ☒      NO   ☐

EXPECTED COMPLETION DATE      **10/1/09**

EXTENSIONS GRANTED      **NA**

ACTUAL COMPLETION DATE      **8/01/09**

DATE OF CERTIFICATION LETTER      **8/24/09**

CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF      **8/1/09**

DATE OF VERIFICATION LETTER      **5/21/10**

VERIFIED COMPLETE BY REGIONAL ENTITY AS OF      **8/1/09**

ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT  
RECURRENCE

**TVA completed its inspection of the subject station batteries restoring compliance on June 1, 2009.**

**In order to understand what the cause of the violation was and to prevent recurrence of the violation TVA completed a corrective action process to determine the apparent cause of the violation. The cause was determined to be human error and therefore actions to prevent recurrence included relevant personnel training.**

**TVA reinstated its original PM plan, including the monthly, quarterly, and annual station battery preventative maintenance activities, and full implementation was achieved by June 1, 2009. A statement was added to all battery preventative maintenance procedures that the maintenance is required for compliance with NERC Reliability Standards and must be completed as specified. This statement was also added to each work order generated for battery maintenance activities. The importance of performing the battery maintenance activities would be discussed in the next Hydro Production Peer team meeting and conveyed to all affected TVA personnel.**

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

**TVA submitted and SERC staff reviewed the following evidence in support of its certification that its Mitigation Plan was completed in accordance with its terms:**

- 1. *Monthly Battery PM - SMP 0615C.pdf, Quarterly Battery PM - SPM 0615B.pdf, and Annual Battery PM - SMP 0615A.pdf, which are copies of***

the revised monthly, quarterly, and annual battery maintenance work procedures that include NERC regulatory compliance statements.

2. *09-029 TVA Production Manager's Peer Team Meeting 082609A.pdf* that is a copy of the agenda of the Production Manager's Peer Team meeting indicating SERC compliance as a topic.
3. *09-029 TVA Apparent Cause 082609.pdf* that is a copy of the completed apparent cause analysis document concerning the failure to implement quarterly battery maintenance.

## V. PENALTY INFORMATION

TOTAL ASSESSED PENALTY OR SANCTION OF **TEN THOUSAND DOLLARS (\$10,000)** FOR **TWO** VIOLATIONS OF **ONE** RELIABILITY STANDARD.

### (1) REGISTERED ENTITY'S COMPLIANCE HISTORY

PRIOR VIOLATIONS OF ANY OF THE INSTANT RELIABILITY STANDARD(S) OR REQUIREMENT(S) THEREUNDER

YES ☒ NO ☐

LIST ANY CONFIRMED OR SETTLED VIOLATIONS AND STATUS

**TVA has a previous Notice of Confirmed Violation and Proposed Penalty or Sanction (NOCV) involving violations of NERC Reliability Standard PRC-005-1, R1 and R2 (NOC-56) that was filed with FERC in Docket No. NP09-36-000 on September 25, 2009. This issue involved two of the local power distributors for which TVA accepted compliance responsibility. TVA self-certified as non-compliant with NERC Reliability Standard PRC-005-1, R1 and R2 on September 1, 2007, as part of its required, annual self-certification of compliance due to be submitted to SERC on September 1, 2007. TVA's self-certification submittal was specific to the compliance status of the TVA Distributors, a group of 159 electric power distribution companies surrounded by and interconnected with TVA's transmission system, some with ownership rights to transmission facilities operated at 100 kV or above (Distributors). TVA has accepted compliance responsibility for the TVA Distributors as a joint registration organization, within the SERC region, and is included on the NERC Compliance Registry as the registered and responsible entity on behalf of these 159 Distributors. TVA stated in its self-certification that a power distributor was in progress of defining the philosophy, procedures, and frequency of testing. In addition, the power distributor also reported that its program to document maintenance and testing scheduling was incomplete and was revising the program to use its management system. The deficiencies pertained to documentation of two (2) of the TVA Distributors. The first Distributor was deemed to have been in violation of PRC-005-1,**



**R1 because the Distributor's Protection System maintenance and testing procedure document did not specify the intervals for maintenance and testing and the basis on which the intervals were determined, for all of its applicable relays. The second Distributor was deemed to be in violation of PRC-005-1, R2 because the Distributor could not produce evidence to confirm that its relevant protective system devices associated with transmission systems were maintained and tested within defined intervals. Specifically, SERC identified the following instances of deficiency: (1) relays were being tested, but the documentation of relay testing was lacking, and (2) the protective systems have been maintained, but documentation of maintenance and basis for testing intervals was missing.**

#### ADDITIONAL COMMENTS

**Although the violation is for the same Registered Entity and involves the same NERC Reliability Standard (PRC-005-1), SERC determined it should not be considered a repeat violation because the scope is unrelated and should not serve as a basis for aggravating the penalty because the prior violations specifically related to individual Distributors and that Mitigation Plan would not have resolved or prevented the instant violation.**

#### PRIOR VIOLATIONS OF OTHER RELIABILITY STANDARD(S) OR REQUIREMENTS THEREUNDER

YES ☐ NO ☒

#### LIST ANY PRIOR CONFIRMED OR SETTLED VIOLATIONS AND STATUS

#### ADDITIONAL COMMENTS

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

FULL COOPERATION YES ☒ NO ☐  
IF NO, EXPLAIN

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

IS THERE A DOCUMENTED COMPLIANCE PROGRAM<sup>9</sup>

YES ☒ NO ☐

EXPLAIN

**TVA's compliance program is documented in its *Business Practice 32*.**

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

**To ensure TVA complies with all applicable NERC Reliability Standard requirements, TVA's Chief Operating Officer (COO) has established a Reliability Standards Compliance Oversight Group (RSCOG). This group provides guidance and oversight of TVA's Reliability Standards compliance program. A Reliability Standards Compliance Working Group (RSCWG) has also been established to provide organizational specific direction and to execute the activities and direction of the RSCOG. RSCOG members are COO designated executive and senior managers of each organization with functional responsibility for compliance with applicable NERC Reliability Standard requirements. Other support organizations may also have members on the RSCOG.**

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

YES ☐ NO ☒

IF YES, EXPLAIN

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

YES ☐ NO ☒

IF YES, EXPLAIN

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<sup>9</sup> SERC considered the existence of TVA's internal compliance program as a neutral factor in determining the penalty.

(6) ANY OTHER MITIGATING FACTORS FOR CONSIDERATION

YES ☒ NO ☐

IF YES, EXPLAIN

**TVA discovered these issues while verifying compliance prior to self-certification and promptly reported and mitigated the issues. TVA provided detailed reports and its personnel were responsive to SERC's requests for additional information.**

(7) ANY OTHER AGGRAVATING FACTORS FOR CONSIDERATION

YES ☐ NO ☒

IF YES, EXPLAIN

(8) ANY OTHER EXTENUATING CIRCUMSTANCES

YES ☐ NO ☒

IF YES, EXPLAIN

EXHIBITS:

SOURCE DOCUMENT

**TVA Self Report dated May 14, 2009**

**TVA Self Report dated May 22, 2009**

MITIGATION PLAN

**MIT-07-1902 dated May 14, 2009**

**MIT-07-1903 dated May 22, 2009**

CERTIFICATION BY REGISTERED ENTITY

**Completion of MIT-07-1902 dated June 12, 2009**

**Completion of MIT-08-1903 dated August 24, 2009**

VERIFICATION BY REGISTERED ENTITY

**Verification of Completion of MIT-07-1902 dated November 20, 2009**

**Verification of Completion of MIT-08-1903 dated May 21, 2010**

OTHER RELEVANT INFORMATION:

NOTICE OF ALLEGED VIOLATION AND PROPOSED PENALTY OR  
SANCTION ISSUED

DATE: OR N/A ☒

SETTLEMENT DISCUSSIONS COMMENCED

DATE: **9/8/09** OR N/A ☐

NOTICE OF CONFIRMED VIOLATION ISSUED

DATE: OR N/A ☒

SUPPLEMENTAL RECORD INFORMATION

DATE(S) OR N/A ☒

REGISTERED ENTITY RESPONSE CONTESTED

FINDINGS ☐ PENALTY ☐ BOTH ☐ NO CONTEST ☒

HEARING REQUESTED

YES ☐ NO ☒

DATE

OUTCOME

APPEAL REQUESTED

## **Attachment d**

**TVA's Mitigation Plan MIT-07-1902 (first  
violation) submitted May 14, 2009**



# Mitigation Plan Submittal Form

**Please refer to**  
**SERC Guidelines for Mitigation Plan Submission.pdf available at**  
**<http://www.serc1.org/Application/ContentPageView.aspx?ContentId=22>**

Date this Mitigation Plan is being submitted: 5/14/2009

If this Mitigation Plan has already been completed:

- Check this box ☐ and
- Provide the Date of Completion of the Mitigation Plan:

## **Section A: Compliance Notices**

- Section 6.2 of the CMEP<sup>1</sup> 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 2.0.
  - (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

<sup>1</sup> "Uniform Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation;" a copy of the current version approved by the Federal Energy Regulatory Commission is posted on NERC's website.



of submission. Additional violations could be determined 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.
- This submittal form shall be used to provide a required Mitigation Plan for review and approval by SERC and NERC.
  - The Mitigation Plan shall be submitted to SERC 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 violations of one Reliability Standard. A separate mitigation plan is required to address violations with respect to each additional Reliability Standard, as applicable.
  - If the Mitigation Plan is approved by SERC and NERC, a copy of this Mitigation Plan will be provided to the Federal Energy Regulatory Commission in accordance with applicable Commission rules, regulations and orders.
  - SERC 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.

## **Section B: Registered Entity Information**

### **B.1 Identify your organization:**

Company Name: Tennessee Valley Authority  
Company Address: 1101 Market Street, MR5K-C, Chattanooga, TN  
37402  
NERC Compliance Registry ID *[if known]*: NCR 01151

### **B.2 Identify the individual in your organization who will serve as the Contact to SERC regarding this Mitigation Plan. This person shall be technically knowledgeable regarding this Mitigation Plan and authorized to respond to SERC regarding this Mitigation Plan.**

Name: Russell C. Hardison  
Title: Manager, Transmission Support Department  
Email: rchardison@tva.gov  
Phone: 423-751-8300





**Section C: Identity of Reliability Standard Violations Associated with this Mitigation Plan**

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

C.1 Standard: PRC-005-1  
*[Identify by Standard Acronym (e.g. FAC-001-1)]*

C.2 Requirement(s) violated and violation dates:  
*[Enter information in the following Table]*

NERC Violation ID # [if known]	SERC Violation ID # [if known ]	Requirement Violated (e.g. R3.2)	Violation Date <sup>(*)</sup>
SERCYYYYnnnnn	YYYY-nnn	R2.1	05/14/2009

(\*) Note: The Violation Date shall be: (i) the date that the violation occurred; (ii) the date that the violation was self-reported; or (iii) the date that the violation has been deemed to have occurred on by SERC. Questions regarding the date to use should be directed to SERC.

C.3 Identify the cause of the violation(s) identified above:

Due to an inadvertant human performance error, TVA did not conduct a quarterly test for part of a Protection System (a relay communication circuit at a microwave repeater station) at its South Jackson Microwave (MW) Station, consistent with TVA's applicable testing intervals (per NERC Reliability Standard PRC-005-1, R2.1). The protection circuit in question is a backup circuit for the Montgomery to Wilson 500-kV "A" Set Pilot Circuit.

TVA conducts quarterly tests of its Protection System Communication Stations. TVA's Work Management System (WMS) generates work orders for each inspection of its Protection Systems for each fiscal year (October 1- September 30). In FY2008, a work order was generated for South Jackson MW for April 2008 (before the protection circuit was placed in service). That work order was



inadvertently closed by TVA personnel, thereby eliminating the work order for the quarterly inspection. Upon discovering the lack of a work order for the April 2008 quarterly inspection, another work order was manually generated with the next available quarterly inspection date (October 7, 2008). This incorrect date went unnoticed, as the April 2008 quarterly inspection was completed pursuant to that reissued work order. The July inspection was completed as planned.

When work orders were generated for FY2009, the WMS created another work order for the October 2008 quarterly inspection for South Jackson MW with an inspection date of October 7, 2008. TVA personnel, believing this work order to be duplicative (of the April 2008 quarterly inspection reissued work order with the October 7, 2008 inspection date), incorrectly closed the work order.

This error was detected in preparing documentation for purposes of self-certification of TVA's compliance with Reliability Standard PRC-005-1 due June 1, 2009. The Montgomery to Wilson 500kV Protection System Communication Circuit at South Jackson MW experienced no down time as a result of the missed inspection. Regular monthly switching station inspections were performed at the co-located South Jackson Switching Station, and a thorough inspection was conducted at South Jackson MW in January 2009. The omitted inspection did not pose an adverse impact to the reliability of the Bulk Electric System.

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

C.4 **[Optional]** Provide any relevant additional information regarding the violations associated with this Mitigation Plan:

TVA TO conducts approximately 5,800 similar station inspections of Protection Systems during a fiscal year. TVA has conducted a record review and found no other instances of omitted inspections during the applicable reporting period.

[Provide your response here; additional detailed information may be provided as an attachment as necessary]



## **Section D: Details of Proposed Mitigation Plan**

### **Mitigation Plan Contents**

- D.1 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 violations identified above in Part C.2 of this form:

As noted above, TVA conducted a thorough inspection at South Jackson MW in January 2009, and the station has returned to its regular schedule of quarterly inspections.

TVA's mitigation plan will consist of two primary activities.

1. For TVA personnel who schedule and monitor the transmission maintenance activities, TVA will use its corrective action process to address the human performance error. The focus of this process will be to ensure proper closure of work orders, including the importance of documentation of completion of inspections and incorporating the correct dates of any re-issued work orders. Any improvements to the work order process and TVA's WMS will be immediately implemented.
2. Training will focus on the importance of verifying that work orders match the work to be performed, that the applicable dates are correct, and that all work has been completed prior to closure of the work order. In addition, training will emphasize that re-issued work orders should reflect the work that should have been performed and the inspection dates of any inadvertently or incorrectly closed work orders. Training will be provided to affected personnel via required reading documents and reinforced by supervisors.

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

***Check this box ☐ and proceed to Section E of this form if this Mitigation Plan, as set forth in Part D.1, has already been completed; otherwise respond to Part D.2, D.3 and, optionally, Part D.4, below.***

### **Mitigation Plan Timeline and Milestones**

- D.2 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: June 15, 2009



D.3 Enter Milestone Activities, with completion dates, that your organization is proposing for this Mitigation Plan:

Milestone Activity	Proposed Completion Date* (shall not be more than 3 months apart)
Corrective Action Process	June 15, 2009
Additional training	June 15, 2009
Return South Jackson to inspection schedule	completed

(\*) Note: 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 for not completing work associated with accepted milestones.

[Note: Provide your response here; additional detailed information may be provided as an attachment as necessary]



### **Additional Relevant Information (Optional)**

- D.4 If you have any relevant additional information that you wish to include regarding the mitigation plan, milestones, milestones dates and completion date proposed above you may include it here:

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

### **Section E: Interim and Future Reliability Risk**

***Check this box ☐ and proceed and respond to Part E.2 and E.3, below, if this Mitigation Plan, as set forth in Part D.1, has already been completed.***

#### **Abatement of Interim BPS Reliability Risk**

- E.1 While your organization is implementing the Mitigation Plan proposed in Part D of this form, 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, or may be, known or anticipated: (i) identify any such risks or impacts; and (ii) discuss any actions that your organization is planning to take or is proposing as part of the Mitigation Plan to mitigate any increased risk to the reliability of the bulk power system while the Mitigation Plan is being implemented:

Upon review of other work orders and no other evidence of improper closure and re-issue of work orders, this appears to be an isolated incident. There is no risk to the reliability of the Bulk Power System during this mitigation plan.

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

#### **Prevention of Future BPS Reliability Risk**

- E.2 Describe how successful completion of the Mitigation Plan as laid out in Part D of this form will prevent or minimize the probability that your organization incurs further violations of the same or similar reliability standards requirements in the future:



[Provide your response here; additional detailed information may be provided as an attachment as necessary]

- E.3 Your organization may be taking or planning other action, beyond that listed in the Mitigation Plan, as proposed in Part D.1, to prevent or minimize the probability of incurring further violations of the same or similar standards requirements listed in Part C.2, or of other reliability standards. If so, identify and describe any such action, including milestones and completion dates:

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

**Continued on Next Page**



## Section F: Authorization

An authorized individual must sign and date this Mitigation Plan Submittal Form. By doing so, this individual, on behalf of your organization:

- a) Submits the Mitigation Plan, as laid out in Section D of this form, to SERC for acceptance by SERC and approval by NERC, and
- b) If applicable, certifies that the Mitigation Plan, as laid out in Section D of this form, was completed (i) as laid out in Section D of this form and (ii) on or before the date provided as the 'Date of Completion of the Mitigation Plan' on this form, and
- c) Acknowledges:
  1. I am Vice President, Transmission Operations and Maintenance of Tennessee Valley Authority.
  2. I am qualified to sign this Mitigation Plan on behalf of [Tennessee Valley Authority.
  3. I have read and understand Tennessee Valley Authority obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4(C) (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation" (NERC CMEP)).
  4. I have read and am familiar with the contents of the foregoing Mitigation Plan.
  5. Tennessee Valley Authority agrees to be bound by, and comply with, the Mitigation Plan, including the timetable completion date, as approved by SERC and approved by NERC.

**Authorized Individual Signature**

A handwritten signature in black ink, appearing to read 'Ronald H. Rogers', is written over a horizontal line.

(Electronic signatures are acceptable, see CMEP)

Name (Print): Ronald H. Rogers

Title: VP, Transmission O&M

Date: 5/13/2009



**Section G: Comments and Additional Information**

You may use this area to provide comments or any additional relevant information not previously addressed in this form.

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

**Submittal Instructions:**

Please convert the completed and signed document to a text-searchable Adobe .pdf document using the following naming convention:

[(MP Entity Name (STD-XXX) MM-DD-YY).pdf]

Email the pdf file to [serccomply@serc1.org](mailto:serccomply@serc1.org).

Please direct any questions regarding completion of this form to:

Ken Keels  
Manager, Compliance Enforcement  
SERC Reliability Corporation  
704-357-7372  
[kkeels@serc1.org](mailto:kkeels@serc1.org)



## **Attachment e**

### **TVA's Mitigation Plan MIT-08-1903 (second violation) submitted May 22, 2009**



# Mitigation Plan Submittal Form

**Please refer to**  
**SERC Guidelines for Mitigation Plan Submission.pdf available at**  
**<http://www.serc1.org/Application/ContentPageView.aspx?ContentId=22>**

Date this Mitigation Plan is being submitted: 5/22/09

If this Mitigation Plan has already been completed:

- Check this box ☐ and
- Provide the Date of Completion of the Mitigation Plan:

## **Section A: Compliance Notices**

- Section 6.2 of the CMEP<sup>1</sup> 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 2.0.
  - (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

<sup>1</sup> "Uniform Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation;" a copy of the current version approved by the Federal Energy Regulatory Commission is posted on NERC's website.



of submission. Additional violations could be determined 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.
- This submittal form shall be used to provide a required Mitigation Plan for review and approval by SERC and NERC.
  - The Mitigation Plan shall be submitted to SERC 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 violations of one Reliability Standard. A separate mitigation plan is required to address violations with respect to each additional Reliability Standard, as applicable.
  - If the Mitigation Plan is approved by SERC and NERC, a copy of this Mitigation Plan will be provided to the Federal Energy Regulatory Commission in accordance with applicable Commission rules, regulations and orders.
  - SERC 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.

## **Section B: Registered Entity Information**

### **B.1 Identify your organization:**

Company Name: Tennessee Valley Authority  
Company Address: 1101 Market Street - MR 3H, Chattanooga, TN  
37402  
NERC Compliance Registry ID *[if known]*: NCR01151

### **B.2 Identify the individual in your organization who will serve as the Contact to SERC regarding this Mitigation Plan. This person shall be technically knowledgeable regarding this Mitigation Plan and authorized to respond to SERC regarding this Mitigation Plan.**

Name: David Thompson  
Title: Principal Engineer  
Email: dwthompson@tva.gov  
Phone: 423-751-2961



**Section C: Identity of Reliability Standard Violations Associated with this Mitigation Plan**

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

C.1 Standard: PRC-005-1  
*[Identify by Standard Acronym (e.g. FAC-001-1)]*

C.2 Requirement(s) violated and violation dates:  
*[Enter information in the following Table]*

NERC Violation ID # [if known]	SERC Violation ID # [if known ]	Requirement Violated (e.g. R3.2)	Violation Date <sup>(*)</sup>
SERCYYYYnnnnn	YYYY-nnn	R 2.1	04/30/2008

(\*) Note: The Violation Date shall be: (i) the date that the violation occurred; (ii) the date that the violation was self-reported; or (iii) the date that the violation has been deemed to have occurred on by SERC. Questions regarding the date to use should be directed to SERC.

C.3 Identify the cause of the violation(s) identified above:

TVA's River Operations Group (RiverOps) is responsible for maintaining and testing all batteries located within all hydroelectric plant powerhouses, including those batteries utilized for transmission system operations. Among other things, the batteries are used to provide power for generator and transmission relays.

To comply with Reliability Standard PRC-005, a preventative maintenance and testing plan for station batteries is in place through TVA's Standardized Maintenance Program and managed through TVA's Enterprise Maintenance Planning and Control work management system, which generates work orders for each maintenance activity. Prior to March 2008, the preventive maintenance plan consisted of four categories of activities -- weekly, monthly, quarterly, and



annual. In March 2008, TVA reevaluated its preventative maintenance procedures, and determined to add battery preventative maintenance tasks to the weekly powerhouse maintenance activities and eliminate the monthly battery maintenance activities. The quarterly and annual battery maintenance activities were to be continued. Due to a human performance error, however, when the work management system was updated to reflect removal of the monthly maintenance activities, the quarterly battery preventative maintenance activities were also removed. As a result, no work orders were generated for monthly and quarterly maintenance activities at the hydroelectric plant powerhouses for the period April 2008 through March 2009, and those activities were not conducted as required by Reliability Standard PRC-005, Requirement 2. This error was detected in preparing documentation for purposes of self-certification of TVA's compliance with Reliability Standards due June 1, 2009..

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

**C.4 [Optional]** Provide any relevant additional information regarding the violations associated with this Mitigation Plan:

The omitted monthly and quarterly maintenance activities did not pose an adverse impact to the bulk electric system or generator protection. TVA conducted its annual maintenance activities (thorough testing of all battery cells) at each station in January 2009. Weekly maintenance activities, including visual checks of battery cells and overall bank voltage and current were conducted and no problems identified. In addition, TVA's batteries are equipped with an alarming device which would have alerted Hydro Plant Technicians of any potential problems. The batteries functioned as designed during this period.

[Provide your response here; additional detailed information may be provided as an attachment as necessary]



## **Section D: Details of Proposed Mitigation Plan**

### **Mitigation Plan Contents**

- D.1 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 violations identified above in Part C.2 of this form:

TVA has reinstated its original preventive maintenance plan, including the monthly quarterly, and annual station battery preventative maintenance activities, and full implementation will be achieved by June 1, 2009. A statement will be added to all battery preventative maintenance procedures that the maintenance is required for compliance with NERC Reliability Standards and must be completed as specified. This statement will also be added to each work order generated for battery maintenance activities. The importance of performing the battery maintenance activities will be discussed in the next Hydro Production Peer Team meeting and conveyed to all affected TVA personnel. A root cause analysis will be undertaken to determine the reason the quarterly battery maintenance procedures were discontinued.  
[Provide your response here; additional detailed information may be provided as an attachment as necessary]

***Check this box ☐ and proceed to Section E of this form if this Mitigation Plan, as set forth in Part D.1, has already been completed; otherwise respond to Part D.2, D.3 and, optionally, Part D.4, below.***

### **Mitigation Plan Timeline and Milestones**

- D.2 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:  
October 1, 2009
- D.3 Enter Milestone Activities, with completion dates, that your organization is proposing for this Mitigation Plan:

Milestone Activity	Proposed Completion Date* (shall not be more than 3 months apart)
Reinstate the monthly and quarterly maintenance procedures	6-1-09



Add statement of criticality to the maintenance procedures	7-1-09
Conduct root cause analysis of events	10-1-09
Discussion of the maintenance procedure in Production Manager's meeting	10-1-09

(\*) Note: 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 for not completing work associated with accepted milestones.

[Note: Provide your response here; additional detailed information may be provided as an attachment as necessary]



### **Additional Relevant Information (Optional)**

- D.4 If you have any relevant additional information that you wish to include regarding the mitigation plan, milestones, milestones dates and completion date proposed above you may include it here:

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

### **Section E: Interim and Future Reliability Risk**

***Check this box ☐ and proceed and respond to Part E.2 and E.3, below, if this Mitigation Plan, as set forth in Part D.1, has already been completed.***

#### **Abatement of Interim BPS Reliability Risk**

- E.1 While your organization is implementing the Mitigation Plan proposed in Part D of this form, 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, or may be, known or anticipated: (i) identify any such risks or impacts; and (ii) discuss any actions that your organization is planning to take or is proposing as part of the Mitigation Plan to mitigate any increased risk to the reliability of the bulk power system while the Mitigation Plan is being implemented:

There is no risk to the bulk power system concerning this mitigation plan during the time the mitigation plan is being implemented. As discussed above, TVA completed the annual maintenance activities in January and the monthly and quarterly preventative maintenance procedures will be reinstated by 6-1-09.  
[Provide your response here; additional detailed information may be provided as an attachment as necessary]

#### **Prevention of Future BPS Reliability Risk**

- E.2 Describe how successful completion of the Mitigation Plan as laid out in Part D of this form will prevent or minimize the probability that your organization incurs further violations of the same or similar reliability standards requirements in the future:





The preventative maintenance procedure will contain a permanent statement concerning the importance of completing the maintenance activities. A discussion item will be included in the Hydro Production Peer Team meeting concerning this topic.

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

- E.3 Your organization may be taking or planning other action, beyond that listed in the Mitigation Plan, as proposed in Part D.1, to prevent or minimize the probability of incurring further violations of the same or similar standards requirements listed in Part C.2, or of other reliability standards. If so, identify and describe any such action, including milestones and completion dates:

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

**Continued on Next Page**



## Section F: Authorization

An authorized individual must sign and date this Mitigation Plan Submittal Form. By doing so, this individual, on behalf of your organization:

- a) Submits the Mitigation Plan, as laid out in Section D of this form, to SERC for acceptance by SERC and approval by NERC, and
- b) If applicable, certifies that the Mitigation Plan, as laid out in Section D of this form, was completed (i) as laid out in Section D of this form and (ii) on or before the date provided as the 'Date of Completion of the Mitigation Plan' on this form, and
- c) Acknowledges:
  1. I am Chief Operating Officer of Tennessee Valley Authority].
  2. I am qualified to sign this Mitigation Plan on behalf of Tennessee Valley Authority.
  3. I have read and understand Tennessee Valley Authority obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4(C) (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation" (NERC CMEP)).
  4. I have read and am familiar with the contents of the foregoing Mitigation Plan.
  5. Tennessee Valley Authority agrees to be bound by, and comply with, the Mitigation Plan, including the timetable completion date, as approved by SERC and approved by NERC.

**Authorized Individual Signature**

(Electronic signatures are acceptable; see CMEP)

Name (Print): William R. McCollum  
Title: Chief Operating Officer  
Date: 5/21/2009



**Section G: Comments and Additional Information**

You may use this area to provide comments or any additional relevant information not previously addressed in this form.

[Provide your response here; additional detailed information may be provided as an attachment as necessary]

**Submittal Instructions:**

Please convert the completed and signed document to a text-searchable Adobe .pdf document using the following naming convention:

[(MP Entity Name (STD-XXX) MM-DD-YY).pdf]

Email the pdf file to [serccomply@serc1.org](mailto:serccomply@serc1.org).

Please direct any questions regarding completion of this form to:

Ken Keels  
Manager, Compliance Enforcement  
SERC Reliability Corporation  
704-357-7372  
[kkeels@serc1.org](mailto:kkeels@serc1.org)

## **Attachment f**

### **TVA's Certification of Mitigation Plan Completion of MIT-07-1902 (first violation) dated June 12, 2009**



## **Certification of a Completed Mitigation Plan**

### **SERC Reliability Corporation Violation Mitigation Plan Closure Form**

Name of Registered Entity submitting certification: Tennessee Valley Authority

Date of Certification: 6/10/2009

Name of Standard and the Requirement(s) of mitigated violation(s): PRC-005-1  
- Transmission and Generation Protection System Maintenance and Testing.  
Requirement R2.1.

SERC Tracking Number (contact SERC if not known): 09-027

NERC Violation ID Number (if assigned):

**Date of completion of the Mitigation Plan:** 6/11/2009

Summary of all actions described in Part D of the relevant mitigation plan: TVA used its corrective action process to address the related human performance error with TVA personnel who schedule and monitor transmission maintenance activities. All affected personnel have completed the required training. Lessons learned from this event will be reinforced by supervisors.

Description of the information provided to SERC for their evaluation:  
Attachment #1 - Corrective Action Program, document # 172108, recording event and completion of action items. Attachment #2 - Training Letter read and signed by TVA personnel who schedule and monitor the transmission maintenance activities. Attachment #3 - Roster of TVA personnel who signed Training Letter described above.

I certify that the mitigation plan for the above-named violation has been completed on the date shown above. In doing so, I certify that all required mitigation plan actions described in Part D of the relevant mitigation plan have been completed, compliance has been restored, the above-named entity is currently compliant with all of the requirements of the referenced standard, and that all information submitted information is complete and correct to the best of my knowledge.

Name: Tracy A Flippo  
Title: VP - Transmission Operations and Maintenance  
Entity: Tennessee Valley Authority  
Email: taflippo@tva.gov  
Phone: 423-751-2800

Designated Signature Tracy A. Flippo Date 6-12-09

***[NOTE – Closure Form should be signed by same individual that signed Mitigation Plan]***

**(Form Revised August 13, 2008)**

## **Attachment g**

### **TVA's Certification of Mitigation Plan Completion of MIT-08-1903 (second violation) dated August 24, 2009**





Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402-2801

## Certification of a Completed Mitigation Plan

### SERC Reliability Corporation Violation Mitigation Plan Closure Form

Name of Registered Entity submitting certification: Tennessee Valley Authority

Date of Certification: August 26, 2009

Name of Standard and the Requirement(s) of mitigated violation(s): PRC-005-1, Transmission and Generation Protection System Maintenance and Testing, Requirement R 2.1

SERC Tracking Number (contact SERC if not known): 09-029

NERC Violation ID Number (if assigned): N/A

Date of completion of the Mitigation Plan: August 1, 2009

#### Summary of all actions described in Part D of the relevant mitigation plan:

1. TVA (GO - River Operations) has reinstated its' original battery preventative maintenance plan, including the monthly, quarterly, and annual station battery preventative maintenance activities, effective June 1, 2009.
2. Statements were added to the battery preventative maintenance procedures indicating that the maintenance is required for compliance with NERC Reliability Standards and must be completed as specified.
3. The issue of compliance specifically related to PRC-005-1 was discussed during the production Manager's Peer Team meeting held June 4 and 5, 2009.
4. A root cause analysis evaluation of the failure to implement quarterly battery maintenance activity was completed on June 26, 2009.

#### Description of the information provided to SERC for their evaluation:

1. Copies of the revised battery maintenance work orders including NERC regulatory compliance statements are attached.
2. A copy of the agenda of the Production Manager's Peer Team meeting indicating SERC compliance as a topic is attached.
3. A copy of the completed root cause analysis document concerning the failure to implement quarterly battery maintenance is attached.

I certify that the mitigation plan for the above-named violation has been completed on the date shown above. In doing so, I certify that all required mitigation plan actions described in Part D of the relevant mitigation plan have been completed, compliance has been restored, the above-named entity is currently compliant with all of the requirements of the referenced standard, and that all information submitted information is complete and correct to the best of my knowledge.

Name: William R. McCollum  
Title: Chief Operating Officer  
Entity: Tennessee Valley Authority  
Email: wrmccoll@tva.gov  
Phone: 423-751-6016

Designated Signature



Date

8/24/09



## **Attachment h**

**SERC)u Verification of Mitigation Plan  
Completion of MIT-07-1902 (first violation) dated  
November 20, 2009**

**Statement of SERC Reliability Corporation Compliance Staff Regarding  
Completion of Mitigation Plan**

Registered Entity: Tennessee Valley Authority ("TVA")  
SERC Tracking ID: 09-027  
NERC Violation No: SERC200900271  
NERC Mitigation Plan ID: MIT-07-1902  
Standard: PRC-005-1  
Requirement(s): R2.1

**Violation Summary:**

TVA is in violation of PRC-005-1, R2.1 because it failed to perform a quarterly inspection and maintenance of the relay communication circuit at a microwave repeater station. TVA self reported and SERC Compliance Staff confirmed, that TVA skipped one quarterly maintenance interval on one relay (a relay communication circuit at a microwave repeater station) as required by TVA's maintenance and testing program. The failure to complete the required maintenance was due to a series of incorrect personnel decisions to close open work orders they mistakenly believed to be complete. TVA failed to complete a single required quarterly inspection. The duration of the violation was from the date the quarterly maintenance was due on October 7, 2008 until the maintenance was completed on January 13, 2009.

**Mitigation Plan Summary:**

TVA's Mitigation Plan to address the referenced violation was submitted on May 14, 2009 and was accepted by SERC on August 20, 2009 and approved by NERC on August 21, 2009. The Mitigation Plan is identified as MIT-07-1902 and was submitted as non-public information to FERC on August 21, 2009 in accordance with FERC orders.

TVA immediately completed its inspection of the subject microwave repeater station restoring compliance on January 13, 2009. In order to understand what the cause of the violation was and to prevent recurrence of the violation TVA completed a corrective action process to determine the apparent cause of the violation. The cause was determined to be human error and therefore actions to prevent recurrence included relevant personnel training.

**SERC's Monitoring of Registered Entity's Mitigation Plan Progress:**

SERC Reliability Corporation Compliance staff ("SERC staff") monitors the Registered Entity's progress towards completion of its Mitigation Plans in accordance with Section 6.0 of the uniform Compliance Monitoring and Enforcement Program, ("CMEP"). Pursuant to the CMEP, Registered Entities are required to establish implementation

milestones no more than three (3) months apart. SERC staff solicits quarterly reports from all Registered Entities with open mitigation plans to monitor the progress on completion of milestones. SERC staff also produces and reviews daily Mitigation Plan status reports highlighting Mitigation Plans that are nearing the scheduled completion date. If the Registered Entity fails to complete its Mitigation Plan according to schedule, appropriate additional enforcement action is initiated to assure compliance is attained.

**Mitigation Plan Completion Review Process:**

TVA certified on June 12, 2009 that the subject Mitigation Plan was completed on June 11, 2009. A SERC compliance staff member reviewed the evidence submitted in a manner similar to a compliance audit. That action was followed by another compliance staff member's peer review of the initial conclusion.

**Evidence Reviewed:**

TVA submitted and SERC staff reviewed the following evidence in support of its certification that its Mitigation Plan was completed in accordance with its terms:

- "Attachment #1 - Corrective Action Program.pdf" showing the record and conclusion of TVA's internal apparent cause analysis.
- "Attachment #2 - Training Letter.pdf" a letter to relevant TVA personnel discussing the violation, its apparent cause and directing solutions to avoid similar occurrences in the future. The letter was required to be signed by the technicians and their supervision attesting they had read and understood the document and the supervisor had reinforced its content.
- "Attachment #3 - Roster of TVA Personnel Trained.pdf" lists the personnel that signed the training letter above.

**Conclusion:**

On November 20, 2009 SERC Reliability Corporation Compliance Staff ("SERC Staff") completed its review of the evidence submitted by TVA in support of its Certification of Completion of the subject Mitigation Plan. Based on its review of the evidence submitted, SERC Staff verifies that, in its professional judgment, all required actions in the Mitigation Plan have been completed and TVA is in compliance with the subject Reliability Standard Requirements.

This Statement, along with the subject Mitigation Plan, may become part of a public record upon final disposition of the possible violation.

**Respectfully Submitted,**

Mark Ladrow, Senior Compliance Engineer  
Kevin Berent, Registration and Certification

## **Attachment i**

### **SERC's Verification of Mitigation Plan Completion of MIT-08-1903 second violation dated May 21, 2010**

**Statement of SERC Reliability Corporation Compliance Staff Regarding  
Completion of Mitigation Plan**

Registered Entity:	Tennessee Valley Authority ("TVA")
SERC Tracking ID:	09-029
NERC Violation No:	SERC200900273
NERC Mitigation Plan ID:	MIT-08-1903
Standard:	PRC-005-1
Requirement(s):	R2.1

**Violation Summary:**

TVA is in violation of PRC-005-1, R2.1 because it does not have "[e]vidence Protection System devices were maintained and tested within the defined intervals" beginning in April 2008 and continuing until June 2009 for the batteries in 17 hydroelectric generating facilities. Each plant missed 4 quarterly inspections: April 2008, July 2008, October 2008 and March 2009. Quarterly testing resumed beginning June 2009. Early 2008, TVA changed its Protective System Maintenance procedures covering its hydro-electric facilities to collapse monthly preventative maintenance (PM) into its weekly PM routine so that battery PM would occur at weekly, quarterly, and annual intervals. When entering the intended changes into its PM scheduling software, TVA inadvertently deleted quarterly PM activities and therefore no quarterly maintenance work orders were generated and the maintenance was not performed for three quarters in 2008 (April, July, October) and the first quarter in 2009. The quarterly PM was completed in January 2009 when the concurrent annual inspection was performed. Seventeen hydro plants were affected with a total generating capacity of approximately 4,600 MW or 13% of TVA's total generating capability and the only deviation from TVA's scheduled maintenance was the inadvertent elimination of quarterly inspections. TVA continued to conduct weekly and annual inspections as required by its maintenance program.

**Mitigation Plan Summary:**

TVA's Mitigation Plan to address the referenced violation was submitted on May 22, 2009 and was accepted by SERC on August 20, 2009 and approved by NERC on August 21, 2009. The Mitigation Plan is identified as MIT-08-1903 and was submitted as non-public information to FERC on August 21, 2009 in accordance with FERC orders.

TVA completed its inspection of the subject station batteries restoring compliance on June 1, 2009. In order to understand what the cause of the violation was and to prevent recurrence of the violation TVA completed a corrective action process to determine the apparent cause of the violation. The cause was determined to be human error and therefore actions to prevent recurrence included relevant personnel training.

**SERC's Monitoring of Registered Entity's Mitigation Plan Progress:**

SERC Reliability Corporation Compliance Staff ("SERC Staff") monitors the Registered Entity's progress towards completion of its Mitigation Plans in accordance with Section 6.0 of the uniform Compliance Monitoring and Enforcement Program, ("CMEP").

Pursuant to the CMEP, Registered Entities are required to establish implementation milestones no more than three (3) months apart. SERC Staff solicits quarterly reports from all Registered Entities with open mitigation plans to monitor the progress on completion of milestones. SERC Staff also produces and reviews daily Mitigation Plan status reports highlighting Mitigation Plans that are nearing the scheduled completion date. If the Registered Entity fails to complete its Mitigation Plan according to schedule, appropriate additional enforcement action is initiated to assure compliance is attained.

**Mitigation Plan Completion Review Process:**

TVA certified on August 24, 2009 that the subject Mitigation Plan was completed on August 1, 2009. A SERC compliance staff member reviewed the evidence submitted in a manner similar to a compliance audit. That action was followed by another compliance staff member's peer review of the initial conclusion.

**Evidence Reviewed:**

TVA submitted and SERC Staff reviewed the following evidence in support of its certification that its Mitigation Plan was completed in accordance with its terms:

- "Monthly Battery PM - SMP 0615C.pdf", "Quarterly Battery PM - SPM 0615B.pdf", "Annual Battery PM - SMP 0615A.pdf" that are copies of the revised monthly, quarterly, and annual battery maintenance work procedures that include NERC regulatory compliance statements.
- "09-029 TVA Production Manager's Peer Team Meeting 082609A.pdf" that is copy of the agenda of the Production Manager's Peer Team meeting indicating SERC compliance as a topic.
- "09-029 TVA Apparent Cause 082609.pdf" that is a copy of the completed apparent cause analysis document concerning the failure to implement quarterly battery maintenance.

**Conclusion:**

On May 21, 2010 SERC Reliability Corporation Compliance staff ("SERC staff") completed its review of the evidence submitted by TVA in support of its Certification of Completion of the subject Mitigation Plan. Based on its review of the evidence submitted, SERC staff verifies that, in its professional judgment, all required actions in the Mitigation Plan have been completed and TVA is in compliance with the subject Reliability Standard Requirements.

This Statement, along with the subject Mitigation Plan, may become part of a public record upon final disposition of the possible violation.



**Respectfully Submitted,**  
Mark Ladrow, Senior Compliance Engineer  
Kevin Berent, Registration and Certification

**Attachment j**

**Notice of Filing**



UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Tennessee Valley Authority

Docket No. NP10-\_\_\_\_-000

NOTICE OF FILING  
September 30, 2010

Take notice that on September 30, 2010, the North American Electric Reliability Corporation (NERC) filed a Notice of Penalty regarding Tennessee Valley Authority in the SERC Reliability Corporation region.

Any person desiring to intervene or to protest this filing must file in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211, 385.214). Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a notice of intervention or motion to intervene, as appropriate. Such notices, motions, or protests must be filed on or before the comment date. On or before the comment date, it is not necessary to serve motions to intervene or protests on persons other than the Applicant.

The Commission encourages electronic submission of protests and interventions in lieu of paper using the "eFiling" link at <http://www.ferc.gov>. Persons unable to file electronically should submit an original and 14 copies of the protest or intervention to the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426.

This filing is accessible on-line at <http://www.ferc.gov>, using the "eLibrary" link and is available for review in the Commission's Public Reference Room in Washington, D.C. There is an "eSubscription" link on the web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov), or call (866) 208-3676 (toll free). For TTY, call (202) 502-8659.

Comment Date: [BLANK]

Kimberly D. Bose,  
Secretary