

February 28, 2017

VIA ELECTRONIC FILING

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

**Re: NERC Full Notice of Penalty regarding Alabama Power Company,
FERC Docket No. NP17-_-000**

Dear Ms. Bose:

The North American Electric Reliability Corporation (NERC) hereby provides this Notice of Penalty¹ regarding Alabama Power Company (APC), NERC Registry ID# NCR01166,² with information and details regarding the nature and resolution of the violations³ discussed in detail in the Settlement Agreement attached hereto (Attachment A), in accordance with the Federal Energy Regulatory Commission's (Commission or FERC) rules, regulations, and orders, as well as NERC's Rules of Procedure including Appendix 4C (NERC Compliance Monitoring and Enforcement Program (CMEP)).⁴

¹ *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards* (Order No. 672), III FERC Stats. & Regs. ¶ 31,204 (2006); *Notice of New Docket Prefix "NP" for Notices of Penalty Filed by the North American Electric Reliability Corporation*, Docket No. RM05-30-000 (February 7, 2008). See also 18 C.F.R. Part 39 (2016). *Mandatory Reliability Standards for the Bulk-Power System*, FERC Stats. & Regs. ¶ 31,242 (2007) (Order No. 693), *reh'g denied*, 120 FERC ¶ 61,053 (2007) (Order No. 693-A). See 18 C.F.R § 39.7(c)(2).

² APC was included on the NERC Compliance Registry as a Distribution Provider, Generator Owner, and Transmission Owner (TO) on May 31, 2007.

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

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

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NERC Notice of Penalty
 Alabama Power Company
 February 28, 2017
 Page 2

NERC is filing this Notice of Penalty with the Commission because SERC Reliability Corporation (SERC) and APC have entered into a Settlement Agreement to resolve all outstanding issues arising from SERC’s determination and findings of the violations of FAC-003-3 R2 and FAC-009-1 R1.

According to the Settlement Agreement, executed January 19, 2017, APC admits the violations and has agreed to the assessed penalty of two hundred fifty thousand dollars (\$250,000), in addition to other remedies and actions to mitigate the instant violations and facilitate future compliance under the terms and conditions of the Settlement Agreement.

Statement of Findings Underlying the Violation

This Notice of Penalty incorporates the findings and justifications set forth in the Settlement Agreement, by and between SERC and APC. The details of the findings and basis for the penalty are set forth in the Settlement Agreement and herein. This Notice of Penalty filing contains the basis for approval of the Settlement Agreement by the NERC Board of Trustees Compliance Committee (NERC BOTCC).

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

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

NERC Violation ID	Standard	Req	VRF/ VSL	Applicable Function(s)	Discovery Method* Date	Violation Start-End Date	Risk	Penalty Amount
SERC2016015498	FAC-003-3	R2	High/ Severe	TO	SR 2/2/2016	7/18/2015 – 7/19/2015	Serious	\$250,000
SERC2016015499	FAC-009-1	R1	Medium/ Lower		SR 2/2/2016	6/18/2007 – 7/20/2015		

SERC2016015498 FAC-003-3 R2- OVERVIEW

On February 2, 2016, APC submitted a Self-Report stating that it was in noncompliance with FAC-003-3 R2. APC identified a tree that had encroached the minimum vegetation clearance distance (MVCD) of a

NERC Notice of Penalty
Alabama Power Company
February 28, 2017
Page 3

230 kV transmission line, which caused a Sustained Outage of the line on July 18, 2015. APC removed the tree on July 19, 2015.

After the outage began, APC dispatched a line crew and aerial patrol to investigate, but the crews were unable to determine the cause before dark. The line remained out of service overnight, and the patrols resumed the next morning. The next day the line crew discovered the tree that had caused the Sustained Outage and removed it, ending the encroachment. APC observed the tree to have encroached the MVCD in real-time, constituting a violation of FAC-003-3.

The root cause of this violation was a human performance failure by APC's employees.⁵ APC's vegetation management strategy included performing annual vegetation inspections and implementing corrective actions to address identified issues. APC last mowed the right of way beneath the line in 2010 and performed spraying in 2008. APC conducted a ground-based inspection of the line on May 17, 2014, and aerial inspections of the line on October 15, 2014, and June 4, 2015. Although the tree at issue could have entered the MVCD as early as two years prior to the outage, APC failed to identify any concerns with line clearances during its inspections.

SERC determined that APC did not manage vegetation to prevent encroachment into the MVCD of a line, which was not an element of an Interconnection Reliability Operating Limit (IROL). APC observed the encroachment into the MVCD in real-time and incurred a sustained outage, but did not lose generation or load because of the outage.

SERC determined that this violation posed a serious risk to the reliability of the bulk power system (BPS). Attachment AB includes the facts regarding the violation that SERC considered in its risk assessment.

APC submitted its Mitigation Plan designated SERCMIT012447 to address the referenced violation on November 17, 2016. Attachment AB includes a description of the mitigation activities APC took to address this violation. A copy of the Mitigation Plan is included as Attachment B2.

SERC verified on December 9, 2016, that APC had completed all mitigation activities on May 5, 2016. Attachment AB provides specific information on SERC's verification of APC's completion of the activities.

⁵ The FAC-009-1 R1 violation, described below, also contributed to this violation.

NERC Notice of Penalty
Alabama Power Company
February 28, 2017
Page 4

SERC2016015499 FAC-009-1 R1- OVERVIEW

On February 2, 2016, APC submitted a Self-Report stating that it was in noncompliance with FAC-008-3 R6. APC developed a Facility Rating for a 230 kV transmission line that was not consistent with its Facility Ratings Methodology. SERC later determined that the violation extended back to when FAC-009-1 R1 was effective and enforceable.

As part of its investigation into the cause of the July 18, 2015, Sustained Outage, APC discovered that the actual line clearances in the field were different from design, and thus APC had been using an incorrect Facility Rating that was not consistent with its Facility Ratings Methodology. APC should have identified and corrected the incorrect Facility Rating in response to a 2010 NERC Alert,⁶ but failed to do so.

The root cause of this violation was APC's inadequate internal procedures for reviewing field modifications for potential impacts to Facility Ratings, and a missed opportunity to identify the issue as part of the 2010 NERC Alert due to confusion regarding the demarcation point of changes in responsibility between geographic divisions within APC. APC had relocated a transmission tower in 1999 without recalculating the Facility Rating to account for the ground clearance beneath the low point of the extended span. APC also failed to include the affected portion of the line in its NERC Alert assessment process to identify the clearance issue (i.e., incorrect Facility Rating) prior to the outage.

SERC determined that APC failed to establish a Facility Rating for a 230 kV transmission line consistent with the associated Facility Ratings Methodology or documentation for determining its Facility Ratings.

SERC determined that this violation posed a serious risk to the reliability of the BPS. Attachment AC includes the facts regarding the violation that SERC considered in its risk assessment.

APC submitted its Mitigation Plan designated SERCMIT012448 to address the referenced violation on November 17, 2016. Attachment AC includes a description of the mitigation activities APC took to address this violation. A copy of the Mitigation Plan is included as Attachment C2.

SERC verified on December 9, 2016, that APC had completed all mitigation activities on November 28, 2016. Attachment AC provides specific information on SERC's verification of APC's completion of the activities.

⁶ The NERC Alert recommended that transmission and generation owners "... review their current facility ratings methodology to verify the methodology used is based on actual field conditions." NERC's *Recommendation to Industry: Consideration of Actual Field Conditions in Determination of Facility Ratings*, p. 1 (October 7, 2010).

APC is an investor-owned, retail electric service company. Southern Company owns APC's common stock, along with several other retail electric service companies. In addition to the mitigating activities APC performed, Southern Company has agreed to complete the following additional actions to strengthen the Southern Company operating companies' vegetation management programs:

1. Southern Company identified key internal controls for vegetation management and incorporated them into its compliance monitoring and testing program.
2. Southern Company will complete a pilot program to assess the effectiveness of photogrammetric detection and ranging (PhoDAR) in a vegetation management application. Southern Company will share its pilot program results with the North American Transmission Forum Vegetation Management Practices Group by the end of Q2 2017.
3. Southern Company's reliability steering committee, an executive oversight committee, will review all of Southern Company's violations with NERC Reliability Standards and identify trends that may indicate broader compliance vulnerabilities across business units or operating companies.
4. Southern Company will use an existing internal vegetation management committee to identify and effect changes in its operating companies' vegetation management programs to ensure reliability, compliance, and continuous improvement.

Regional Entity's Basis for Penalty

According to the Settlement Agreement, SERC has assessed a penalty of two hundred fifty thousand dollars (\$250,000) for the referenced violations. In reaching this determination, SERC considered the following factors:

5. the instant violations constitute APC's first occurrence of violations of the subject NERC Reliability Standards;
6. APC had an internal compliance program at the time of the violations which SERC considered a mitigating factor,⁷ as discussed in Attachment AA;
7. APC self-reported the violations;⁸
8. APC was cooperative throughout the compliance enforcement process;

⁷ SERC afforded a reduced level of mitigating credit for APC's internal compliance program because of APC's failure, despite the NERC Alert, to recognize the need to update its Facility Rating following the relocation of the transmission tower.

⁸ SERC provided no credit for the FAC-003-3 R2 Self-Report based on the obligation to report vegetation-related Sustained Outages.

NERC Notice of Penalty
Alabama Power Company
February 28, 2017
Page 6

9. APC assumed responsibility for and admitted to the violations;
10. there was no evidence of any attempt to conceal a violation nor evidence of intent to do so;
11. the violations posed a serious risk to the reliability of the BPS, as discussed in Attachments AB and AC;
12. the violations did not result in a loss of load;
13. SERC did not provide APC any credit to the penalty amount for Southern Company's additional actions described above; and
14. there were no other mitigating or aggravating factors or extenuating circumstances that would affect the assessed penalty.

After consideration of the above factors, SERC determined that, in this instance, the penalty amount of two hundred fifty thousand dollars (\$250,000) is appropriate and bears a reasonable relation to the seriousness and duration of the violations.

Statement Describing the Assessed Penalty, Sanction or Enforcement Action Imposed⁹

Basis for Determination

Taking into consideration the Commission's direction in Order No. 693, the NERC Sanction Guidelines and the Commission's July 3, 2008, October 26, 2009 and August 27, 2010 Guidance Orders,¹⁰ the NERC BOTCC reviewed the Settlement Agreement and supporting documentation on February 7, 2017 and approved the Settlement Agreement. In approving the Settlement Agreement, the NERC BOTCC reviewed the applicable requirements of the Commission-approved Reliability Standards and the underlying facts and circumstances of the violations at issue.

For the foregoing reasons, the NERC BOTCC approved the Settlement Agreement and believes that the assessed penalty of two hundred fifty thousand dollars (\$250,000) is appropriate for the violations and circumstances at issue, and is consistent with NERC's goal to promote and ensure reliability of the BPS.

⁹ See 18 C.F.R. § 39.7(d)(4).

¹⁰ *North American Electric Reliability Corporation*, "Guidance Order on Reliability Notices of Penalty," 124 FERC ¶ 61,015 (2008); *North American Electric Reliability Corporation*, "Further Guidance Order on Reliability Notices of Penalty," 129 FERC ¶ 61,069 (2009); *North American Electric Reliability Corporation*, "Notice of No Further Review and Guidance Order," 132 FERC ¶ 61,182 (2010).

NERC Notice of Penalty
Alabama Power Company
February 28, 2017
Page 7

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

Attachments to be Included as Part of this Notice of Penalty

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

- a) Settlement Agreement by and between SERC and APC executed January 19, 2017, included as Attachment A;
 1. Disposition of Violation – Information Common to Instant Violations, included as Attachment AA to the Settlement Agreement;
 2. Disposition of Violation for SERC2016015498, included as Attachment AB to the Settlement Agreement;
 3. Disposition of Violation for SERC2016015499, included as Attachment AC to the Settlement Agreement;
- b) Record documents for the violation of FAC-003-3 R2 (SERC2016015498), included as Attachment B:
 1. APC's Self-Report for FAC-003-3 R2 dated February 2, 2016;
 2. APC's Mitigation Plan designated as SERCMIT012447 submitted November 17, 2016;
 3. APC's Certification of Mitigation Plan Completion dated December 8, 2016;
- c) Record documents for the violation of FAC-009-1 R1 (SERC2016015499), included as Attachment C:
 1. APC's Self-Report for FAC-009-1 R1 dated February 2, 2016;
 2. APC's Mitigation Plan designated as SERCMIT012448 submitted November 17, 2016;
and
 3. APC's Certification of Mitigation Plan Completion dated December 7, 2016.

NERC Notice of Penalty
 Alabama Power Company
 February 28, 2017
 Page 8

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

<p>Gary Taylor* President and Chief Executive Officer SERC Reliability Corporation 3701 Arco Corporate Drive, Suite 300 Charlotte, NC 28273 (704) 940-8205 (704) 357-7914 – facsimile gtaylor@serc1.org</p>	<p>Sonia C. Mendonça* Vice President of Enforcement and Deputy General Counsel North American Electric Reliability Corporation 1325 G Street N.W. Suite 600 Washington, DC 20005 (202) 400-3000 (202) 644-8099 – facsimile sonia.mendonca@nerc.net</p>
<p>Holly A. Hawkins* General Counsel SERC Reliability Corporation 3701 Arco Corporate Drive, Suite 300 Charlotte, NC 28273 (704) 494-7775 (704) 357-7914 – facsimile hhawkins@serc1.org</p>	<p>Edwin G. Kichline* Senior Counsel and Director of Enforcement Oversight North American Electric Reliability Corporation 1325 G Street N.W. Suite 600 Washington, DC 20005 (202) 400-3000 (202) 644-8099 – facsimile edwin.kichline@nerc.net</p>
<p>James M. McGrane* Managing Counsel – Enforcement SERC Reliability Corporation 3701 Arco Corporate Drive, Suite 300 Charlotte, NC 28273 (704) 494-7787 (704) 357-7914 – facsimile jmcgrane@serc1.org</p>	<p>Robert P. Goldfin* Associate Counsel North American Electric Reliability Corporation 1325 G Street N.W. Suite 600 Washington, DC 20005 (202) 644-8037 (202) 644-8099 – facsimile robert.goldfin@nerc.net</p>
<p>Rebecca A. Poulsen* Legal Counsel SERC Reliability Corporation 3701 Arco Corporate Drive, Suite 300 Charlotte, NC 28273 (704) 414-5230 (704) 357-7914 – facsimile rpoulsen@serc1.org</p>	

<p>Matthew W. Bowden* Sr VP & General Counsel Alabama Power Company 600 18th Street North Birmingham, AL 35203 (205) 257-4075 (205) 257-4349 – facsimile mwbowden@southernco.com</p> <p>Helen R. Nalley* Operations Compliance Director Southern Company Services 30 Ivan Allen Jr Blvd NW Atlanta, Georgia 30308 (404) 506-0805 (205) 257-7605 - facsimile hrenalley@southernco.com</p>	<p>*Persons to be included on the Commission’s service list are indicated with an asterisk. NERC requests waiver of the Commission’s rules and regulations to permit the inclusion of more than two people on the service list.</p>
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NERC Notice of Penalty
Alabama Power Company
February 28, 2017
Page 10

Conclusion

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

Respectfully submitted,

/s/ Edwin G. Kichline

Sonia C. Mendonça
Vice President of Enforcement and Deputy
General Counsel
Edwin G. Kichline
Senior Counsel and Director of
Enforcement Oversight
Robert P. Goldfin
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cc: Alabama Power Company
SERC Reliability Corporation

Attachments

Attachment A

**Settlement Agreement by and between SERC
and APC executed January 19, 2017**



SETTLEMENT AGREEMENT
OF
SERC RELIABILITY CORPORATION
AND
ALABAMA POWER COMPANY

I. INTRODUCTION

1. SERC Reliability Corporation (SERC) and Alabama Power Company (APC) 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 confirmed violations.

Reliability Standard	Requirement	SERC Tracking No.	NERC Tracking No.
FAC-003-2	R2	SERC2016-402328	SERC2016015498
FAC-009-1	R1	SERC2016-402329	SERC2016015499

2. APC admits the two violations and has agreed to the proposed penalty of **\$250,000** in addition to other remedies and actions to mitigate the instant violation and to 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 APC and SERC, the matters discussed herein and do not constitute stipulations or admissions for any other purpose. APC and SERC hereby stipulate and agree to the following:

Background

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

Violation of NERC Reliability Standards

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



III. PARTIES' SEPARATE REPRESENTATIONS

Statement of SERC and Summary of Findings

6. SERC determined that APC was in violation of FAC-003-3 R2 because APC experienced a Sustained Outage on a 230 kV network transmission line due to a vegetation contact. There was one violation included in the Disposition document, Attachment B.
7. SERC determined that APC was in violation of FAC-009-1 R1 because APC failed to establish a Facility Rating for a 230 kV transmission line consistent with the associated Facility Ratings Methodology. There was one violation included in the Disposition document, Attachment C.
8. 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 APC

9. APC admits the facts set forth and agreed to by the parties for purposes of this Settlement Agreement constitute a violation of each Standard and Requirement listed in the table above.
10. APC 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. APC agrees that this Settlement Agreement is in the best interest of the parties and in the best interest of BPS reliability.

IV. MITIGATING ACTIONS, REMEDIES AND SANCTIONS

11. SERC and APC agree that APC has completed the mitigating actions and SERC has verified the completion of the mitigating actions set forth in Section III of the Disposition documents identified as Attachments B and C. The Mitigating Actions, Remedies and Sanctions are discussed in detail in the respective Disposition documents (Attachments B and C).
12. APC's parent company, Southern Company, has agreed to complete additional actions to strengthen the Southern Company operating companies' vegetation management programs as set forth in Attachment D.
13. SERC staff also considered the specific facts and circumstances of the violations and APC'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

[REDACTED]

violation and shall take into consideration the efforts of an entity to remedy the violation in a timely manner.”¹ The factors considered by SERC staff in the determination of the appropriate penalty are set forth in Section II of the Common Disposition document.

14. Based on the above factors, as well as the mitigation actions and preventative measures taken, APC shall pay **\$250,000** to SERC as set forth in this Settlement Agreement. APC 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 (Commission) or by operation of law. SERC shall notify NERC, and NERC shall notify the Commission, if the payment is not timely received. If APC 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 violations that initiated this Settlement Agreement and/or additional violations and may subject APC to new or additional enforcement, penalty or sanction actions in accordance with the NERC Rules of Procedure. APC 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 APC 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 APC of changes to the settlement that would result in approval. If NERC rejects the settlement, NERC will provide specific written reasons for such rejection and SERC will attempt to negotiate a revised settlement agreement with APC including any changes to the settlement

¹ 16 U.S.C. § 824o(e)(6).

[REDACTED]

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. APC agrees that this Settlement Agreement, when approved by NERC and the Commission, shall represent a final settlement of all matters set forth herein and APC waives its right to further hearings and appeal, unless and only to the extent that APC 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 APC in accordance with the NERC Rules of Procedure in the event that APC does not comply with the Mitigation Plans and compliance program agreed to in this Settlement Agreement. In the event APC 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 APC 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, APC shall retain all rights to defend against such enforcement actions, also according to the NERC Rules of Procedure.
20. APC 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 APC 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 APC 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.*


[Redacted]

Agreed to and accepted:



Gary J. Taylor
President and Chief Executive Officer
SERC RELIABILITY CORPORATION

19 Jan 2017
Date



Matthew W. Bowden
Senior Vice President and General Counsel
ALABAMA POWER COMPANY

1/18/17
Date

DISPOSITION OF VIOLATION¹
INFORMATION COMMON TO INSTANT VIOLATIONS

REGISTERED ENTITY

Alabama Power Company (APC)

NERC REGISTRY ID

NCR01166

NOC#

REGIONAL ENTITY

SERC Reliability Corporation (SERC)

I. REGISTRATION INFORMATION

ENTITY IS REGISTERED FOR THE FOLLOWING FUNCTIONS IN THE SERC
 REGION (BOTTOM ROW INDICATES REGISTRATION DATE):

BA	DP	GO	GOP	PA	RC	RP	RSG	TO	TOP	TP	TSP
	X	X						X			
	5/31/07	5/31/07						5/31/07			

* VIOLATION(S) APPLIES TO SHADED FUNCTIONS

DESCRIPTION OF THE REGISTERED ENTITY

APC is an investor-owned, retail electric service company whose common stock is owned by Atlanta-based Southern Company. APC has a total generation capacity of 13,522 MW. APC has a total of 7,277 miles of transmission line ranging from 115kV to 500kV and 52 interconnections with various entities on the Bulk Electric System (BES).

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

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

II. PENALTY INFORMATION

TOTAL ASSESSED PENALTY OR SANCTION OF TWO HUNDRED FIFTY THOUSAND DOLLARS (\$250,000) FOR TWO VIOLATIONS OF RELIABILITY STANDARDS.

(1) REGISTERED ENTITY'S COMPLIANCE HISTORY

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

YES NO

LIST VIOLATIONS AND STATUS

SERC considered APC and its affiliates' FAC-003 R2 compliance history in determining the penalty. APC's relevant prior noncompliance with FAC-003-1 R2 includes NERC Violation ID SERC200700088. APC's affiliate, Georgia Power Company (GPC), had relevant prior noncompliance with FAC-003-1 R2 that includes: NERC Violation IDs SERC200800150 and SERC2011008763.² SERC determined that APC and GPC's FAC-003-1 R2 compliance history should not serve as a basis for aggravating the penalty because SERC verified that APC and GPC completed all mitigating activities for the prior violations more than three years before the start of the instant APC violation.

SERC considered APC and its affiliates' FAC-009-1 R1 compliance history and determined there were no relevant instances of noncompliance.

ADDITIONAL COMMENTS

Not applicable.

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

YES NO

LIST VIOLATIONS AND STATUS

APC had previously filed violations of other NERC Reliability Standards and Requirements in the SERC Region.

A Settlement Agreement covering a violation of FAC-003-1 R2 was filed with FERC under NP09-37-000 on September 25, 2009.³ On October 23,

² FERC Docket numbers NP09-37-000 (APC, September 25, 2009), NP09-40-000 (GPC, September 25, 2009) and NP12-44-000 (GPC, August 31, 2012), respectively.

³ NERC Violation ID SERC200700088.

2009, FERC issued an order stating that it would not engage in further review of the Notice of Penalty.

A Settlement Agreement covering a violation of PRC-005-1 R2 was filed with FERC under NP10-34-000 on December 30, 2009.⁴ On March 15, 2010, FERC issued an order stating that it would not engage in further review of the Notice of Penalty.

A Settlement Agreement covering three violations of PRC-005-1 R2 was filed with FERC under NP11-169-000 on April 29, 2011.⁵ On May 27, 2011, FERC issued an order stating that it would not engage in further review of the Notice of Penalty.

A Settlement Agreement covering a violation of PRC-023-1 R1 was filed with FERC under NP12-27-000 on May 30, 2012.⁶ On June 29, 2012, FERC issued an order stating that it would not engage in further review of the Notice of Penalty.

A Settlement Agreement covering a violation of PRC-005-1 R2 was filed with FERC under NP-13-33-000 on April 30, 2013.⁷ On May 30, 2013, FERC issued an order stating that it would not engage in further review of the Notice of Penalty.

SERC determined that APC's prior compliance history should not serve as a basis for aggravating the penalty because the prior violations are unrelated to the FAC-003-3 R2 and FAC-009-1 R1 violations at issue in this enforcement action.

In addition to the GPC FAC-003 R2 violations discussed above, APC's affiliates have other previously filed violations of other NERC Reliability Standards and Requirements in the SERC region.⁸ SERC determined that APC's affiliates' prior compliance history should not serve as a basis for

⁴ NERC Violation ID SERC200800237.

⁵ NERC Violation IDs SERC200900258, SERC200900282, and SERC200900301.

⁶ NERC Violation ID SERC2011007638.

⁷ NERC Violation ID SERC2012010332.

⁸ FERC Docket numbers for previously filed violations, excluding the two GPC FAC-003 R2 violations discussed above:

- a) Georgia Power Company: NP11-20-000 (November 5, 2010), NP12-27-000 (May 30, 2012), and NP14-35-000 (March, 31, 2014).
- b) Gulf Power Company: NP10-32-000 (December 30, 2009) and RC13-1-000 (October 31, 2012).
- c) Mississippi Power Company: NP10-33-000 (December 30, 2009), NP12-27-000 (May 30, 2012) and NP14-14-000 (December 30, 2013).
- d) Southern Company Services, Inc. – Gen.: NP12-27-000 (May 30, 2012) and NP13-27-000 (February 28, 2013).
- e) Southern Company Services, Inc. – Trans: NP15-7-000 (October 30, 2014) and FFT publicly posted (August 31, 2015).
- f) Southern Power Company: NP10-35-000 (December 30, 2009) and NP12-27-000 (May 31, 2012).

aggravating the penalty because the prior violations are unrelated to the FAC-003-3 R2 and FAC-009-1 R1 violations at issue in this enforcement action.

ADDITIONAL COMMENTS

Not applicable.

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

FULL COOPERATION YES NO
IF NO, EXPLAIN

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

IS THERE A DOCUMENTED COMPLIANCE PROGRAM

YES NO

EXPLAIN

APC is a retail operating company under its parent holding company, Southern Company. APC follows Southern Company's compliance framework manual, which has been in place since January 8, 2001. Details of the internal compliance program (ICP) are available internally through the corporate intranet. Compliance-related information is regularly communicated through various means including email, newsletters, web-based, and/or classroom training sessions. The ICP is approved by the Southern Company ethics and compliance council, which consists of the compliance officers from each Southern Company operating company and major affiliates and the Southern Company compliance officer.

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.

APC has a compliance officer, who reports directly to the chief executive officer of APC as well as to the chairman of the compliance and controls committee of the APC board of directors. Southern Company's ICP is fully supported by company officers and senior management. Southern Company's ICP is regularly reviewed by senior management and is subject to internal and external audits on a periodic basis. The individual performance of employees is evaluated on a regular basis. These

evaluations include an assessment of how the employee complied with laws, regulations and company policies.

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

YES NO
IF YES, EXPLAIN

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

YES NO
IF YES, EXPLAIN

(6) ANY OTHER MITIGATING FACTORS FOR CONSIDERATION

YES NO
IF YES, EXPLAIN

APC accepted responsibility and affirmatively admitted to the violations.

(7) ANY OTHER AGGRAVATING FACTORS FOR CONSIDERATION

YES NO
IF YES, EXPLAIN

(8) ANY OTHER EXTENUATING CIRCUMSTANCES

YES NO
IF YES, EXPLAIN

OTHER RELEVANT INFORMATION:

NOTICE OF ALLEGED VIOLATION AND PROPOSED PENALTY OR SANCTION ISSUED

DATE: OR N/A

SETTLEMENT DISCUSSIONS COMMENCED

DATE: September 29, 2016 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

DISPOSITION OF VIOLATION¹

NERC TRACKING NO. SERC TRACKING NO.
SERC2016015498 **SERC2016-402328**

I. VIOLATION INFORMATION

RELIABILITY STANDARD	REQUIREMENT(S)	SUB-REQUIREMENT(S)	VRF(S)	VSL(S)
FAC-003-3	R2		High	Severe ²

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

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

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

The purpose statement of FAC-003-3 provides:

To maintain a reliable electric transmission system by using a defense-in-depth strategy to manage vegetation located on transmission rights of way (ROW) and minimize encroachments from vegetation located adjacent to the ROW, thus preventing the risk of those vegetation-related outages that could lead to Cascading.

FAC-003-3 R2 provides, in pertinent part:

R2. Each applicable Transmission Owner and applicable Generator Owner shall manage vegetation to prevent encroachments into the minimum vegetation clearance distance (MVCD) of its applicable line(s) which are not either an element of an IROL, or an element of a Major WECC Transfer Path; operating within its Rating and all Rated Electrical Operating Conditions of the types shown below⁹ [*Violation Risk Factor: High*] [*Time Horizon: Real-time*]:

1. An encroachment into the MVCD, observed in Real-time, absent a Sustained Outage,¹⁰
2. An encroachment due to a fall-in from inside the ROW that caused a vegetation-related Sustained Outage,¹¹
3. An encroachment due to blowing together of applicable lines and vegetation located inside the ROW that caused a vegetation-related Sustained Outage,¹²

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

² SERC assessed a Violation Severity Level (VSL) of “Severe” in accordance with the VSL Matrix in FAC-003-3 because APC failed to manage vegetation to prevent encroachment into the MVCD of a line not identified as an element of an IROL or Major WECC transfer path and encroachment into the MVCD as identified in FAC-003-Table 2 was observed due to a grow-in.

4. An encroachment due to vegetation growth into the line MVCD that caused a vegetation-related Sustained Outage¹³

VIOLATION DESCRIPTION

On February 2, 2016, Alabama Power Company (APC) submitted a Self-Report stating that, as a Transmission Owner, it was in violation of FAC-003-3 R2. APC experienced an encroachment due to vegetation growth into the line minimum vegetation clearance distance (MVCD) that caused a vegetation-related Sustained Outage.

On July 18, 2015, APC experienced a Sustained Outage on the Pike County-Pinckard 230 kV network transmission line. APC did not lose generation or load because of the outage. APC dispatched a line crew and aerial patrol to investigate, but the crews were unable to determine the cause before dark. The line remained out of service overnight and the patrols resumed the next morning. On July 19, 2015, a crew discovered that one of the conductors had sagged close to or into a cluster of trees growing in a swampy area located mid-span and observed burn marks on a single river birch tree at approximately 17 feet above grade. The minimum vegetation clearing distance (MVCD) for a 230 kV line is 3.03 feet. The flashover occurred at or near three feet below the treetop. The burn marks on the tree were located approximately 17 feet above grade, which indicated the line sagged about 5.4 feet below the required minimum ground clearance. On July 19, 2015, APC removed the river birch tree, ending the encroachment.

APC's vegetation management strategy included performing annual vegetation inspections and implementing corrective actions to address identified issues. APC conducted a ground-based inspection of the line on May 17, 2014. APC also conducted aerial inspections of the line, visually identifying any possible concerns, on October 15, 2014 and on June 4, 2015. APC did not identify any concerns with line clearances during those inspections. APC mowed the affected section of the line on July 22, 2015.

The Southern Company vegetation management program included consideration of growing conditions, growth rates of known species, and movement of transmission lines. Although the tree was growing in a swampy area, APC was not constrained from performing vegetation work at this location. The tree at issue in this violation was a river birch tree, which has a growth rate of up to three feet per growing season. The MVCD for a 230 kV line is 3.03 feet. As the flashover occurred at or near three feet below the treetop, the tree could have entered the MVCD as early as two years prior to the outage. APC failed to manage vegetation growth to prevent encroachment into the MVCD, resulting in a vegetation-related Sustained Outage.

SERC determined that APC was in violation of FAC-003-3 R2 because APC failed to manage vegetation to prevent encroachment into the MVCD of a line, which was not an element of an IROL, resulting in a vegetation-related Sustained Outage.

RELIABILITY IMPACT STATEMENT- POTENTIAL AND ACTUAL

This violation posed a serious or substantial risk to the reliability of the bulk power system. APC's failure to prevent vegetation from encroaching into the MVCD of a line

caused a Sustained Outage on a 230 kV transmission line, which could have resulted in Cascading. The risk of the violation was elevated by the fact that the line had an incorrect Facility Rating given the actual field conditions and should not have been in service had the correct Facility Rating been used (see SERC2016015499). In addition, APC should have identified and corrected the incorrect Rating in response to the 2010 NERC Alert but failed to do so. APC also conducted aerial and ground-based inspections on this line in 2014 and 2015, and did not identify the trees near the line as a potential concern. Despite the serious risk of the violation, the fault occurred on a networked line and the line’s Protection System devices functioned correctly to limit the extent of the fault. No contingencies were in effect for the line and APC did not lose any generation or load.

COMPLIANCE HISTORY

SERC considered APC’s FAC-003 R2 compliance history and determined there were no relevant instances of noncompliance.

II. DISCOVERY INFORMATION

METHOD OF DISCOVERY

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

DURATION DATE(S)

7/18/2015 (when APC experienced an encroachment due to vegetation growth into the line MVCD that caused a vegetation-related Sustained Outage) through 7/19/2015 (when APC removed the tree)

DATE DISCOVERED BY OR REPORTED TO REGIONAL ENTITY 2/2/2016

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

III. MITIGATION INFORMATION

FOR FINAL ACCEPTED MITIGATION PLAN:

MITIGATION PLAN NO. SERCMIT012447

DATE SUBMITTED TO REGIONAL ENTITY	11/17/2016
DATE ACCEPTED BY REGIONAL ENTITY	11/29/2016
DATE APPROVED BY NERC	12/21/2016
DATE PROVIDED TO FERC	12/28/2016

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

MITIGATION PLAN COMPLETED YES NO

EXPECTED COMPLETION DATE	6/1/2016
EXTENSIONS GRANTED	N/A
ACTUAL COMPLETION DATE	5/5/2016
DATE OF CERTIFICATION LETTER	12/9/2016
CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF	5/5/2016
VERIFIED COMPLETE BY REGIONAL ENTITY ON	12/9/2016

ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT RECURRENCE

To mitigate this violation, APC:

1. Removed the tree that violated the MVCD on the Pike County-Pinckard line ROW;
2. Re-established the National Electrical Safety Code (NESC) clearances for the Pike County-Pinckard 230kV transmission line by installing a new H-frame support structure (#210a) in the span between the support structures #210 and #211;
3. Reviewed the Facility Rating information for the Pike County-Pinckard 230 kV transmission line to verify accurate identification of the Most Limiting Element (MLE) with consideration of field changes;
4. Reviewed all 230 kV and 500 kV transmission lines that cross division or maintenance area boundaries in Alabama to ensure all spans were included in LiDAR assessments;
5. Reviewed LiDAR data and analyses on record for all spans greater than 2,000 ft. in length on all 230 kV and 500 kV transmission lines in Alabama for enhanced assurance of proper clearance;
6. Determined if the hand-off error that caused APC to miss the LiDAR analysis on the Pike County-Pinckard 230 kV line exists in the other Southern Company operating companies, and if so, identified such instances of missed line segments and analyzed them to confirm acceptable clearances; and
7. Completed ground patrol inspections on higher risk ROWs by May 31, 2016.

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

SERC reviewed the following evidence submitted by APC to evaluate completion of its Mitigation Plan:

1. Timesheets indicating personnel removed the offending vegetation between structures 210 and 211 and mowed the span between structures 210 and 211;
2. Screen captures from the maintenance management system indicating installation of intermediate support structure #210a;
3. A document identifying the individual elements that make up the Pike County-Pinckard Facility and showing that none of the elements changed as a result of installing intermediate structure #210a and that the MLE remained the same;
4. A document showing the as-left clearances following the installation of intermediate structure #210a used to verify that NESC ground clearances were met and would not limit the rating of the line;
5. An email verifying that all spans potentially impacted by the LiDAR data hand-off issue were assessed;
6. An email verifying that evaluations were completed on all spans greater than 2,000 ft. for all 230 kV and 500 kV transmission lines.
7. An email verifying that the hand-off error that caused APC to miss the LiDAR analysis on the Pike County-Pinckard 230 kV line does not exist in the other Southern Company operating companies.
8. A document identifying the higher risk ROWs targeted for ground inspections earlier in the growing season and indicating that all ground inspections for these ROWs were completed by May 5, 2016.

EXHIBITS:

SOURCE DOCUMENT

APC Self-Report dated February 2, 2016

MITIGATION PLAN

APC Mitigation Plans submitted on November 17, 2016

CERTIFICATION BY REGISTERED ENTITY

APC Certification of Completed Mitigation Plan dated December 8, 2016

VERIFICATION BY REGIONAL ENTITY

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

DISPOSITION OF VIOLATION¹

NERC TRACKING NO. SERC TRACKING NO.
SERC2016015499 **SERC2016-402329**

I. VIOLATION INFORMATION

RELIABILITY STANDARD	REQUIREMENT(S)	SUB-REQUIREMENT(S)	VRF(S)	VSL(S)
FAC-009-1 ²	R1		Medium	Lower ³

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

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

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

The purpose statement of FAC-009-1 provides:

To ensure that Facility Ratings used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on technically sound principles. A Facility Rating is essential for the determination of System Operating Limits.

FAC-009-1 R1 provides, in pertinent part:

R1. The Transmission Owner and Generator Owner shall each establish Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings Methodology.

VIOLATION DESCRIPTION

On February 2, 2016, Alabama Power Company (APC) submitted a Self-Report stating that, as a Transmission Owner, it was in violation of FAC-008-3 R6. APC developed a Facility Rating for a 230 kV transmission line that was not consistent with its Facility

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

² APC’s violation spans the effective dates of two Standards. FAC-009-1 was in effect from June 18, 2007 to December 31, 2012. The requirements of FAC-009 were included in FAC-008-3 which became effective on January 1, 2013. In that Standard, R6 requires each “Transmission Owner and Generator Owner shall have Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings methodology or documentation for determining its Facility Ratings.”

³ SERC assessed a Violation Severity Level (VSL) of “Lower” in accordance with the December 12, 2012 VSL Matrix because APC failed to establish Facility Ratings consistent with the associated Facility Ratings Methodology for 5% or less of its solely owned and jointly owned Facilities.

Rating Methodology. SERC later determined that the violation extended back to when FAC-009-1 R1 was effective and enforceable.

On July 18, 2015, APC experienced a Sustained Outage on the Pike County-Pinckard 230 kV network transmission line. APC did not lose generation or load because of the outage. APC dispatched a line crew and aerial patrol to investigate, but the crews were unable to determine the cause before dark. The line remained out of service overnight and the patrols resumed the next morning. On July 19, 2015, a crew discovered that one of the conductors had sagged close to or into a cluster of trees growing in a swampy area located mid-span and observed burn marks on a single river birch tree at approximately 17 feet above grade. The minimum vegetation clearing distance (MVCD) for a 230 kV line is 3.03 feet. The flashover occurred at or near three feet below the treetop. The burn marks on the tree were located approximately 17 feet above grade, which indicated the line sagged about 5.4 feet below the required minimum ground clearance. On July 19, 2015, APC removed the river birch tree, ending the encroachment.

As part of its investigation into the cause of the outage, APC discovered the actual line clearances in the field were different from design, and thus APC had been using an incorrect Facility Rating that was not consistent with its Facility Ratings Methodology. The National Electrical Safety Code (NESC) requires a minimum ground clearance of 22.4 feet. APC's Facility Rating Methodology required APC to design transmission line conductors to comply with the National Electrical Safety Code (NESC) at the conductor's maximum operating temperature. In 1999, APC relocated one of the line's support structures and built a new structure 227 feet from its original location, resulting in a span of over 2,000 feet. The extended span had insufficient ground clearance at the low point in the span and APC did not reevaluate the Facility Rating after relocating the structure. Therefore, APC operated the line using a Rating of 342 MVA. Had APC used the actual field conditions in determining the Rating, it would have determined that the Rating should be 0 MVA and would not have had the line in service.

APC should have identified this discrepancy after taking action in response to a NERC Alert issued on October 7, 2010. The Alert, entitled "Consideration of Actual Field Conditions in Determination of Facility Ratings," encouraged entities to assess their Bulk Electric System (BES) facilities to identify discrepancies between in-field and design clearances and mitigate any identified issues. APC completed its response in 2013, having assessed over 7,000 miles of BES transmission lines. APC had collected LiDAR data on the entire Pike County-Pinckard line, but inadvertently failed to include four spans of the line in its assessment process because of a failed hand-off between geographic divisions of APC and confusion regarding the demarcation point of changes in responsibility. APC was the only operating company within Southern Company (Southern) that managed its LiDAR data using geographic divisions, and thus confusion over responsibility by geographic division was not an issue in the other Southern operating companies. The span involved in this violation was one of four spans that APC failed to analyze. As part of its extent of condition review, APC reviewed all lines crossing division boundaries to ensure that it had conducted the necessary analyses on the collected LiDAR data for all such lines. On July 19, 2015, APC analyzed the LiDAR

data for the four spans it had missed and confirmed the span involved in this violation had insufficient ground clearance to support the operational rating of the line. APC found no other discrepancies in the four unanalyzed spans.

APC’s Facility Rating for the Pike County-Pinckard 230 kV network transmission line was inconsistent with its Facility Rating Methodology because APC did not consider the line’s actual clearance after moving one of the line’s support structures in 1999.

SERC determined that APC was in violation of FAC-009-1 R1 because APC failed to establish a Facility Rating for a 230 kV transmission line consistent with the associated Facility Ratings Methodology or documentation for determining its Facility Ratings.

RELIABILITY IMPACT STATEMENT- POTENTIAL AND ACTUAL

This violation posed a serious or substantial risk to the reliability of the bulk power system. APC’s failure to ensure that the Facility Rating was consistent with its Facility Ratings methodology resulted in the operation of a line that should have had a Rating of 0 MVA and should not have been in service. This failure could have resulted in damage to the facility, injury to personnel, improper contingency planning, and incorrect coordination of Protection Systems. The risk of this violation was elevated by the fact that APC should have identified and corrected the incorrect Rating in response to the 2010 NERC Alert but failed to do so until a vegetation-related Sustained Outage helped reveal the issue (see SERC2016015498).

COMPLIANCE HISTORY

SERC considered APC’s and its affiliates’ compliance history and determined there were no relevant instances of noncompliance.

II. DISCOVERY INFORMATION

METHOD OF DISCOVERY

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

DURATION DATE(S)

6/18/2007 (when the Standard became mandatory and enforceable on APC) through 7/20/2015 (when APC installed a new support structure on the line to meet the NESC clearance requirement and updated the Facility Rating to be consistent with its Facility Ratings methodology)

DATE DISCOVERED BY OR REPORTED TO REGIONAL ENTITY 2/2/2016

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

III. MITIGATION INFORMATION

FOR FINAL ACCEPTED MITIGATION PLAN:

MITIGATION PLAN NO. SERCMIT012448
 DATE SUBMITTED TO REGIONAL ENTITY 11/17/2016
 DATE ACCEPTED BY REGIONAL ENTITY 11/29/2016
 DATE APPROVED BY NERC 12/21/2016
 DATE PROVIDED TO FERC 12/28/2016

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

MITIGATION PLAN COMPLETED YES NO

EXPECTED COMPLETION DATE 11/30/2016
 EXTENSIONS GRANTED N/A
 ACTUAL COMPLETION DATE 11/28/2016
 DATE OF CERTIFICATION LETTER 12/7/2016
 CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF 11/30/2016
 VERIFIED COMPLETE BY REGIONAL ENTITY ON 12/9/2016

ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT RECURRENCE

To mitigate this violation, APC:

1. Re-established the NESC clearances for the Pike County-Pinckard 230 kV transmission line by installing a new H-frame support structure (#210a) in the span between support structures #210 and #211;
2. Reviewed the Facility Rating information for the Pike County-Pinckard 230 kV transmission line to verify accurate identification of the Most Limiting Element (MLE) with consideration of field changes implemented;
3. Reviewed all 230 kV and 500 kV transmission lines that cross division or maintenance area boundaries in Alabama to ensure all spans were included in LiDAR assessments;
4. Reviewed LiDAR data and analyses on record for all spans greater than 2,000 ft. in length on all 230 kV and 500 kV transmission lines in Alabama for enhanced assurance of proper clearance; and

5. APC Management Reinforced adherence to the established change management process with appropriate department managers via email or other methods.

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

SERC reviewed the following evidence submitted by APC to evaluate completion of its Mitigation Plan:

1. A document providing screen captures from the maintenance management system indicating installation of intermediate support structure #210a;
2. A document identifying the individual elements that make up the Pike County-Pinckard Facility and showing that none of the elements changed as a result of installing intermediate structure #210a and that the MLE remained the same;
3. A document showing the as-left clearances following the installation of intermediate structure #210a to verify that NESC ground clearances were met and would not limit the rating of the line;
4. An email verifying that all spans potentially impacted by the LiDAR data hand-off issue were assessed;
5. An email verifying that evaluations were completed on all spans greater than 2,000 ft. for all 230 kV and 500 kV transmission lines;
6. A presentation communicated to APC department managers to reinforce adherence to the established change management process for relocation, reconfiguration or modifications to transmission line structures;
7. An Outlook meeting notice identifying the attendees who participated in the presentation by APC management to reinforce adherence to the established change management process for relocation, reconfiguration or modifications to transmission line structures;
8. A record of meeting attendance showing at least one member of each applicable department attended the aforementioned presentation.

EXHIBITS:

SOURCE DOCUMENT

APC Self-Report dated February 2, 2016

MITIGATION PLAN

APC Mitigation Plan submitted on November 17, 2016

CERTIFICATION BY REGISTERED ENTITY

APC Certification of Completed Mitigation Plan dated December 7, 2016

VERIFICATION BY REGIONAL ENTITY

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

In addition to the mitigating activities described in Attachments B and C, APC's parent company, Southern Company, has agreed to complete the following additional actions to strengthen the Southern Company operating companies' vegetation management programs:

- a. **Test vegetation management controls.** Southern Company identified key internal controls for vegetation management and incorporated them into its compliance monitoring and testing (CMAT) program. As part of the CMAT program, Southern Company will complete independent testing of 10 key vegetation management controls by the end of Q1 2017 to ensure design and operating effectiveness, in accordance with the established testing schedule provided by Southern Company entitled *OPCO Trans Compliance_Q3 2016 B Wise Reconciliation_FAC-003.pdf*. Southern Company will retain and track the result of the CMAT testing in an internal control management application, including any deficiencies found in the control activity and corrective action plans developed to address the deficiencies. Southern Company will work with operating companies to develop any corrective action plans. Southern Company will report any deficiencies identified to operating company management and Southern Company Services management. Southern Company will incorporate controls identified by the VM committee into its CMAT program on an on-going basis. Southern Company shall provide SERC with evidence of completing independent testing of the 10 key controls by the end of Q1 2017. By the end of 2017, Southern Company shall provide a report to SERC detailing any CMAT modifications or additions resulting from VM Committee activity or input.
- b. **Conduct PhoDAR pilot program.** Southern Company will complete a pilot program to assess the effectiveness of photogrammetric detection and ranging (PhoDAR) in a vegetation management application. PhoDAR is a range imaging technique for estimating three-dimensional structures from two-dimensional image sequences coupled with motion signals. Southern Company will determine whether the technology offers an accurate, cost effective alternative or supplement to traditional aerial inspection techniques to identify potential clearance issues along right-of-ways. Southern Company will assess approximately 600 miles of 230 kV and 500 kV transmission lines using PhoDAR technology and compare the results to traditional aerial inspections. Southern Company estimates it will spend \$232,500 to complete this pilot program. Southern Company shall complete the pilot program by the end of Q1 2017. The VM Committee will evaluate the results of the pilot program and provide a recommendation to the TLT regarding its use as a viable alternative or supplement to more traditional inspection methods by the end of Q1 2017. Southern Company shall provide SERC with evidence of assessing transmission lines using PhoDAR and comparing those results with traditional aerial inspections concurrent with the VM Committee's recommendation by the end of Q1 2017. Further, Southern Company will share its pilot program results with the North American Transmission Forum Vegetation Management Practices Group by the end of Q2 2017. Southern Company will provide SERC with evidence of such sharing by the end of Q2 2017.

- c. **Refocus reliability steering committee.** Southern Company's reliability steering committee (RSC), an executive oversight committee, will review all of Southern Company's violations with NERC Reliability Standards and identify trends that may indicate broader compliance vulnerabilities across business units or operating companies. The RSC will develop and sponsor compliance initiatives and/or best practices to address such vulnerabilities. Southern Company will add RSC members at the general manager level or higher from each business unit across its NERC functional areas, including Operating Companies (DP, TO), Bulk Power Operations (RC, BA, TOP), Transmission Planning (TP, PA/PC), Transmission Policy (TSP), Generation (GO, GOP, RP) and Operations Compliance. The RSC will report to the Transmission Leadership Team (TLT), which is empowered to direct operating companies to implement best practices. The RSC will draft a charter for TLT review by the end of Q1 2017. The charter will define the RSC's objectives, membership, authority, and reporting structure. By the end of Q1 2017, Southern Company shall provide SERC with evidence of the RSC draft charter submitted to the TLT and the RSC's updated roster. By the end of 2017, Southern Company shall provide SERC with evidence of the RSC meeting(s), including agendas and meeting minutes. By the end of 2017, Southern Company shall also provide a report to SERC detailing either (1) any best practices or program changes implemented by the operating companies at the direction of the TLT, based on reports from the RSC (and provide evidence thereof) or (2) that operating companies did not implement anything new.
- d. **Expand vegetation management committee.** Southern Company will leverage an existing internal vegetation management (VM) committee to identify and effect changes in Southern Company's operating companies' VM programs to ensure reliability, compliance, and continuous improvement. On October 20, 2016, the Southern Company TLT, comprised of executives at the corporate level and operating company level, committed to sponsor the VM committee. Southern Company expects executive sponsorship and oversight by the TLT to empower the VM committee to implement VM program changes at the system level. The VM committee will draft a charter for TLT review by the end of Q1 2017. The charter will define the VM committee's objectives, membership, authority, and reporting structure. Southern Company will add a compliance liaison role to the VM committee membership, and such liaison will be responsible for ensuring that VM program changes factor in NERC compliance considerations and integrate with Southern Company's internal controls program. By the end of Q1 2017, Southern Company shall provide SERC with evidence of the VM committee draft charter submitted to the TLT and of the VM committee's updated roster, showing the filled compliance liaison role. By the end of 2017, Southern Company shall provide SERC with evidence of the VM committee meeting(s), including agendas and meeting minutes. By the end of 2017, Southern Company shall also provide a report to SERC detailing (1) any VM program changes implemented at the operating companies, which were initiated by the VM committee (and provide evidence thereof) or (2) that operating companies did not implement anything new.

Attachment B

Record documents for the violation of FAC-003-3 R2 (SERC2016015498)

B-1. APC's Self-Report for FAC-003-3 R2 dated February 2, 2016

B-2. APC's Mitigation Plan designated as SERCMIT012447 submitted November 17, 2016

B-3. APC's Certification of Mitigation Plan Completion dated December 8, 2016

This item was submitted by Mark Pratt (mapratt@southernco.com) on 2/2/2016

Please note that the circumstances under which an Entity would submit a Scope Expansion form are different from what would require a new Self-Report. Please review the material in [this link](#) to see clarifying information and examples of these differences before continuing with this form.

FORM INFORMATION

Registered Entity: Alabama Power Company

NERC Registry ID: NCR01166

JRO ID:

CFR ID:

Entity Contact Information: Mark Pratt

REPORTING INFORMATION

Applicable Standard: FAC-003-3

Applicable Requirement: R2.

Applicable Sub Requirement(s):

Applicable Functions: TO

Has a Possible violation of this standard and requirement previously been reported or discovered: Yes

If yes, provide NERC Violation ID (if known):

Date Reported to Region or Discovered by Region:

8/13/2015

Monitoring Method for previously reported or discovered:

Self-Report

Has the scope of the Possible Violation expanded:

No

Has this Possible Violation previously been reported to other Regions: No

Date Possible Violation was discovered: 7/19/2015

Beginning Date of Possible Violation: 7/18/2015

End or Expected End Date of Possible Violation: 7/20/2015

Is the violation still occurring? No

Provide detailed description and cause of Possible Violation:

On July 18, 2015, Alabama Power Company (APC) experienced a sustained outage on the Pike County-Pinckard 230 kV transmission line. A line crew was dispatched to investigate, and an aerial patrol was initiated, but the cause of the outage was not able to be determined before dark. The patrols resumed the morning of July 19, 2015, and it was discovered that one of the conductors had sagged close to or into vegetation in what appeared to be a swampy area between support structures #210 and #211. Burn marks were observed on a single 20.1 ft tall River Birch tree at approximately 17 ft above grade.

To resolve the insufficient ground clearance issue, on July 20, 2015, line maintenance crews installed an intermediate support structure (#210a). The line was returned to service with no impact to customers (i.e., no BES load interrupted) as a result of the outage.

Subsequent investigation revealed that support structure #211 was relocated in 1999, some 227 ft. from its original location, in an effort to address severe corrosion on the structure which was located in what had become a seasonally wet area. The relocation of support structure #211 extended the span in question to 2,052 feet. This resulted in a condition of insufficient ground clearance at the low point in the span, based on NESC requirements, despite an increase in the height of the relocated support by the line crew in a deliberate attempt to mitigate clearance impacts from increasing the span length. The Facility Rating for this line was not re-evaluated at that time and changed to reflect the actual field conditions. Therefore, APC was inadvertently operating this line outside its actual Facility Rating and Rated Electrical Operating Conditions at the time of the outage.

Are Mitigating Activities in progress or completed? Yes

If Yes, Provide description of Mitigating Activities:

Yes, Alabama Power completed the following mitigating actions following the sustained outage on the Pike County-Pinckard 230kV transmission line:
1. Re-established the NESC clearances required by APC's FRM for the Pike Co.-Pinckard 230kV transmission line by installing a new H-frame support structure (#210a) in the span between support structures #210 and #211. This work was completed on July 20, 2015.

Provide details to prevent recurrence:

The circumstances contributing to this outage are unique to the Pike Co.-Pinckard 230kV transmission line, related more to Facility Ratings management, and are not indicative of a more pervasive issue with vegetation management in APC. Therefore, actions to prevent recurrence are focused on Facility Rating management and are detailed in a related Self-report submitted for FAC-008-3.

Date Mitigating Activities (including activities to prevent recurrence) are expected to be completed or were completed:

7/20/2015

Potential Impact to the Bulk Power System: Minimal

Actual Impact to the Bulk Power System: Minimal

Provide detailed description of Potential Risk to Bulk Power System:

Alabama Power Company asserts that the encroachment and subsequent outage of the Pike County-Pinckard 230kV transmission line posed minimal potential risk to the reliability of the BES based on the following:

1. The transmission system is operated considering the next (N-1) contingency from its current operating state such that the next unexpected event does not impact the reliability of the system. The loss of the Pike County – Pinckard 230kV line did not result in any SOLs, impacts to reliability or customers, or loss of BES load. Operators have the authority to perform whatever actions necessary for the next contingency to maintain the reliability of the system.
2. This issue is unique to the Pike Co.-Pinckard 230kV transmission line and is not indicative of a more pervasive issue with Facility Ratings in APC. The basis for this assertion is that an unusual alignment of issues came together in this instance, and it is highly unlikely that a similar alignment has occurred or will repeat. Specifically:
 - a. The ROW topography in this location contributed to inherently long spans and the formation of a seasonally wet area at one of the support locations. The seasonally wet area created corrosion concerns prompting the relocation of a support structure in 1999, which further increased span length.
 - b. The field changes were not properly vetted in advance to identify and address potential impacts to the line's Facility Rating as Transmission line maintenance personnel acted with a sense of urgency to replace the support structure due to concerns regarding its integrity and possible imminent impact to reliability.
 - c. An opportunity to identify the clearance issue created by the relocation of support structure #211 was missed due to a gap in LiDAR analysis resulting from an issue with the hand-off of LiDAR data collected for this section of the Pike Co.-Pinckard 230kV transmission line in response to the 2010 NERC Alert. [Note: Subsequent review and analysis of transmission line spans operating at >200kV that could have experienced similar hand-off issues did not result in any additional areas of concern.]

Provide detailed description of Actual Risk to Bulk Power System:

Alabama Power Company asserts that the encroachment and subsequent outage of the Pike County-Pinckard 230kV transmission line posed minimal actual risk to the reliability of the BES based on the following:

1. While a sustained outage on the Pike Co.-Pinckard 230kV transmission line did occur, the outage did not result in any System Operating Limits (SOLs) impacting reliability to customers or loss of BES load.

Additional Comments:

On October 7, 2010 NERC issued a Recommendation to Industry in the form of a NERC Alert entitled "Consideration of Actual Field Conditions in Determination of Facility Ratings". This recommendation was precipitated by a similar transmission line outage in Indiana in which the ground clearance was found to be less than NESC requirements in the field, contrary to design documentation used to establish the line's Rating. In their recommendation, NERC encouraged entities registered as Transmission Owners (TOs) to perform assessments of their BES facilities to identify discrepancies between in-field and design clearances, report the discrepancies to NERC and mitigate any identified issues.



APC voluntarily performed prioritized assessments on all BES transmission lines using a combination of Light Detection and Ranging (LiDAR) technology and field inspection methods to verify consistency between in-field clearances and design clearances. This effort was completed in 2013 with over 7,000 miles of BES transmission lines assessed. Discrepancies were identified, and APC developed and executed plans to mitigate all identified discrepancies.

APC reviewed the LiDAR assessments performed as part of the 2010 NERC Alert in their investigation of the cause of the July 18, 2015 outage on the Pike County-Pinckard 230kV transmission line. It was determined that, although the LiDAR data had been collected on the entire line, four spans of the line were inadvertently missed during the assessment process due to hand-offs between geographic Divisions based on confusion regarding the demarcation point of changes in responsibility. The span from support structure 210 to 211 was one of the four spans missed. The LiDAR data collected in 2011 was analyzed on Sunday, July 19, 2015, and it showed the span to have a ground clearance with insufficient margin to support the operational rating of the line based on application of the NESC criteria in APC's FRM.

APC filed a separate, related self-report for the Facility Rating issue.

NOTE: While submittal of a mitigation plan is not required until after a determination of a violation is confirmed, early submittal of a mitigation plan to address and remedy an identified deficiency is encouraged. Submittal of a mitigation plan shall not be deemed an admission of a violation. (See NERC Rules of Procedure, Appendix 4C, Section 6.4.)

 [A previous version](#) of this Mitigation Plan exists 

 This item was signed by Helen Nalley (hralley@southernco.com) on 11/17/2016 

 This item was marked ready for signature by Mark Pratt (mapratt@southernco.com) on 10/21/2016 

SECTION A: COMPLIANCE NOTICES & MITIGATION PLAN REQUIREMENTS

A.1 Notices and requirements applicable to Mitigation Plans and this Submittal Form are set forth in "[Attachment A - Compliance Notices & Mitigation Plan Requirements](#)" to this form.

[Yes] A.2 I have reviewed Attachment A and understand that this Mitigation Plan Submittal Form will not be accepted unless this box is checked.

SECTION B: REGISTERED ENTITY INFORMATION

B.1 Identify your organization

Company Name:

Company Address:

Compliance Registry ID:

B.2 Identify the individual in your organization who will be the Entity Contact regarding this Mitigation Plan.

Name:

SECTION C: IDENTIFICATION OF ALLEGED OR CONFIRMED VIOLATION(S) ASSOCIATED WITH THIS MITIGATION PLAN

C.1 This Mitigation Plan is associated with the following Alleged or Confirmed violation(s) of Reliability Standard listed below.

Standard:

Requirement	Regional ID	NERC Violation ID	Date Issue Reported
R2.	SERC2016-402328	SERC2016015498	2/2/2016

C.2 Identify the cause of the Alleged or Confirmed violation(s) identified above:

On July 18, 2015, Alabama Power Company (APC) experienced a sustained outage on the Pike County-Pinckard 230 kV transmission line. A line crew was dispatched to investigate, and an aerial patrol was initiated, but the cause of the outage was not able to be determined before dark. The patrols resumed the morning of July 19, 2015, and it was discovered that one of the conductors had sagged close to or into vegetation in what appeared to be a swampy area between support structures #210 and #211. Burn marks were observed on a single 20.1 ft tall River Birch tree at approximately 17 ft above grade.

To resolve the insufficient ground clearance issue, on July 20, 2015, line maintenance crews installed an intermediate support structure (#210a). The line was returned to service with no impact to customers (i.e., no BES load interrupted) as a result of the outage.

Subsequent investigation revealed that support structure #211 was relocated in 1999, some 227 ft. from its original location, in an effort to address severe corrosion on the structure which was located in what had become a seasonally wet area. The relocation of support structure #211 extended the span in question to 2,052 feet. This resulted in a condition of insufficient ground clearance at the low point in the span, based on NESC requirements, despite an increase in the height of the relocated support by the line crew in a deliberate attempt to mitigate clearance impacts from increasing the span length. The Facility Rating for this line was not re-evaluated at that time and changed to reflect the actual field conditions. Therefore, APC was inadvertently operating this line outside its actual Facility Rating and Rated Electrical Operating Conditions at the time of the outage.

APC has a Construction Card process in place, currently, that requires modifications to transmission lines/structures to be reviewed by Transmission Line Design (among other groups). This process is an effective control that, had it been in place then, would have prevented APC from operating the Pike Co. - Pinckard line in violation of NESC clearance following the field modification completed in 1999.

[Attachments \(\)](#)

C.3 Provide any additional relevant information regarding the Alleged or Confirmed violations associated with this MitigationPlan:

On October 7, 2010 NERC issued a Recommendation to Industry in the form of a NERC Alert entitled "Consideration of Actual Field Conditions in Determination of Facility Ratings". This recommendation was precipitated by a similar transmission line outage in Indiana in which the ground clearance was found to be less than NESC requirements in the field, contrary to design documentation used to establish the line's Rating. In their recommendation, NERC encouraged entities registered as Transmission Owners (TOs) to perform assessments of their BES facilities to identify discrepancies between in-field and design clearances, report the discrepancies to NERC and mitigate any identified issues.

APC voluntarily performed prioritized assessments on all BES transmission lines using a combination of Light Detection and Ranging (LiDAR) technology and field inspection methods to verify consistency between in-field clearances and design clearances. This effort was completed in 2013 with over 7,000 miles of BES transmission lines assessed. Discrepancies were identified, and APC developed and executed plans to mitigate all identified discrepancies.

APC reviewed the LiDAR assessments performed as part of the 2010 NERC Alert in their investigation of the cause of the July 18, 2015 outage on the Pike County-Pinckard 230kV transmission line. It was determined that, although the LiDAR data had been collected on the entire line, four spans of the line were inadvertently missed during the assessment process due to hand-offs between geographic Divisions based on confusion regarding the demarcation point of changes in responsibility. The span from support structure 210 to 211 was one of the four spans missed. The LiDAR data collected in 2011 was analyzed on Sunday, July 19, 2015, and it showed the span to have a ground clearance with insufficient margin to support the operational rating of the line based on application of the NESC criteria in APC's FRM.

APC filed a separate, related self-report for the Facility Rating issue.

[Attachments \(\)](#)

SECTION D: DETAILS OF PROPOSED MITIGATION PLAN

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 Alleged or Confirmed violations identified above in Part C.1 of this form:

Alabama Power completed mitigating actions to both address the immediate non-compliance and to prevent recurrence following the sustained outage on the Pike County-Pinckard 230kV transmission line as follows:

1. Remove the tree that violated the MVCD on the Pike Co. - Pinckard ROW
2. Re-establish the NESC clearances for the Pike Co.-Pinckard 230kV transmission line by installing a new H-frame support structure (#210a) in the span between support structures #210 and #211.
3. Review the Facility Rating information for the Pike Co.-Pinckard 230kV transmission line to verify accurate identification of the Most Limiting Element (MLE) with consideration of field changes implemented in Item #1 (above).
4. Review all 230kV and 500kV transmission lines that cross Division/maintenance area boundaries in Alabama to ensure all spans were included in LiDAR assessments.
5. Review LiDAR data/analyses on record for all spans greater than 2,000 ft in length on all 230kV and 500kV transmission lines in Alabama for enhanced assurance of proper clearance.
6. Determine if the hand-off error that caused Alabama Power to miss the LiDAR analysis on the Pike Co. - Pinckard 230kV line exists in the other operating companies, and if so, identify such instances of missed line segments and analyze them to confirm acceptable clearances.
7. Complete ground patrol inspections on higher risk ROWs by May 31st each year.

[Attachments \(\)](#)

D.2 Provide the date by which full implementation of the Mitigation Plan will be, or has been, completed with respect to the Alleged or Confirmed violations identified above. State whether the Mitigation Plan has been fully implemented:

6/1/2016

D.3 Enter Milestone Activities, with due dates, that your organization is proposing, or has completed, for this Mitigation Plan:

No Milestones Defined

SECTION E: INTERIM AND FUTURE RELIABILITY RISK

E.1 Abatement of Interim BPS Reliability Risk: While your organization is implementing this Mitigation Plan the reliability of the Bulk Power Supply (BPS) 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 to mitigate this increased risk to the reliability of the BPS. (Additional detailed information may be provided as an attachment):

- (i) Alabama Power asserts that the reliability of the Bulk Power Supply (BPS) does not remain at higher risk and will not be negatively impacted prior to full completion of the action items in this Mitigation Plan due to a very low probability that additional NESC clearance violations exist. This is based on the following:
- Improvements in Alabama Power's change management processes since the field changes implemented on the Pike Co. - Pinckard 230kV transmission line in 1999
 - Completion of a LiDAR review of 100% of the 230kV and 500kV transmission lines in the 2010 - 2013 timeframe in response to the Facility Ratings NERC Alert
 - Prompt recognition of the association between the missed LiDAR analysis for the Pike Co. - Pinckard line and Division Area geographic boundaries, resulting in the prompt completion of a targeted review to ensure no additional line segments went unanalyzed
- (ii) Therefore, Alabama Power Company does not plan or propose to implement any additional interim mitigating actions.

[Attachments \(\)](#)

E.2 Prevention of Future BPS Reliability Risk: Describe how successful completion of this Mitigation Plan will prevent or minimize the probability that your organization incurs further risk of Alleged violations of the same or similar reliability standards requirements in the future. (Additional detailed information may be provided as an attachment):

Successful completion of this Mitigation Plan will minimize the probability that Alabama Power Company incurs further violations of FAC-003-3 associated with NESC ground clearance issues by ensuring that ground patrols for higher risk ROWs are completed earlier in the growing season.

[Attachments \(\)](#)

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 this Mitigation Plan for acceptance by SERC and approval by NERC, and
- b) If applicable, certifies that this Mitigation Plan was completed on or before the date provided as the 'Date of Completion of the Mitigation Plan' on this form, and
- c) Acknowledges:
 - I am Helen Nalley of Alabama Power Company
 - I am qualified to sign this Mitigation Plan on behalf of Alabama Power Company
 - I understand Alabama Power Company's 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 (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation (NERC CMEP))

- I have read and am familiar with the contents of this Mitigation Plan
- Alabama Power Company agrees to comply with, this Mitigation Plan, including the timetable completion date, as accepted by SERC and approved by NERC

SECTION G: REGIONAL ENTITY CONTACT

SERC Single Point of Contact (SPOC)

This item was signed by Scott Moore (rsmoore@southernco.com) on 12/9/2016

This item was marked ready for signature by Mark Pratt (mapratt@southernco.com) on 12/8/2016

MEMBER MITIGATION PLAN CLOSURE

All Mitigation Plan Completion Certification submittals shall include data or information sufficient for SERC to verify completion of the Mitigation Plan. SERC may request such additional data or information and conduct follow-up assessments, on-site or other Spot Checking, or Compliance Audits as it deems necessary to verify that all required actions in the Mitigation Plan have been completed and the Registered Entity is in compliance with the subject Reliability Standard. (CMEP Section 6.6) Data or information submitted may become part of a public record upon final disposition of the possible violation, therefore any confidential information contained therein should be marked as such in accordance with the provisions of Section 1500 of the NERC Rules of Procedure.

Name of Registered Entity submitting certification:

Alabama Power Company

Name of Standard of mitigation violation(s):

FAC-003-3

Requirement	Tracking Number	NERC Violation ID
R2.	SERC2016-402328	SERC2016015498

Date of completion of the Mitigation Plan:

5/5/2016

No Milestones Defined

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

- Alabama Power completed mitigating actions to address the immediate non-compliance and to prevent recurrence following the sustained outage on the Pike County-Pinckard 230kV transmission line. These actions are as follows:
1. Removed the tree that violated the MVCD on the Pike Co. - Pinckard ROW
 2. Re-established the NESC clearances for the Pike Co.-Pinckard 230kV transmission line by installing a new H-frame support structure (#210a) in the span between support structures #210 and #211.
 3. Reviewed the Facility Rating information for the Pike Co.-Pinckard 230kV transmission line to verify accurate identification of the Most Limiting Element (MLE) with consideration of field changes implemented in Item #1 (above).
 4. Reviewed all 230kV and 500kV transmission lines that cross Division/maintenance area boundaries in Alabama to ensure all spans were included in LiDAR assessments.
 5. Reviewed LiDAR data/analyses on record for all spans greater than 2,000 ft in length on all 230kV and 500kV transmission lines in Alabama for enhanced assurance of proper clearance.
 6. Determined if the hand-off error that caused Alabama Power to miss the LiDAR analysis on the Pike Co. - Pinckard 230kV line exists in the other operating companies, and if so, identify such instances of missed line segments and analyze them to confirm acceptable clearances.
 7. Completed ground patrol inspection on higher risk ROWs by May 31, 2016.

Description of the information provided to SERC for their evaluation *

- The following documents/files are being provided to SERC as evidence of completion of the mitigating actions described in Part D of the Mitigation Plan:
1. Timesheets T6005 T4003.pdf: This document provides evidence that Asplundh removed the offending vegetation between Structures 210 and 211 on 7/19/2015 and mowed the span between Structures 210 and 211 on 7/22/2015.
 2. STOMP Str 210A Installed Note_07_20_15.pdf: This document provides screen captures from the STOMP maintenance management system indicating installation of intermediate support structure #210A on 7/19/2015.
 3. Pike County-Pinckard 230KVTL Line Elements_07_31_2015.pdf and A-427920-002-00_Str #210A Installed.pdf: The first document identifies the individual elements that make up the Pike Co. - Pinckard Facility and shows that none of the elements changed as a result of installing intermediate structure #210A and that the MLE remains the 1033.5 45/7 ACSR conductor. The second document shows the as-left clearances following the installation of intermediate structure #210A to verify that NESC ground clearances are met and will not limit the rating of the line.
 4. Follow-up Evaluation of 500kV & 230kV TLs.pdf: This email verifies that all spans potentially impacted by the LiDAR data hand-off issue were assessed.
 5. Follow-up Evaluation of 500kV & 230kV TLs.pdf: This email verifies that evaluations were completed on all spans greater than 2,000 ft for all 230kV and 500kV transmission lines.
 6. Re_Mitigation Plan Activity for Pike Co. - Pinckard.pdf: This email verifies that the hand-off error that caused Alabama Power to miss the LiDAR analysis on the Pike Co. - Pinckard 230kV line does not exist in the other operating companies.
 7. 2016 Transmission Line Mitigation Plan.pdf: This document identifies the higher risk ROWs targeted for ground inspections earlier in the growing season, and indicates that all ground inspections for these ROWs were completed by May 31, 2016.

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 is complete, true and correct to the best of my knowledge.

Attachment C

Record documents for the violation of FAC-009-1 R1 (SERC2016015499)

C-1. APC's Self-Report for FAC-009-1 R1 dated February 2, 2016

C-2. APC's Mitigation Plan designated as SERCMIT012448 submitted November 17, 2016

C-3. APC's Certification of Mitigation Plan Completion dated December 7, 2016

This item was submitted by Mark Pratt (mapratt@southernco.com) on 2/2/2016

Please note that the circumstances under which an Entity would submit a Scope Expansion form are different from what would require a new Self-Report. Please review the material in [this link](#) to see clarifying information and examples of these differences before continuing with this form.

FORM INFORMATION

Registered Entity: Alabama Power Company

NERC Registry ID: NCR01166

JRO ID:

CFR ID:

Entity Contact Information: Mark Pratt

REPORTING INFORMATION

Applicable Standard: FAC-008-3

Applicable Requirement: R6.

Applicable Sub Requirement(s):

Applicable Functions: TO

Has a Possible violation of this standard and requirement previously been reported or discovered: Yes

If yes, provide NERC Violation ID (if known):

Date Reported to Region or Discovered by Region:

8/13/2015

Monitoring Method for previously reported or discovered:

Self-Report

Has the scope of the Possible Violation expanded:

No

Has this Possible Violation previously been reported to other Regions: No

Date Possible Violation was discovered: 7/19/2015

Beginning Date of Possible Violation: 1/1/2013

End or Expected End Date of Possible Violation: 7/20/2015

Is the violation still occurring? No

Provide detailed description and cause of Possible Violation:

On July 19, 2015, as part of an internal investigation into the cause of a sustained outage on a 230kV transmission line, Alabama Power Company (APC) discovered that the Facility Rating used by System Operations for the Pike County-Pinckard 230kV transmission line did not accurately consider actual line clearances in the field that were different from design. Specifically, APC has been operating this transmission line with a Facility Rating that was not adjusted to account for changes made to a supporting structure in 1999.

The NESC minimum ground clearance is one of several criteria specified in APC's Facility Rating Methodology (FRM) to determine transmission line Ratings. The NESC criteria was applied accurately and in a manner consistent with APC's FRM based on original line design information. In fact, there was enough margin in the original design to support a re-rate of the line in 1998 to a higher operating temperature. However, one of the support structures (#211) was relocated in 1999, some 227 feet from its original location in an effort to address severe corrosion on the structure which was located in what had become a seasonally wet area. The relocation of support structure #211 extended the span in question to 2,052 feet. This resulted in a condition of insufficient ground clearance at the low point in the span, based on NESC requirements, despite an increase in the height of the relocated support by the line crew in a deliberate attempt to mitigate clearance impacts from increasing the span length. The Facility Rating for this line was not re-evaluated and changed to reflect the actual field conditions. Therefore, APC has been inadvertently operating this line outside its actual Facility Rating and Rated Electrical Operating Conditions since 1999.

Are Mitigating Activities in progress or completed? Yes

If Yes, Provide description of Mitigating Activities:

Yes, Alabama Power completed the following mitigating actions during the sustained outage on the Pike County-Pinckard 230kV transmission line:

1. Re-established the NESC clearances for the Pike Co.-Pinckard 230kV transmission line by installing a new H-frame support structure (#210a) in the span between support structures #210 and #211. This work was completed on July 20, 2015.
2. Reviewed the Facility Rating information for the Pike Co.-Pinckard 230kV transmission line to verify accurate identification of the Most Limiting Element (MLE).

Provide details to prevent recurrence:

Alabama Power completed the following actions to prevent recurrence of operating a transmission line with insufficient ground clearance:

1. Reviewed all 230kV and 500kV transmission lines that cross Division/maintenance area boundaries to ensure all spans were included in LiDAR assessments.
2. Reviewed LiDAR data/analyses on record for all spans greater than 2,000 ft in length on all 230kV and 500kV transmission lines for enhanced assurance of proper clearance.

Date Mitigating Activities (including activities to prevent recurrence) are expected to be completed or were completed:

12/16/2015

Potential Impact to the Bulk Power System: Minimal

Actual Impact to the Bulk Power System: Minimal

Provide detailed description of Potential Risk to Bulk Power System:

Alabama Power Company asserts that operating the Pike County-Pinckard 230kV transmission line with a Facility Rating that did not accurately reflect field conditions posed minimal potential risk to the reliability of the BES based on the following:

1. The transmission system is operated considering the next (N-1) contingency from its current operating state such that the next unexpected event does not impact the reliability of the system. The loss of the Pike County – Pinckard 230kV line did not result in any SOLs, impacts to reliability or customers, or loss of BES load. Operators have the authority to perform whatever actions necessary for the next contingency to maintain the reliability of the system.
2. This issue is unique to the Pike Co.-Pinckard 230kV transmission line and is not indicative of a more pervasive issue with Facility Ratings in APC. The basis for this assertion is that an unusual alignment of issues came together in this instance, and it is highly unlikely that a similar alignment has occurred or will repeat. Specifically:
 - a. The ROW topography in this location contributed to inherently long spans and the formation of a seasonally wet area at one of the support locations. The seasonally wet area created corrosion concerns prompting the relocation of a support structure in 1999, which further increased span length.
 - b. The field changes were not properly vetted in advance to identify and address potential impacts to the line's Facility Rating as Transmission line maintenance personnel acted with a sense of urgency to replace the support structure due to concerns regarding its integrity and possible imminent impact to reliability.
 - c. There was an issue with the hand-off of LiDAR data collected for this section of the Pike Co.-Pinckard 230kV transmission line in response to the 2010 NERC Alert. Therefore, APC failed to identify the clearance issues present at that time. [Note: Subsequent review and analysis of transmission line spans operating at >200kV that could have experienced similar hand-off issues did not result in any additional areas of concern.]

Provide detailed description of Actual Risk to Bulk Power System:

Alabama Power Company asserts that operating the Pike County-Pinckard 230kV transmission line with a Facility Rating that did not accurately reflect field conditions posed minimal actual risk to the reliability of the BES based on the following:

1. While the inaccurate Facility Rating did contribute to a sustained outage on the Pike Co.-Pinckard 230kV transmission line, the outage did not result in any System Operating Limits (SOLs) impacting reliability to customers or loss of BES load.

Additional Comments:



On October 7, 2010 NERC issued a Recommendation to Industry in the form of a NERC Alert entitled "Consideration of Actual Field Conditions in Determination of Facility Ratings". This recommendation was precipitated by a similar transmission line outage in Indiana in which the ground clearance was found to be less than NESC requirements in the field, contrary to design documentation used to establish the line's Rating. In their recommendation, NERC encouraged entities registered as Transmission Owners (TOs) to perform assessments of their BES facilities to identify discrepancies between in-field and design clearances, report the discrepancies to NERC and mitigate any identified issues.

APC voluntarily performed prioritized assessments on all BES transmission lines using a combination of Light Detection and Ranging (LiDAR) technology and field inspection methods to verify consistency between in-field clearances and design clearances. This effort was completed in 2013 with over 7,000 miles of BES transmission lines assessed. Discrepancies were identified, and APC developed and executed plans to mitigate all identified discrepancies.

APC reviewed the LiDAR assessments performed as part of the 2010 NERC Alert in their investigation of the cause of the July 18, 2015 outage on the Pike County-Pinckard 230kV transmission line. It was determined that, although the LiDAR data had been collected on the entire line, four spans of the line were inadvertently missed during the assessment process due to hand-offs between geographic Divisions based on confusion regarding the demarcation point of changes in responsibility. The span from support structure 210 to 211 was one of the four spans missed. The LiDAR data collected in 2011 was analyzed on Sunday, July 19, 2015, and it showed the span to have a ground clearance with insufficient margin to support the operational rating of the line based on application of the NESC criteria in APC's FRM.

NOTE: While submittal of a mitigation plan is not required until after a determination of a violation is confirmed, early submittal of a mitigation plan to address and remedy an identified deficiency is encouraged. Submittal of a mitigation plan shall not be deemed an admission of a violation. (See NERC Rules of Procedure, Appendix 4C, Section 6.4.)

 [A previous version](#) of this Mitigation Plan exists 

 This item was signed by Helen Nalley (hrnalley@southernco.com) on 11/17/2016 

 This item was marked ready for signature by Mark Pratt (mapratt@southernco.com) on 11/11/2016 

SECTION A: COMPLIANCE NOTICES & MITIGATION PLAN REQUIREMENTS

A.1 Notices and requirements applicable to Mitigation Plans and this Submittal Form are set forth in "[Attachment A - Compliance Notices & Mitigation Plan Requirements](#)" to this form.

[Yes] A.2 I have reviewed Attachment A and understand that this Mitigation Plan Submittal Form will not be accepted unless this box is checked.

SECTION B: REGISTERED ENTITY INFORMATION

B.1 Identify your organization

Company Name:

Company Address:

Compliance Registry ID:

B.2 Identify the individual in your organization who will be the Entity Contact regarding this Mitigation Plan.

Name:

SECTION C: IDENTIFICATION OF ALLEGED OR CONFIRMED VIOLATION(S) ASSOCIATED WITH THIS MITIGATION PLAN

C.1 This Mitigation Plan is associated with the following Alleged or Confirmed violation(s) of Reliability Standard listed below.

Standard:

Requirement	Regional ID	NERC Violation ID	Date Issue Reported
R1.	SERC2016-402329	SERC2016015499	2/2/2016

C.2 Identify the cause of the Alleged or Confirmed violation(s) identified above:

On July 19, 2015, as part of an internal investigation into the cause of a sustained outage on a 230kV transmission line, Alabama Power Company (APC) discovered that the Facility Rating used by System Operations for the Pike County-Pinckard 230kV transmission line did not accurately consider actual line clearances in the field that were different from design. Specifically, APC has been operating this transmission line with a Facility Rating that was not adjusted to account for changes made to a supporting structure in 1999.

The NESC minimum ground clearance is one of several criteria specified in APC's Facility Rating Methodology (FRM) to determine transmission line Ratings. The NESC criteria was applied accurately and in a manner consistent with APC's FRM based on original line design information. In fact, there was enough margin in the original design to support a re-rate of the line in 1998 to a higher operating temperature. However, one of the support structures (#211) was relocated in 1999, some 227 feet from its original location in an effort to address severe corrosion on the structure which was located in what had become a seasonally wet area. The relocation of support structure #211 extended the span in question to 2,052 feet. This resulted in a condition of insufficient ground clearance at the low point in the span, based on NESC requirements, despite an increase in the height of the relocated support by the line crew in a deliberate attempt to mitigate clearance impacts from increasing the span length. The Facility Rating for this line was not re-evaluated and changed to reflect the actual field conditions. Therefore, APC has been inadvertently operating this line outside its actual Facility Rating and Rated Electrical Operating Conditions since 1999.

APC has a Construction Card (change management) process in place, currently, that requires modifications to transmission lines/support structures to be reviewed/signed off by management. This process is an effective control that, had it been in place then, would have prevented APC from operating the Pike Co. - Pinckard line in violation of NESC clearance following the field modifications completed in 1999.

[Attachments \(0\)](#)

C.3 Provide any additional relevant information regarding the Alleged or Confirmed violations associated with this Mitigation Plan:

On October 7, 2010 NERC issued a Recommendation to Industry in the form of a NERC Alert entitled "Consideration of Actual Field Conditions in Determination of Facility Ratings". This recommendation was precipitated by a similar transmission line outage in Indiana in which the ground clearance was found to be less than NESC requirements in the field, contrary to design documentation used to establish the line's Rating. In their recommendation, NERC encouraged entities registered as Transmission Owners (TOs) to perform assessments of their BES facilities to identify discrepancies between in-field and design clearances, report the discrepancies to NERC and mitigate any identified issues.

APC voluntarily performed prioritized assessments on all BES transmission lines using a combination of Light Detection and Ranging (LiDAR) technology and field inspection methods to verify consistency between in-field clearances and design clearances. This effort was completed in 2013 with over 7,000 miles of BES transmission lines assessed. Discrepancies were identified, and APC developed and executed plans to mitigate all identified discrepancies.

APC reviewed the LiDAR assessments performed as part of the 2010 NERC Alert in their investigation of the cause of the July 18, 2015 outage on the Pike County-Pinckard 230kV transmission line. It was determined that, although the LiDAR data had been collected on the entire line, four spans of the line were inadvertently missed during the

assessment process due to hand-offs between geographic Divisions based on confusion regarding the demarcation point of changes in responsibility. The span from support structure 210 to 211 was one of the four spans missed. The LiDAR data collected in 2011 was analyzed on Sunday, July 19, 2015, and it showed the span to have a ground clearance with insufficient margin to support the operational rating of the line based on application of the NESC criteria in APC's FRM.

[Attachments \(\)](#)

SECTION D: DETAILS OF PROPOSED MITIGATION PLAN

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 Alleged or Confirmed violations identified above in Part C.1 of this form:

Alabama Power completed mitigating actions to both address the immediate non-compliance and to prevent recurrence following the sustained outage on the Pike County-Pinckard 230kV transmission line as follows:

1. Re-established the NESC clearances for the Pike Co.-Pinckard 230kV transmission line by installing a new H-frame support structure (#210a) in the span between support structures #210 and #211.
2. Reviewed the Facility Rating information for the Pike Co.-Pinckard 230kV transmission line to verify accurate identification of the Most Limiting Element (MLE) with consideration of field changes implemented in Item #1 (above).
3. Reviewed all 230kV and 500kV transmission lines that cross Division/maintenance area boundaries in Alabama to ensure all spans were included in LiDAR assessments.
4. Reviewed LiDAR data/analyses on record for all spans greater than 2,000 ft in length on all 230kV and 500kV transmission lines in Alabama for enhanced assurance of proper clearance.
5. APC Management to reinforce adherence to the established change management process with appropriate department managers via email or other methods.

[Attachments \(\)](#)

D.2 Provide the date by which full implementation of the Mitigation Plan will be, or has been, completed with respect to the Alleged or Confirmed violations identified above. State whether the Mitigation Plan has been fully implemented:

11/30/2016

D.3 Enter Milestone Activities, with due dates, that your organization is proposing, or has completed, for this Mitigation Plan:

No Milestones Defined

SECTION E: INTERIM AND FUTURE RELIABILITY RISK

E.1 Abatement of Interim BPS Reliability Risk: While your organization is implementing this Mitigation Plan the reliability of the Bulk Power Supply (BPS) 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 to mitigate this increased risk to the reliability of the BPS. (Additional detailed information may be provided as an attachment):

- (i) Alabama Power asserts that the reliability of the Bulk Power Supply (BPS) does not remain at higher risk and will not be negatively impacted prior to full completion of the action items in this Mitigation Plan due to a very low probability that additional NESC clearance violations exist. This is based on the following:
- Improvements in Alabama Power's change management processes since the field changes implemented on the Pike Co. - Pinckard 230kV transmission line in 1999
 - Completion of a LiDAR review of 100% of the 230kV and 500kV transmission lines in the 2010 - 2013 timeframe in response to the Facility Ratings NERC Alert
 - Prompt recognition of the association between the missed LiDAR analysis for the Pike Co. - Pinckard line and Division Area geographic boundaries, resulting in the prompt completion of a targeted review to ensure no additional line segments went unanalyzed
- (ii) Therefore, Alabama Power Company does not plan or propose to implement any additional interim mitigating actions.

[Attachments \(\)](#)

E.2 Prevention of Future BPS Reliability Risk: Describe how successful completion of this Mitigation Plan will prevent or minimize the probability that your organization incurs further risk of Alleged violations of the same or similar reliability standards requirements in the future. (Additional detailed information may be provided as an attachment):

Successful completion of this Mitigation Plan will minimize the probability that Alabama Power Company incurs further violations of FAC-009-1 associated with NESC ground clearance issues by the following:

1. Addressing the LiDAR data hand-off issue which will ensure that all similar clearance issues that existed during the collection of LiDAR data in the 2011-2013 have been identified regardless of when they occurred, and
2. Reinforcing APC's existing change management process to ensure that future modifications to transmission lines/support structures that have the potential to impact Facility Ratings are identified and reviewed appropriately. While the process was in place in 1999, it was revised in 2002 to expand the scope of activities subject to review/sign-off. It is believed that the current process (in place since 2002) will prevent similar issues that could result in violations.

[Attachments \(\)](#)

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 this Mitigation Plan for acceptance by SERC and approval by NERC, and
- b) If applicable, certifies that this Mitigation Plan was completed on or before the date provided as the 'Date of Completion of the Mitigation Plan' on this form, and
- c) Acknowledges:
 - I am Helen Nalley of Alabama Power Company
 - I am qualified to sign this Mitigation Plan on behalf of Alabama Power Company
 - I understand Alabama Power Company's 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 (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation (NERC CMEP))
 - I have read and am familiar with the contents of this Mitigation Plan
 - Alabama Power Company agrees to comply with, this Mitigation Plan, including the timetable completion date, as accepted by SERC and approved by NERC

SECTION G: REGIONAL ENTITY CONTACT

SERC Single Point of Contact (SPOC)

This item was signed by Scott Moore (rsmoore@southernco.com) on 12/7/2016

This item was marked ready for signature by Mark Pratt (mapratt@southernco.com) on 12/5/2016

MEMBER MITIGATION PLAN CLOSURE

All Mitigation Plan Completion Certification submittals shall include data or information sufficient for SERC to verify completion of the Mitigation Plan. SERC may request such additional data or information and conduct follow-up assessments, on-site or other Spot Checking, or Compliance Audits as it deems necessary to verify that all required actions in the Mitigation Plan have been completed and the Registered Entity is in compliance with the subject Reliability Standard. (CMEP Section 6.6) Data or information submitted may become part of a public record upon final disposition of the possible violation, therefore any confidential information contained therein should be marked as such in accordance with the provisions of Section 1500 of the NERC Rules of Procedure.

Name of Registered Entity submitting certification:

Alabama Power Company

Name of Standard of mitigation violation(s):

FAC-009-1

Requirement	Tracking Number	NERC Violation ID
R1.	SERC2016-402329	SERC2016015499

Date of completion of the Mitigation Plan:

11/30/2016

No Milestones Defined

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

- Alabama Power completed mitigating actions to address the immediate non-compliance and to prevent recurrence following the sustained outage on the Pike County-Pinckard 230kV transmission line as follows:
1. Re-established the NESC clearances for the Pike Co.-Pinckard 230kV transmission line by installing a new H-frame support structure (#210a) in the span between support structures #210 and #211.
 2. Reviewed the Facility Rating information for the Pike Co.-Pinckard 230kV transmission line to verify accurate identification of the Most Limiting Element (MLE) with consideration of field changes implemented in Item #1 (above).
 3. Reviewed all 230kV and 500kV transmission lines that cross Division/maintenance area boundaries in Alabama to ensure all spans were included in LiDAR assessments.
 4. Reviewed LiDAR data/analyses on record for all spans greater than 2,000 ft in length on all 230kV and 500kV transmission lines in Alabama for enhanced assurance of proper clearance.
 5. APC Management reinforced adherence to the established change management process with appropriate department managers.

Description of the information provided to SERC for their evaluation *

- The following documents/files are being provided to SERC as evidence of completion of the mitigating actions described in Part D of the Mitigation Plan:
1. STOMP Str 210A Installed Note_07_20_15.pdf: This document provides screen captures from the STOMP maintenance management system indicating installation of intermediate support structure #210A on 7/19/2015.
 2. Pike County-Pinckard 230KVTL Line Elements_07_31_2015.pdf and A-427920-002-00_Str #210A Installed.pdf: The first document identifies the individual elements that make up the Pike Co. - Pinckard Facility and shows that none of the elements changed as a result of installing intermediate structure #210A and that the MLE remains the 1033.5 45/7 ACSR conductor. The second document shows the as-left clearances following the installation of intermediate structure #210A to verify that NESC ground clearances are met and will not limit the rating of the line.
 3. Follow-up Evaluation of 500kV & 230kV TLs.pdf: This email verifies that all spans potentially impacted by the LiDAR data hand-off issue were assessed.
 4. Follow-up Evaluation of 500kV & 230kV TLs.pdf: This email verifies that evaluations were completed on all spans greater than 2,000 ft for all 230kV and 500kV transmission lines.
 5. Pinckard-Pike Co 230kV_Presentation.pdf: This presentation was communicated to APC Department managers to reinforce adherence to the established change management process for relocation, reconfiguration or modifications to transmission line structures.
 6. Pinckard-Pike 230 KV Review_Meeting Notice.pdf: This Outlook meeting notice identifies the attendees who participated in the presentation by APC management to reinforce adherence to the established change management process for relocation, reconfiguration or modifications to transmission line structures.

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 is complete, true and correct to the best of my knowledge.