



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

December 30, 2009

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

**Re: NERC Notice of Penalty regarding Entergy, FERC Docket No. NP10-\_-000**

Dear Ms. Bose:

The North American Electric Reliability Corporation (NERC) hereby provides this Notice of Penalty<sup>1</sup> regarding Entergy, NERC Registry ID NCR01234,<sup>2</sup> in accordance with the Federal Energy Regulatory Commission's (Commission or FERC) rules, regulations and orders, as well as NERC Rules of Procedure including Appendix 4C (NERC Compliance Monitoring and Enforcement Program (CMEP)).<sup>3</sup>

This Notice of Penalty is being filed with the Commission because, based on information from SERC Reliability Corporation (SERC), SERC and Entergy<sup>4</sup> have entered into a Settlement Agreement to resolve all outstanding issues arising from a preliminary and non-public assessment resulting in SERC's determination and findings of the enforceable alleged violation of FAC-003-1 R2. Pursuant to the Settlement Agreement, Entergy neither admits nor denies the alleged violation of FAC-003-1 R2, but Entergy has agreed to the proposed penalty of one

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

<sup>2</sup> SERC Reliability Corporation confirmed that Entergy was included on the NERC Compliance Registry as a Balancing Authority, Distribution Provider, Generator Operator, Generator Owner, Load Serving Entity, Planning Authority, Purchasing-Selling Entity, Resource Planner, Transmission Operator, Transmission Owner, Transmission Planner and Transmission Service Provider on May 31, 2007, and an Interchange Authority on March 20, 2008. As a Transmission Owner, Entergy was subject to the requirements of NERC Reliability Standard FAC-003-1. "Entergy," as listed on the NERC Compliance Registry, includes all six of the Entergy Operating Companies (Entergy Arkansas, Inc., Entergy Gulf States Louisiana, L.L.C., Entergy Louisiana, LLC, Entergy Mississippi, Inc., Entergy New Orleans, Inc. and Entergy Texas, Inc.), as well as Entergy Services, Inc., and is the authorized responsible entity for compliance with Reliability Standards for these individual companies within Entergy Corporation for the registered functions that operate in the SERC Region. Entergy Services, Inc. provides technical and administrative services to the Entergy Operating Companies, including Entergy Mississippi, Inc.

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

<sup>4</sup> The Settlement Agreement is between SERC Reliability Corporation and Entergy Services, Inc., as agent for Entergy Mississippi, Inc.

hundred fifty thousand dollars (\$150,000) to be assessed to Entergy, in addition to other remedies and mitigation actions to mitigate the instant alleged violation and preventative actions to ensure future compliance under the terms and conditions of the Settlement Agreement. Accordingly, the alleged violation identified as NERC Violation Tracking Identification Number SERC200800144 is being filed in accordance with the NERC Rules of Procedure and the CMEP.

On June 16, 2008, Entergy Mississippi, Inc., a subsidiary of Entergy Corporation (collectively, Entergy), self-reported to SERC its non-compliance with FAC-003-1 Requirement (R) 2 for its failure to implement an annual Transmission Vegetation Management Plan (TVMP) and to have systems and procedures in place to ensure that vegetation management work was completed according to work specifications, which resulted in a single vegetation outage.

### Statement of Findings Underlying the Alleged Violation

This Notice of Penalty incorporates the findings and justifications set forth in the Settlement Agreement executed on August 20, 2009 by and between SERC and Entergy Services, Inc., as agent for Entergy Mississippi, Inc., included as Attachment b. 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 (2007), NERC provides the following summary table identifying each alleged violation of a Reliability Standard resolved by the Settlement Agreement, as discussed in greater detail below.

Region	Registered Entity	NOC ID	NERC Violation ID	Reliability Std.	Req. (R)	VRF	Total Penalty (\$)
SERC	Entergy	NOC-086	SERC200800144	FAC-003-1	2	High	150,000

The purpose of Reliability Standard FAC-003-1 is to improve the reliability of the electric transmission systems by preventing outages from vegetation located on transmission rights-of-way (ROW) and minimizing outages from vegetation located adjacent to ROW, maintaining clearances between transmission lines and vegetation on and along the transmission ROW, and reporting vegetation related outages of the transmission systems to the respective Regional Entities and NERC.

FAC-003-1 R2 requires a Transmission Owner, such as Entergy, to create and implement an annual plan for vegetation management work to ensure the reliability of the system. The TVMP shall describe the methods used, such as manual clearing, mechanical clearing, herbicide treatment, or other actions. The plan should be flexible enough to adjust to changing conditions, taking into consideration anticipated growth of vegetation and all other environmental factors that may have an impact on the reliability of the transmission systems. Adjustments to the plan shall be documented as they occur. The plan should take into consideration the time required to obtain permissions or permits from

landowners or regulatory authorities. The entity shall have systems and procedures for documenting and tracking the planned vegetation management work and ensuring that the vegetation management work was completed according to work specifications. FAC-003-1 R2 has a “High” Violation Risk Factor (VRF).

According to the Settlement Agreement, on June 16, 2008 Entergy submitted a self-report for Entergy Mississippi, Inc, reporting that, on June 13, 2008, at 13:19:55 CDT, the Grand Gulf – Baxter Wilson 500 kV Transmission Line (#507), a part of the Entergy system, experienced an outage as a result of a flashover between the conductor and vegetation growing in the ROW near structure 37. At the time of the outage, the 500 kV Line had a flow of 338 MVA, which is approximately 37.5% of the line rating. According to the information collected from Entergy by SERC during the course of its compliance assessment, all relaying performed as expected, no additional lines tripped, and no load was affected by the outage. No Transmission Loading Relief (TLR) actions were called and no System Operating Limit (SOL) or Interconnection Reliability Operating Limits (IROLs) were violated as a result of this line outage. The line outage caused 100% of the flow on the Grand Gulf – Baxter Wilson 500 kV line to redirect across the Grand Gulf – Franklin 500 kV line. The resulting flow on the Grand Gulf – Franklin 500 kV line was 1,258 MVA, well below the line rating of 2,598 MVA, which is the same as the line rating for the Grand Gulf – Baxter Wilson 500 kV line.

The only operational issue that Entergy transmission operators observed was a slight voltage dip on the 500 kV bus at the Grand Gulf Nuclear Plant switchyard and the Port Gibson 115 kV bus. To correct the voltage issue, Entergy operators placed capacitor banks on line and increased the VAR output of nearby generators to bring the voltage back to nominal.

In attempting to correct the 500 kV voltage, Entergy transmission operators observed that the voltage on the 115 kV Port Gibson bus momentarily increased to a level above the nuclear offsite voltage limit and directed two capacitor banks be removed from service to resolve the voltage increase on the 115 kV system. The Port Gibson 115 kV line is primarily used for nuclear offsite voltage requirements. Grand Gulf Nuclear Plant maintained at least the required two sources of offsite power. This line outage did not result in any additional reporting or operational requirements under Grand Gulf Nuclear Power Plant’s technical specifications

On June 13, 2008, Entergy dispatched a helicopter patrol to investigate the scene and the patrol noted a tree with burned leaves located in a bottomland hardwood area with rugged terrain that is prone to flooding. On June 14, 2008, Entergy dispatched a crew using a bulldozer and marsh buggies and located a 31’7” Eastern Cottonwood tree that showed evidence of flashover damage, directly under the line. Entergy measured the distance from the de-energized line to the ground at the tree location to be 36’5.” As required by NERC Reliability Standard FAC-003-1 R1.2.2, Entergy’s TVMP defined the required Clearance 2 distance, for a 500 kV Line, as 16’ which exceeds the IEEE minimum of 14’69.” Therefore, the identified tree was approximately 11’ into the required Clearance 2 distance and 10’ into the IEEE minimum distance at the time of the flashover. A bulldozer was used to push over the tree and the additional brush surrounding the tree that had potentially encroached Clearance 2; the line was restored to service on June 14, 2008 at 11:37:08 CDT.

Entergy promptly self-reported the alleged violation first via phone and e-mail on the day of the outage and then, on June 16, 2008, Entergy filed a Self-Report to SERC concurrent with initiating its own investigation and root cause analysis into the vegetation outage. Entergy removed all offending vegetation between structures 36 and 38 on June 14, 2008 and conducted aerial patrols of all its Mississippi lines 200 kV and above by June 19, 2008. All other lines in the Entergy Operating Companies system were patrolled by air by July 15, 2008, thus mitigating the risk to bulk power system reliability, and no urgent corrective vegetation maintenance issues or Clearance 2 distance encroachments were identified. All vegetation conservatively identified as posing even a potential threat to encroaching Clearance 2 was immediately removed. All Entergy Operating Companies system-wide work was completed and confirmed by July 21, 2008. Additionally, a team of Entergy Vegetation Management and Transmission Compliance personnel conducted a root cause analysis, which included investigation and analysis of events leading up to the outage. This Causal Analysis team (“Team”) found that on May 19, 2008, when the last scheduled aerial patrol of the Grand Gulf – Baxter Wilson 500 kV Transmission Line was completed, the Entergy inspector had identified “tall brush” (*i.e.*, trees and other vegetation) that may have encroached the Clearance 2 distance in the ROW on the line between structures 36 and 37, where the subsequent June 13, 2008 flashover occurred. The inspector classified the tall brush as “Priority 2,” which under Entergy’s TVMP requires that the condition be corrected within seven days, specifically by May 26, 2008.

After the outage, the Team also found that Entergy had promptly communicated the Priority 2 condition to its contractor for removal in accordance with its TVMP; however, the contractor did not complete the corrective maintenance as required and expected. One week prior to the June 13, 2008 incident, during a corrective maintenance discussion about the Grand Gulf – Baxter Wilson 500 kV Transmission Line, the contractor did not communicate that the specific Priority 2 work had not been performed and Entergy did not verify that the work had been completed. After the incident, the contractor stated it did not complete the corrective maintenance because the surrounding area was under water when contractor crews were dispatched to the site. The Team determined that the root cause for the alleged violation was that Entergy’s TVMP did not include a step for verifying that urgent corrective maintenance work was completed by the contractor. The Team concluded that regardless of other contributing causes or conditions, if the Entergy vegetation management specialist had verified that the work had not been completed by the contractor within seven days of the May 19, 2008 aerial patrol, and had Entergy discovered the contractor's failure to perform the work within seven days, Entergy would have immediately dispatched its own crew or another contractor to remedy the situation within 24 hours, and the outage on June 13, 2008 would have been prevented. The lack of communication between the Entergy employee managing the vegetation management contract and the contractor was considered a contributing cause identified by Entergy’s causal analysis. At various times after the Priority 2 work was identified, more accurate communication could have prompted action that would have prevented the outage. A second contributing cause identified by the Team was the non-conservative classification of the vegetation condition at the outage site of Priority 2, instead of the more urgent Priority 1. Had the vegetation been ranked Priority 1, then the Imminent Threat process would have been implemented, requiring an immediate vegetation removal within 24 hours.

In response to Entergy's Self-Report, SERC Staff requested answers to a detailed questionnaire and Entergy supplied the requested data on July 8, 2008. On July 15, 2008, SERC requested Entergy to provide contingency studies and line outage simulations that modeled the potential impact on the bulk power system from the Grand Gulf – Baxter Wilson 500 kV Transmission Line outage. One week later, on July 22, 2008, Entergy provided the requested study data and it showed no thermal overload or voltage stability issues under multiple and extreme contingency conditions. On August 22, 2008, SERC held discussions with Entergy representatives and reviewed additional vegetation growth and line outage information. On September 30, 2008, Entergy provided SERC with studies commissioned by Entergy from a university professor specializing in vegetation growth to provide modeled height growth of a single Eastern Cottonwood tree in west central Mississippi.

On November 18, 2008, SERC Staff presented Entergy its findings and conclusions. Evidence showed that vegetation growing in the Grand Gulf – Baxter Wilson 500 kV Transmission Line ROW, previously identified by Entergy as requiring removal, caused a flashover resulting in an outage on the line.

SERC Staff considered the estimated growth rate of the tree, approximate flashover distance and estimated duration of the growing season to gauge the estimated duration of encroachment into Clearance 2 distance and into the IEEE minimum clearance distance for 500 kV lines. SERC determined that the encroachment into minimum clearance distances could have occurred between July 2007 and September 2007. However, SERC Staff determined to base the duration of the alleged violation on the dates upon which Entergy clearly failed to execute its TVMP, through the date the TVMP was revised to remedy the root cause of the execution failure. Thus, the alleged violation started on May 26, 2008, when Entergy failed to execute its TVMP when it did not remove the vegetation identified as a Priority 2 threat within seven days, until September 1, 2008,<sup>5</sup> when the TVMP was revised to improve systems and procedures to ensure vegetation work was completed according to work program specifications.

SERC assessed a penalty of one hundred fifty thousand dollars (\$150,000) for the referenced violation. In reaching this determination, SERC considered the following factors:

1. Entergy self-reported the alleged violation first via phone and e-mail the day of the outage and then through a written Self-Report two days later;
2. Entergy removed all offending vegetation near structure 37 on June 14, 2008;

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<sup>5</sup> The encroachment into Entergy's Clearance 2 distance and encroachment into IEEE minimum clearance distances could have occurred between July 2007 and September 2007. However, SERC Staff determined, with Entergy's concurrence, to base the duration of alleged violation on the explicit and easily identifiable dates upon which Entergy clearly failed to execute its TVMP, through the date the TVMP was revised to remedy the root cause of the execution failure. Entergy failed to execute its TVMP when it did not remove the vegetation identified on May 19, 2008 as a Priority 2 threat within seven days (by May 26, 2008). Accordingly, SERC found that the alleged violation by Entergy of NERC Reliability Standard FAC-003-1, Requirement 2 began on May 26, 2008 at which time, according to its TVMP, Entergy should have corrected the threat. The violation continued until September 1, 2008, when the TVMP was revised to improve systems and procedures to ensure vegetation work was completed according to specifications.

3. Entergy patrolled the remainder of its system lines (200 kV and above) by July 15, 2008;
4. Entergy has no prior violation of this standard or any closely related standard;
5. Entergy cooperated with SERC Staff during the assessment, and voluntarily and proactively conducted an internal detailed investigation and used a formal cause determination process to evaluate the event and to determine the root cause and subsequent corrective actions, sharing the results with SERC Staff and implementing the corrective and preventative actions, as discussed in the Settlement Agreement;
6. Entergy has an internal compliance program that was developed using Commission guidance and has participated in voluntary compliance programs prior to the effective date of the mandatory and enforceable reliability standards. Entergy's compliance program includes senior management support and direction as well as dedicated compliance personnel who are responsible for its implementation;
7. Entergy has a formal compliance culture and demonstrates a strong commitment to compliance at operational and corporate levels;
8. Entergy did not attempt to conceal the alleged violation which is evident by its prompt Self-Report;
9. Entergy agreed to expeditiously resolve this issue via settlement and promptly initiated various mitigation actions and preventative measures before receiving a Notice of Alleged Violation and Proposed Penalty or Sanction from SERC;
10. Entergy has implemented corrective measures in its Mitigation Plan that include the incorporation of provisions into individual performance plans to provide that maintaining compliance with FAC-003-1 is an integral component of personnel evaluation;
11. Entergy has implemented a wide-range of additional measures to protect against future violations of the same or similar requirements as discussed below;
12. Entergy's failure to execute its TVMP resulted in a vegetation contact, flashover and sustained outage of a 500 kV Transmission Line connected to Grand Gulf Nuclear Power Plant for a duration of just over 22 hours.
13. The circumstances giving rise to this alleged violation are distinguishable from other FAC-003-1 enforcement actions taken by SERC in the same time frame with other Transmission Owners where there was only a single tree growing on the ROW, as photographs of the site of the flashover on the day after the incident, taken before vegetation was removed, showed multiple trees in the ROW on the Grand Gulf – Baxter Wilson 500 kV Transmission Line between structures 36 and 37 in close proximity to the conductor at mid-span; and
14. Entergy had an opportunity to remove the threat upon discovery of the tall brush in the ROW on May 19, 2008 but failed to ensure the threat was removed.

According to the Settlement Agreement, SERC Staff concluded that the risk to BPS reliability was minimal because there was: (a) no loss of generation or load; (b) no generation re-dispatch was required; (c) operators responded accordingly to address voltage changes resulting from the loss of the line and the resulting voltage increase on the Port Gibson 115 kV line, which is primarily used for nuclear offsite voltage requirements, and the outage of the Grand Gulf – Baxter Wilson 500 kV Transmission Line did not result in any additional reporting or operational requirements under Grand Gulf Nuclear Plant’s technical specifications; and (d) studies and simulations provided by Entergy indicated that no thermal or stability limit violations occurred in multiple or extreme contingency event scenarios associated with the loss of the 500 kV line.

After consideration of these and the above factors, SERC determined that, in this instance, the penalty amount of one hundred fifty thousand dollars (\$150,000) is appropriate and bears a reasonable relation to the seriousness and duration of the alleged violations.

### **Status of Mitigation Plan and Settlement Agreement Actions<sup>6</sup>**

Entergy’s Mitigation Plan to address its self-reported alleged violation of FAC-003-1 R2 was dated August 20, 2008 and submitted to SERC on August 21, 2008. The Mitigation Plan was accepted by SERC on October 2, 2008 and was approved by NERC on October 21, 2008. The Mitigation Plan for this alleged violation is designated as MIT-08-1069 and was submitted as non-public information to FERC on October 21, 2008 in accordance with FERC orders.

Entergy’s Mitigation Plan required the following actions to fully mitigate the alleged FAC-003-1 R2 violation, root causes, contributing causes, and to prevent future non-compliance:

1. On June 14, 2008, the crew dispatched to the Grand Gulf – Baxter Wilson 500 kV Transmission Line site removed the Eastern Cottonwood tree that caused the flashover and outage, along with the other tall brush in the vicinity of the flashover location, and completed floor vegetation maintenance through the spans between structures 36 and 38 from edge to edge of the ROW;
2. Entergy completed aerial patrols of all Mississippi lines 200 kV and above on June 19, 2008. On July 15, 2008, aerial patrol of lines 200 kV and above throughout the rest of the Operating Companies’ system outside Mississippi were completed;
3. Entergy retrained its personnel on identifying, prioritizing and communicating vegetation conditions as they directly relate to Reliability Standards. Training was completed on June 25, 2008;
4. Entergy conducted aerial patrol training of inspectors, focusing on identifying the correct priority for vegetation conditions - completed on June 25, 2008;
5. Entergy reviewed contracts and work practices in other grids to confirm that the conditions leading to this violation do not exist in other grids within Entergy. The review was completed on June 25, 2008 and conditions did not exist in other Entergy operating systems;

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<sup>6</sup> See 18 C.F.R § 39.7(d)(7).

6. Entergy conducted the first of its training of all Entergy vegetation personnel on the Imminent Threat Communication Process, which was completed on June 25, 2008;
7. The vegetation contractor was fined on August 22, 2008 under the work contract for skipping work and Entergy has reduced the future work load for the vegetation contractor;
8. Entergy revised its TVMP procedure (Rev 2) with an effective date of September 1, 2008:
  - a. to establish improved systems and procedures for ensuring that the vegetation management work was completed according to work specifications by (i) requiring Entergy aerial patrol inspectors to communicate due dates for corrective maintenance work, (ii) requiring Entergy personnel to verify completion of urgent corrective maintenance work;
  - b. to require Entergy personnel to perform the aerial inspections, under normal circumstances, and exceptions will require approval from the Manager, Vegetation and ROW;
  - c. to increase the number of required aerial patrols annually from two to three. Additionally, the added patrol will focus solely on vegetation;
  - d. to require personnel to complete Imminent Threat process training at least annually; and
  - e. to require aerial patrol inspectors to use the standard approved Flight Form to record inspection data.
9. The Entergy supervisor involved in the communication gap with the contractor has completed an internal HR Development Plan to improve communication, organizational and management skills and the involved employee completed an HR Personal Improvement Plan to improve communications and organizational skills - completed on November 5, 2008;
10. Entergy conducted the second training session for its personnel on identifying, prioritizing and communicating vegetation conditions as they directly relate to Reliability Standards and retrained of all Entergy's vegetation personnel on the Imminent Threat Communication Process - completed on December 11, 2008;

Entergy certified on December 15, 2008 to SERC that its Mitigation Plan was completed on December 11, 2008. To support its certification of completion, Entergy submitted the following evidence:

- a summary document detailing all mitigating and preventative actions set forth in the Mitigation Plan along with the status and relevant completion dates;
- copies of Entergy's TVMP detailing the revisions made to address causal factors identified through Entergy's self-assessment following the incident and incorporating suggestions by SERC Staff;

- training session agendas, tests and records of attendance as evidence of completion of training tasks identified in the Mitigation Plan;
- letters of attestation of completion of mitigating and preventative actions signed by Entergy officers;
- photographs of the Grand Gulf – Baxter Wilson 500 kV Transmission Line and ROW before and after the tree was removed;
- invoices from the aviation firm to show the completion of additional patrols;
- notes from aerial patrols throughout Entergy’s service area following the vegetation outage on June 13, 2008;
- evidence of implementation of manager and employee human resources performance improvement actions;
- notifications to the vegetation contractor imposing a fine for its failure to complete assigned work and initiating a corresponding reduction in work load due to the failure;
- an e-mail confirming completion of the contract and work practices review; and
- Entergy’s TVMP (Rev. 2) effective September 1, 2008.

On January 29, 2009, SERC reviewed the evidence submitted by Entergy and verified that Entergy’s Mitigation Plan was completed on December 11, 2008. With the completion of the Mitigation Plan, SERC determined that Entergy was in compliance with FAC-003-1 R2.

In addition to the actions required by its Mitigation Plan, the Settlement Agreement required Entergy to implement the preventative measures summarized below to help prevent a recurrence of a similar violation:<sup>7</sup>

1. Entergy conducted training with vegetation personnel on January 22, 2009 to review modifications to the TVMP (draft Rev. 3) so as to ensure that all have a clear understanding of the program; and
2. Entergy finalized its TVMP (Rev. 3), based on editorial feedback from SERC Staff during Mitigation Plan completion verification, for clarity and removal of ambiguity, to implement the following preventative measures: (a) clearly list the requirements for verification of completion of urgent corrective maintenance work; (b) more clearly state the requirement that qualified Entergy personnel conduct annual aerial and ground patrol inspections and that any exceptions to this nominal requirement will require approval from the Manager, Vegetation and ROW; (c) improve titling of reporting forms used in the TVMP; (d) clarify, for Clearance 1, the vertical limits inside ROW floor; and (e) correct and update the revision history – TVMP (Rev.3) approved effective January 28, 2009.

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<sup>7</sup> The estimated costs to Entergy to implement the preventative measures are approximately \$1 million annually.

Entergy completed its Settlement Agreement actions on April 30, 2009. Entergy submitted the following documentation to support its completion of the actions noted in 2. above:

- Entergy's TVMP (Rev. 3) effective January 28, 2009; and
- agendas and rosters for training sessions conducted with vegetation personnel to ensure that all have a clear understanding of the program.

SERC reviewed this documentation during its review of Entergy's Mitigation Plan completion and determined that it sufficiently supports a finding that Entergy has completed these additional preventative measures.

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

#### **Basis for Determination**

Taking into consideration the Commission's direction in Order No. 693, the NERC Sanction Guidelines and the Commission's July 3, 2008 Guidance Order,<sup>9</sup> the NERC BOTCC reviewed the Settlement Agreement and supporting documentation on November 9, 2009. The NERC BOTCC approved the Settlement Agreement, including SERC's imposition of a financial penalty of one hundred fifty thousand dollars (\$150,000) against Entergy and other actions to promote prospective compliance required under the terms and conditions of the Settlement Agreement. In approving the Settlement Agreement, the NERC BOTCC reviewed the applicable requirements of the Commission-approved Reliability Standards and the underlying facts and circumstances of the alleged violation at issue.

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

- (1) Entergy self-reported the alleged violation;
- (2) The referenced violation is the first violation for Entergy of NERC Reliability Standards;
- (3) No misrepresentation or concealment of facts was evident;
- (4) Entergy has a formal compliance culture and demonstrates a strong commitment to compliance at operational and corporate levels;
- (5) SERC reported that Entergy cooperated with SERC Staff; and
- (6) As described above, Entergy has implemented a wide-range of measures to address the alleged violation and to protect against future violations of the same or similar requirements.

For the foregoing reasons, the NERC BOTCC approves the Settlement Agreement and believes that the proposed one hundred fifty thousand dollars (\$150,000) penalty is appropriate for the violation and circumstances in question, and consistent with NERC's goal to promote and ensure reliability of the bulk power system.

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

<sup>9</sup> *North American Electric Reliability Corporation*, "Guidance Order on Reliability Notices of Penalty," 124 FERC ¶ 61,015 (2008).

Pursuant to Order No. 693, 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) Entergy's Self-Report dated June 16, 2008, included as Attachment a;
- b) Settlement Agreement by and between Entergy and SERC executed August 20, 2009, included as Attachment b;
  - i) Mitigation Plan designated as MIT-08-1069 dated August 20, 2008 and submitted August 21, 2008, included in the Settlement Agreement as Appendix A-1;
  - ii) Entergy's Certification of Completion for the Mitigation Plan dated December 15, 2008, included in the Settlement Agreement as Appendix A-2; and
  - iii) SERC's Verification of Completion for the Mitigation Plan dated January 28, 2009, included in the Settlement Agreement as Appendix A-3.

**A Form of Notice Suitable for Publication<sup>10</sup>**

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

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<sup>10</sup> See 18 C.F.R § 39.7(d)(6).

## Notices and Communications

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

<p>David N. Cook* Vice President and General Counsel North American Electric Reliability Corporation 116-390 Village Boulevard Princeton, New Jersey 08540-5721 (609)452-8060 (609) 452-9550 – facsimile david.cook@nerc.net</p> <p>Marcus V. Brown* Vice President &amp; Deputy General Counsel for Litigation Entergy Services, Inc. 639 Loyola Avenue 26<sup>th</sup> Floor New Orleans, LA 70113 (504) 576-2765 (281) 297-5302 - facsimile Mbrown7@entergy.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>	<p>Rebecca J. Michael* Assistant General Counsel Holly A. Hawkins* Attorney North American Electric Reliability Corporation 1120 G Street, N.W. Suite 990 Washington, D.C. 20005-3801 (202) 393-3998 (202) 393-3955 – facsimile rebecca.michael@nerc.net holly.hawkins@nerc.net</p> <p>Thomas J. Galloway* Vice President and Director of Compliance SERC Reliability Corporation 2815 Coliseum Centre Drive Charlotte, NC 28217 (704) 940-8205 (704) 357-7914 – facsimile tgalloway@serc1.org</p> <p>Kenneth B. Keels, Jr.* Manager of Compliance Enforcement SERC Reliability Corporation 2815 Coliseum Centre Drive Charlotte, NC 28217 (704) 940-8214 (704) 357-7914 – facsimile kkeels@serc1.org</p> <p>Marisa A. Sifontes* Compliance Legal Counsel SERC Reliability Corporation 2815 Coliseum Centre Drive, Suite 500 Charlotte, NC 28217 (704) 494-7775 (704) 357-7914 – facsimile msifontes@serc1.org</p>
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**Conclusion**

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

Respectfully submitted,

/s/ Rebecca J. Michael

Rebecca J. Michael  
Assistant General Counsel  
Holly A. Hawkins  
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cc: Entergy  
SERC Reliability Corporation

Attachments

## **Attachment a**

### **Entergy's Self-Report dated June 16, 2008**



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

Report Type (please check):  Self-Report       Complaint

Date of Report:   6/16/2008  

NAME OF PERSON REPORTING POSSIBLE STANDARD VIOLATION(S)		
CONTACT NAME	CONTACT TELEPHONE NUMBER	
Raymond Yates	504-615-3004 / 504-219-4219	
CONTACT E-MAIL	CONTACT FAX	
ryates@entergy.com	504-219-4301	
REPORTING COMPANY NAME	ANONYMOUS? (Y/N)	
ENTERGY for Entergy Mississippi Inc.	N	
NERC OR REGIONAL STANDARD(S) AND SPECIFIC REQUIREMENT(S) POSSIBLY VIOLATED		
NAME OF COMPANY POSSIBLY VIOLATING STANDARD(S)	ENTITY FUNCTION TYPE(S)	
ENTERGY for Entergy Mississippi Inc.	TO	
STANDARD # AND VERSION	MEASURE / REQUIREMENT	DATE OF POSSIBLE VIOLATION(S)
FAC-003-1	R2 – Failure to maintain clearance	6/13/2008
POSSIBLE VIOLATION DESCRIPTION, REASON FOR COMPLAINT, OR QUESTION		
On Friday June 13, 2008 at 13:19:55 hours a single vegetation outage occurred on Entergy's Grand Gulf to Baxter Wilson 500 KV Transmission Line (#507) near Port Gibson, Mississippi.		
RELIABILITY IMPACT (IF KNOWN)		

SERC Staff will contact the person providing the report as soon as possible.  
**If you do not receive a response from SERC Staff within 2 business days please contact the SERC office (704-357-7372).**

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

## **Attachment b**

# **Settlement Agreement by and between Entergy and SERC executed August 20, 2009**

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**SETTLEMENT AGREEMENT**

**OF**

**SERC RELIABILITY CORPORATION**

**AND**

**ENTERGY SERVICES, INC., AS AGENT FOR ENTERGY MISSISSIPPI, INC.**

**I. INTRODUCTION**

1. SERC Reliability Corporation (“SERC”) and Entergy Services, Inc., as agent for Entergy Mississippi, Inc. (“EMI”) (hereinafter collectively referred to as “Entergy”), enter into this Settlement Agreement (“Agreement”) to resolve all outstanding issues arising from a preliminary and non-public assessment arising from a Self-Report submitted by Entergy dated June 16, 2008 and resulting in SERC’s determination and findings, pursuant to the North American Electric Reliability Corporation (“NERC”) Rules of Procedure, of a violation by Entergy of the NERC Reliability Standard FAC-003-1 (SERC Issue Tracking No. 08-058; NERC Violation ID No. SERC200800144).

**II. STIPULATION**

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

**Background**

3. The Entergy System is comprised of six operating companies: Entergy Arkansas, Inc., Entergy Gulf States Louisiana, L.L.C., Entergy Louisiana, LLC, Entergy Mississippi, Inc., Entergy New Orleans, Inc., and Entergy Texas, Inc. that operate in the SERC region (the “Entergy Operating Companies”). Entergy Services, Inc. provides technical and administrative services to the Entergy Operating Companies, including EMI.
4. The Entergy Operating Companies operate an integrated electric system and are engaged primarily in electric power production and retail distribution operations. The Entergy Operating Companies deliver electricity to 2.7 million utility customers in Arkansas, Louisiana, Mississippi and Texas.

5. The Entergy Operating Companies own and operate power plants with approximately 30,000 megawatts of electric generating capacity. Below is a table that outlines the miles of Transmission lines owned by the Entergy Operating Companies:

<b>Voltage Level (kV)</b>	<b>Entergy Arkansas, Inc.</b>	<b>Entergy Gulf States Louisiana, L.L.C., and Entergy Texas, Inc.</b>	<b>Entergy Louisiana, LLC</b>	<b>Entergy Mississippi, Inc</b>	<b>Entergy New Orleans, Inc.</b>	<b>Total</b>
<b>69</b>	11	1549	30	0	0	<b>1590</b>
<b>115</b>	2137	30	1624	1884	148	<b>5823</b>
<b>138</b>	0	2272	15	0	0	<b>2287</b>
<b>161</b>	1483	0	0	6	0	<b>1489</b>
<b>230</b>	159	832	649	551	56	<b>2247</b>
<b>345</b>	44	37	16	0	0	<b>97</b>
<b>500</b>	892	544	247	358	0	<b>2041</b>
<b>Total</b>	<b>4,726</b>	<b>5,264</b>	<b>2,581</b>	<b>2,799</b>	<b>204</b>	<b>15,574</b>

6. Entergy<sup>1</sup> is registered with SERC as a Balancing Authority (BA), Distribution Provider (DP), Generator Owner (GO), Generator Operator (GOP), Interchange Authority (IA), Load Serving Entity (LSE), Purchasing-Selling Entity (PSE), Resource Planner (RP), Transmission Owner (TO), Transmission Operator (TOP), Transmission Planner (TP), and Transmission Service Provider TSP (NERC Compliance Registry ID# NCR01234).

### **Alleged Violation**

7. NERC Reliability Standard FAC-003-1 “Transmission Vegetation Management Program” seeks to improve grid reliability by preventing outages caused by vegetation located on or adjacent to transmission rights of way (“ROW”), through the use of programmatic vegetation management, establishment of scientifically derived clearances for vegetation in or adjacent to the ROW, and requiring reporting of vegetation caused outages. The Standard requires Transmission Owners to establish a formal transmission vegetation management program (“TVMP”) which includes the Transmission Owner’s objectives, practices, approved procedures, and work specifications. Requirement 2 of the Standard requires the Transmission Owner to create and implement a plan that is formal,

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<sup>1</sup> The combined Entergy System Operating Companies and ESI are registered simply as “Entergy” under a single NERC registration number.

but flexible enough to respond to planned maintenance and environmentally induced emergent vegetation threats to system reliability.

8. Specifically, NERC Reliability Standard FAC-003, Requirement 2 requires that:

“[t]he Transmission Owner shall create and implement an annual plan for vegetation management work to ensure the reliability of the system. The plan shall describe the methods used, such as manual clearing, mechanical clearing, herbicide treatment, or other actions. The plan should be flexible enough to adjust to changing conditions, taking into consideration anticipated growth of vegetation and all other environmental factors that may have an impact on the reliability of the transmission systems. Adjustments to the plan shall be documented as they occur. The plan should take into consideration the time required to obtain permissions or permits from landowners or regulatory authorities.”

9. Requirement 2 of NERC Reliability Standard FAC-003-1 also requires that:

“[e]ach Transmission Owner shall have systems and procedures for documenting and tracking the planned vegetation management work and ensuring that the vegetation management work was completed according to work specifications.”<sup>2</sup>

10. NERC Reliability Standard FAC-003-1, Requirement 1.2 states that a TVMP requires, among other things, that:

“the Transmission Owner shall establish clearances to be achieved at the time of vegetation management work identified herein as Clearance 1, and shall also establish and maintain a set of clearances identified herein as Clearance 2 to prevent flashover between vegetation and overhead ungrounded supply conductors.”<sup>3</sup>

11. NERC Reliability Standard FAC-003-1, Requirement 2 has a Violation Risk Factor of “High,” as established by NERC and approved by the Federal Energy Regulatory Commission (“Commission”).
12. On Friday June 13, 2008 at 13:19:55 hours CDT, an outage occurred on Entergy Mississippi, Inc.’s Grand Gulf to Baxter Wilson 500 kV Transmission Line (#507) near Port Gibson, Mississippi as a result of a flashover between the conductor and vegetation growing in the ROW. All relaying performed as expected, no additional lines tripped, and no load was affected by the outage. No Transmission Loading Relief (“TLR”) actions were called and no System Operating Limit (SOL) or Interconnection Reliability Operating Limits were violated as a result of this line outage. The line was restored to service on June

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<sup>2</sup> NERC Reliability Standard FAC-003-1 — Transmission Vegetation Management Program, Approved by NERC Board of Trustees on February 7, 2006, Approved by FERC effective June 18, 2007, Requirement 2.

<sup>3</sup> NERC Reliability Standard FAC-003-1 — Transmission Vegetation Management Program, Approved by NERC Board of Trustees on February 7, 2006, Approved by FERC effective June 18, 2007, Requirement 1.2.

14, 2008 at 11:37:08. The total outage time on the line was 22 hours and 17 minutes.

13. Entergy reported the outage to SERC via telephone and e-mail on June 14, 2008 and followed up with a formal self-report June 16, 2008.
14. The outage resulted in minimal reliability impact on the Bulk Power System. The flow on the Grand Gulf – Baxter Wilson 500 kV line immediately before the trip was 338 MVA, approximately 37.5% of the line rating. The line outage caused 100% of the flow on the Grand Gulf – Baxter Wilson 500 kV line to redirect across the Grand Gulf – Franklin 500 kV line. The resulting flow on the Grand Gulf – Franklin 500 kV line was 1,258 MVA, well below the line rating of 2,598 MVA, which is the same as the line rating for the Grand Gulf – Baxter Wilson 500 kV line. The only operational issue that Entergy transmission operators observed was a slight voltage dip on the 500 kV bus and the Port Gibson 115 kV bus. To correct the voltage issue, Entergy operators placed capacitor banks on line and increased the VAR output of nearby generators to bring the voltage back to nominal. In attempting to correct the 500 kV voltage, Entergy transmission operators observed that the voltage on the 115 kV Port Gibson bus momentarily increased to a level above the nuclear offsite voltage limit and directed two capacitor banks be removed from service to resolve the voltage increase on the 115 kV system. The Port Gibson 115 kV line is primarily used for nuclear offsite voltage requirements. Grand Gulf Nuclear Plant maintained at least the required two sources of offsite power. This line outage did not result in any additional reporting or operational requirements under Grand Gulf's technical specifications.
15. Immediately following the outage on June 13, 2008, Entergy dispatched a helicopter patrol to investigate the scene. The patrol noted a tree with burned leaves in the Grand Gulf – Baxter Wilson ROW near structure 37. Line and vegetation crews were quickly dispatched but could not safely reach the site at that time due to darkness and rugged terrain. The tree was located in a bottomland hardwood area that is prone to flooding from the Mississippi and Big Black Rivers. The area is characterized by high relief topography (steep banks) and flooded lowlands. Access to the ROW is limited to unimproved logging roads and trails, which are also subject to flooding. At dawn on June 14, 2008, a crew using marsh buggies and a bulldozer proceeded to the site.
16. On the morning of June 14, 2008, the crew arrived at the site to discover an Eastern Cottonwood tree, showing evidence of flashover damage, located mid-span directly under the 500 kV conductors. The height of the tree was 31 feet, 7 inches and the distance from the line to the ground at the tree location was measured to be 36'5" with the line de-energized, thus with no additional sag from line loading. Entergy's TVMP at the time of the flashover defined Clearance 2 as 16 feet for 500 kV lines, a value in excess of the 14.69 foot IEEE minimum clearance level required by NERC Reliability Standard FAC-003-1, Requirement

1.2.2 for 500 kV lines.<sup>4</sup> The tree was approximately 11 feet into Clearance 2 and approximately 10 feet into the IEEE minimum clearance distance at the time of the flashover. Although the tree itself was not standing in water, the nearby ROW was flooded. A bull dozer was used to push over the tree that showed evidence of flashover damage along with additional brush surrounding the tree that had potentially encroached Clearance 2. Service on the line was restored at 11:37:08 CDT on June 14, 2008.

17. Entergy immediately undertook several actions to preclude similar occurrences or a reoccurrence:
  - i. On June 14, 2008, the crew dispatched to respond to the outage used a bull dozer and marsh master buggy to push over trees and brush destroying the vegetation's root system. This floor vegetation maintenance was completed for all vegetation through the spans between structures 36 and 38 from edge to edge of the ROW.
  - ii. Entergy completed aerial patrols of all Mississippi lines 200 kV and above on June 19, 2008. On July 15, 2008, Entergy completed an aerial patrol of lines 200 kV and above throughout the rest of the Entergy Operating Companies' system outside Mississippi. During these patrols Entergy did not identify any other encroachments of Clearance 2. All vegetation conservatively identified as posing even a potential threat to encroaching Clearance 2 was immediately removed. All system-wide work was completed and confirmed by July 21, 2008.
  - iii. Entergy re-trained its personnel on identifying, prioritizing and communicating vegetation conditions as they directly relate to Reliability Standards. Training was completed on June 25, 2008.
  - iv. The re-training of all Entergy vegetation personnel on the Imminent Threat Communication Process was also completed on June 25, 2008.
18. A team of Entergy Vegetation Management and Transmission Compliance personnel conducted a "root cause analysis," which included investigation and analysis of events leading up to the outage. The Causal Analysis team found that on May 19, 2008, when the last scheduled aerial patrol of the Grand Gulf – Baxter Wilson 500 kV line was completed, the Entergy inspector had identified "tall brush" (i.e., trees and other vegetation) that may have encroached Clearance 2 in the ROW on the Grand Gulf – Baxter Wilson 500 kV line between structures 36 and 37 where the June 13, 2008 flashover occurred. The inspector classified the tall brush as "Priority 2," ("P2") which under Entergy's TVMP requires that the condition be corrected within seven days.

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<sup>4</sup> NERC Reliability Standard FAC-003-1, Requirement 1.2.2 states that the "Transmission Owner-specific minimum clearance distances shall be no less than those set forth in the Institute of Electrical and Electronics Engineers (IEEE) Standard 516-2003 (Guide for Maintenance Methods on Energized Power Lines) and as specified in its Section 4.2.2.3, Minimum Air Insulation Distances without Tools in the Air Gap."

19. The team also found that Entergy had promptly communicated the P2 condition to its contractor for removal in accordance with the TVMP. The contractor did not complete the corrective maintenance as required and expected. The contractor told the Entergy team that its reason for not completing the corrective maintenance was due to the surrounding area being under water when contractor crews were dispatched to the site.
20. In the week prior to June 13, 2008 an Entergy vegetation specialist discussed the general status of corrective maintenance on the Grand Gulf – Baxter Wilson 500 kV line with the contractor, but the contractor did not communicate that the specific P2 work had not been performed, and the Entergy specialist did not verify that the work had been completed. As described below, pursuant to its Mitigation Plan Entergy has since revised its TVMP procedure to require Entergy personnel to verify completion of urgent corrective maintenance work.
21. Upon receipt of Entergy’s Self-Report, SERC Staff confirmed that Entergy was listed on NERC’s Compliance Registry as a Transmission Owner subject to the Requirements of NERC Reliability Standard FAC-003-1 and commenced its detailed compliance assessment. On June 17, 2008, SERC Staff issued to Entergy a Compliance Assessment Notice advising Entergy of the initiation of a formal assessment to determine its compliance relative to NERC Reliability Standard FAC-003-1 and directing Entergy to preserve all relevant records and information. SERC Staff promptly established direct contact with representatives of Entergy to begin the process of gathering information and documentation for the detailed compliance assessment. SERC Staff also reported the possible violations to NERC on June 17, 2008, which, in turn, reported the possible violations to the Commission on June 27, 2008, in accordance with the Compliance Monitoring and Enforcement Program (CMEP) of the NERC Rules of Procedure.
22. On June 20, 2008 Entergy provided SERC with photographs from the site where the tree contact occurred before and after the vegetation was removed. On June 25, 2008 SERC requested Entergy answer a detailed questionnaire as part of the detailed assessment, and Entergy supplied the requested data on July 8, 2008.
23. On July 15, 2008, SERC Staff requested that Entergy provide studies and line outage simulations that model the potential impact on the Bulk Power System from an outage of the Grand Gulf – Baxter Wilson 500 kV transmission line under multiple and extreme contingencies. SERC Staff received the study data on July 22, 2008. The studies and simulations showed no thermal overload or voltage stability issues under multiple and extreme contingency conditions as a result of the outage of the Grand Gulf – Baxter Wilson 500 kV transmission line.
24. By letter dated July 21, 2008, Entergy requested settlement negotiation to address the possible violation of NERC Reliability Standard FAC-003-1.
25. On August 22, 2008, SERC Compliance Staff met with Entergy representatives to review additional information related to the line outage and requested more information about the vegetation growth. On September 30, 2008, Entergy provided SERC with studies commissioned by Entergy from a Professor of

Quantitative Silviculture from the University of Missouri to provide modeled height growth of a single eastern cottonwood tree in west central Mississippi.

26. As a result of its detailed compliance assessment, and because evidence showed that vegetation in the form of an Eastern Cottonwood tree growing in the ROW, previously identified by Entergy as requiring removal, caused a flashover that resulted in an outage of the Grand Gulf – Baxter Wilson 500 kV transmission line, SERC Staff concluded that the facts and evidence supported a finding that Entergy violated NERC Reliability Standard FAC-003-1, Requirement 2 for its failure to “implement an annual plan for vegetation management work to ensure the reliability of the system” and for its failure to “have systems and procedures for...ensuring that the vegetation management work was completed according to work specifications.” In a meeting with Entergy on November 18, 2008, attended by Entergy’s Vice President of Transmission, Vice President of Regulatory Compliance, Director of Transmission Compliance and Assistant General Counsel, SERC Staff presented its findings and conclusions, the potential daily penalty exposure, and SERC Staff’s total proposed penalty based on SERC Staff’s assessment of the seriousness of the alleged violation and Entergy’s efforts to remedy the alleged violation.

### **III. PARTIES’ SEPARATE REPRESENTATIONS**

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

27. SERC Staff concluded that Entergy violated NERC Reliability Standard FAC-003-1, Requirement 2. While Entergy has an applicable TVMP, SERC Staff identified evidence of a failure in the implementation of the program, which resulted in a flashover and outage. As a Transmission Owner, Entergy was required by NERC Reliability Standard FAC-003-1, Requirement 2 to implement its TVMP to prevent outages from vegetation located on transmission Rights of Way and to have systems and procedures for ensuring that the vegetation management work was completed according to work specifications. The flashover on the Grand Gulf – Baxter Wilson 500 kV line on June 13, 2008 is evidence that Entergy failed in this instance to carry out its TVMP in a manner so as to prevent this contact or flashover with vegetation, and thus violated NERC Reliability Standard FAC-003-1, Requirement 2.
28. SERC finds that, during the aerial inspection on May 19, 2008, the Entergy aerial patrol identified vegetation that could have resulted in flashover and such vegetation was required to be removed within seven days. While Entergy’s TVMP called for action to correct the threat within seven days, Entergy failed to act in accordance with its TVMP. The failure to implement the TVMP requirement to act within seven days in this instance resulted in the outage on June 13, 2008. Had Entergy taken action within the seven day period specified in the TVMP, the outage would not have occurred.
29. SERC Staff, considered the estimated growth rate of the tree, approximate flashover distance, and estimated duration of the growing season from the

silviculture report commissioned by Entergy and submitted to SERC, to gauge the estimated duration of encroachment into Clearance 2 and into IEEE minimum clearance distance for 500 kV lines. Based on the report, the encroachment into Entergy's Clearance 2 distance and encroachment into IEEE minimum clearance distances could have occurred between July 2007 and September 2007. However, SERC Staff determined, with Entergy's concurrence, to base the duration of alleged violation on the explicit and easily identifiable dates upon which Entergy clearly failed to execute its TVMP, through the date the TVMP was revised to remedy the root cause of the execution failure. Entergy failed to execute its TVMP when it did not remove the vegetation identified on May 19, 2008 as a Priority 2 threat within seven days (by May 26, 2008).

30. Accordingly, SERC finds that the alleged violation by Entergy of NERC Reliability Standard FAC-003-1, Requirement 2 began on May 26, 2008 at which time, according to its TVMP, Entergy should have corrected the threat. The violation continued until September 1, 2008, when the TVMP was revised to improve systems and procedures to ensure vegetation work was completed according to work specifications. The vegetation that caused the outage and other tall brush surrounding the offending vegetation, which may have encroached Clearance 2 space, was removed on June 14, 2008, and no other instances of encroachment were identified through patrols conducted following the outage, therefore the risk to reliability of the Bulk-Power System was mitigated on July 15, 2008, when the patrols were completed.
31. SERC considered a number of factors in determining the appropriate penalty and sanction required for this violation, including:
  - i. Entergy has an internal compliance program that was developed using Commission guidance.<sup>5</sup> Entergy has participated in voluntary compliance programs prior to the effective date of the mandatory and enforceable reliability standards. This comprehensive program includes senior management support and direction as well as dedicated compliance personnel who are responsible for its implementation.
  - ii. Entergy promptly self-reported the possible violation, first by phone call directly to SERC's self-reporting line the same afternoon as the outage, and to SERC's Manager of Compliance Enforcement the next day, followed up by e-mail and a detailed written self-report, all within 24 hours of the occurrence.<sup>6</sup>
  - iii. Entergy removed the offending vegetation along the span where the flashover occurred by June 14, 2008 and, to ensure no similar risk of vegetation outage existed and to help prevent recurrence, Entergy patrolled all of its Mississippi lines by June 19, 2008, with the remainder of its system lines (200kV and above) patrolled by July 15, 2008 (either on ground or in

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<sup>5</sup> *Policy Statement on Compliance*, 125 FERC ¶ 61,058 at PP 6, 13-15 (October 16, 2008).

<sup>6</sup> *Policy Statement on Compliance*, 125 FERC ¶ 61,058, P 19 (October 16, 2008).

air, with on ground follow up). During the patrols, Entergy did not identify any vegetation meeting its Priority 1 classification. A Priority 1 classification is an urgent corrective maintenance issue for vegetation that may break Minimum Vegetation Flashover Approach Distance (Clearance 2), within 24 hours. Since no other encroachments of Clearance 2 were identified, SERC Staff considered that Entergy had mitigated the reliability risk of the alleged violation by July 15, 2008 while it addressed the root cause of the alleged violation by modifying its TVMP (Rev 2) on September 1, 2008.

- iv. Entergy has no prior violation of this standard or any closely-related standard and has experienced no other sustained transmission outages resulting from vegetation growing into the line from within the ROW since at least 2001.
- v. Entergy cooperated in a timely manner with SERC Staff during the assessment.<sup>7</sup> Entergy provided prompt responses to all of SERC Staff's questionnaires and data requests and satisfactorily cooperated with SERC Staff during phone calls and meetings between the parties to discuss the event and related matters. Furthermore, Entergy voluntarily and proactively conducted an internal detailed investigation and used a formal cause determination process to evaluate the event and to determine the root cause and subsequent corrective actions, sharing the results with SERC Staff and implementing the corrective and preventative actions. Entergy's cooperation enabled SERC Staff to conduct a thorough assessment in an efficient manner.
- vi. Entergy did not attempt to conceal the alleged violation which is evident by its prompt self-report of the alleged violation. Furthermore, Entergy did not intend to commit such a violation.
- vii. Entergy agreed to expeditiously resolve this issue via settlement and promptly initiated various mitigation actions and preventative measures before receiving a Notice of Alleged Violation and Proposed Penalty or Sanction from SERC.
- viii. Entergy has implemented corrective measures in its Mitigation Plan that include the incorporation of provisions into individual performance plans to provide that maintaining compliance with NERC Reliability Standard FAC-003-1 is an integral component of personnel evaluation (see Appendix A-1). Accordingly, a failure to maintain compliance could have a corresponding effect on overall compensation and may result in disciplinary action.<sup>8</sup>
- ix. Entergy has implemented a wide-range of additional measures set forth in Paragraph 55 to protect against future violations of the same or similar

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<sup>7</sup> *Revised Policy Statement on Enforcement*, 123 FERC ¶ 61,156, PP 65, 66, and 68 (May 15, 2008).

<sup>8</sup> *Policy Statement on Compliance*, 125 FERC ¶ 61,058, P 21 (October 16, 2008).

requirements.<sup>9</sup> Among the measures proposed by Entergy, is the implementation of quality control measures for its TVMP. As set forth in Paragraph 55 and the Mitigation Plan, Entergy more clearly defined in its TVMP the Minimum Vegetation Flashover Approach Distance, Priority 1 and 2, and the relationship of the Priority classification to the Minimum Vegetation Flashover Approach Distance. Entergy aerial patrol inspectors must communicate due dates for corrective maintenance work and Entergy personnel are required to verify completion of urgent corrective maintenance work. Entergy has increased the number of required aerial patrols from 2 to 3 and the additional patrol will focus solely on vegetation. Entergy required all vegetation personnel to retrain on the Imminent Threat process and will require refresher training each year. Entergy also has hired four additional contract forester personnel. Entergy's commitment to prevent a recurrence of this violation by remediation of the root cause of the violation – poor communications and non-conservative classification of the vegetation – is evidence of its continued commitment to bulk-power system reliability, the prevention of standards violations, and its strong compliance program.

- x. Entergy's failure to execute its TVMP resulted in a vegetation contact, flashover and sustained outage of a 500 kV line connected to a nuclear power plant for a duration of just over 22 hours.
  - xi. Photographs of the site of the flashover on the day after the incident, taken before vegetation was removed, showed multiple trees in the ROW on the Grand Gulf – Baxter Wilson 500 kV line between structures 36 and 37 in close proximity to the 500 kV conductor at mid-span.
  - xii. Entergy had the opportunity to remove the threat upon discovery of the tall brush in the ROW on May 19, 2008 but failed to ensure the threat was removed, a circumstance that SERC Staff viewed as more serious than one in which a flashover occurs from an unknown encroachment.
32. SERC Staff concluded that the actual or foreseeable impact of the alleged violation on the reliability of the Bulk Power System was minimal because there was: (1) no loss of generation or load; (2) no generation re-dispatch required; (3) operators responded accordingly to address voltage changes resulting from the loss of the line; and (4) studies and simulations provided by Entergy indicated that no thermal or stability limit violations occurred in multiple or extreme contingency event scenarios associated with the loss of the 500 kV line.
33. SERC agrees that this agreement is in the best interest of the parties and in the best interest of Bulk Power System reliability.

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<sup>9</sup> Policy Statement on Compliance, 125 FERC ¶ 61,058 (October 16, 2008).

## Statement of Entergy

34. Entergy neither admits nor denies that the facts set forth and agreed to by the parties for purposes of this Agreement constitute a violation of Reliability Standard FAC-003-1, Requirement 2.
35. The outage of June 13, 2008 occurred because of several factors that combined to produce the result. An extraordinarily fast-growing tree, located directly beneath the center conductor at the center of a transmission span, grew under conditions that supported extremely rapid growth. The situation (and Entergy's TVMP) required rapid action after the tree was identified as a threat, but a failure in communication between Entergy and its contractor meant that the required action was not taken in time. Had the TVMP been strictly followed, or if the contractor had informed Entergy that it was unable to follow the TVMP due to site access conditions, the tree would have been removed and the outage prevented. Nevertheless, Entergy has instituted several measures, set forth in the Mitigation Plan, to ensure that such an event will not recur.
36. Entergy 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. Entergy agrees that this agreement is in the best interest of the parties and in the best interest of maintaining a reliable electric infrastructure.
37. FERC has outlined in a series of orders the factors to be considered in reaching a penalty determination. NERC has established Violation Risk Factors and Violation Severity Levels for violations of FAC-003-1, thereby creating a range of possible penalties. SERC addressed above the several factors that it considered in reaching a penalty amount. Entergy asserts that all of the mitigating factors support the amount of the penalty agreed to in this Settlement. Details of mitigating factors are discussed below.

## Entergy's Commitment to Compliance

38. Entergy has a strong commitment to compliance with regulatory requirements. FERC has identified basic elements that it considers when evaluating a company's "commitment to compliance" and the compliance measures in existence at the time of the violation.<sup>10</sup>
39. Entergy has a robust and vigorous internal compliance program, and has taken swift action to identify and correct the problem that caused the outage. In this instance, the outage occurred despite Entergy's vigorous, effective compliance programs.

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<sup>10</sup> *Revised Policy Statement on Enforcement*, 123 FERC ¶ 61,156 at P 57 (May 15, 2008). FERC considers these elements when determining penalties: systems and protocols for monitoring, identifying, and correcting possible violations; a management culture that encourages compliance among company personnel, and tools and training sufficient to enable employees to comply with Commission requirements.

40. Entergy is fully committed to complying with regulatory requirements and demonstrates this commitment not only through staffing and funding a broad array of compliance functions, but also by encouraging participation in compliance work at every level of the company. Entergy personnel are involved at all levels in the compliance arena to ensure that the company contributes to the ongoing developments in the compliance field. Entergy employees and senior management are actively engaged with industry peers, neighboring entities, and regulatory and enforcement bodies. Entergy personnel participate on the North American Energy Standards Board (NAESB), SERC, NERC and FERC committees and teams as appropriate, as well as attending compliance related seminars and business meetings sponsored by regulatory bodies.
41. Entergy has created an extensive formal compliance program with a variety of compliance organizations that work with business units to ensure that all business units meet their regulatory requirements, create the necessary procedures and controls, and foster a culture of compliance. Entergy's overall Ethics and Compliance Program is one of the key components supporting Entergy's commitment to high standards of corporate conduct. While a compliance program does not assure that all improper conduct will be eliminated, the program establishes management's expectations that employees, agents and contractors will adhere to the elements of the program and will act in accordance with applicable laws, rules, regulations and Company policy. The overall Ethics and Compliance Program is structured to satisfy the elements of an effective compliance and ethics program specified by the United States Sentencing Commission in Chapter 8 of its Organizational Sentencing Guidelines Manual, and includes
- Codes/policies/procedures,
  - Accountabilities for compliance
  - Organizational responsibilities
  - Corporate Compliance Committee (executive management level)
  - Annual compliance certification by senior management
  - Employee acknowledgement of code
  - Training and communications
  - Compliance software
  - Background checks, and
  - Concerns line (anonymous if desired)
42. In order to provide oversight at the corporate level, Entergy has an Ethics and Compliance department, led by a Vice President, to provide compliance support throughout the company. This department is responsible for articulating and furthering Entergy's strong commitment to ethical behavior, and also includes discrete organizations that focus on Electric Reliability Standards, Corporate Compliance, Affiliate Rules Compliance and Records Management. These groups provide oversight for and support the entire company.
43. In addition, Entergy has established a Transmission Regulatory Compliance (TRC) department, also with leadership at the Vice President level. The TRC department is responsible for implementing programs, procedures, and controls to

ensure that Entergy's transmission business is in compliance with a broad range of FERC regulations, including Electric Reliability Organization requirements and Standards, as well as all of the other regulatory requirements that apply to Transmission. TRC organization staffing represents a fully diverse perspective including technically experienced individuals, attorneys, and process experts.

44. A key element of compliance is the existence of controls to ensure that processes and programs are operating within designed guidelines and limits and to identify occurrences of non-compliance. Entergy has formalized extensive automated and manual programs for tracking compliance. One of the primary automated systems is Entergy's "ECART" (Entergy Compliance and Risk Tool) Software, a computer system used to monitor and communicate compliance related control data to both process owners and management. Entergy also maintains an Ethics and Compliance Hotline, which provides an anonymous system for all employees to report concerns or known/suspected violations of ethics or compliance to Entergy management personnel. Entergy also utilizes a web based training and administrative program (WEBTAP) to provide training and to monitor that the training is successfully completed in a timely manner.
45. The formal nature of Entergy's compliance culture is shown by its programmatic approach to compliance, which consists of standardized business practices related to compliance. Elements of the compliance programs include a broad range of policies, procedures, and manuals.
46. Entergy has further illustrated its commitment to compliance through continuous senior management involvement in compliance activities. Senior management involvement includes participating in bi-weekly Transmission Compliance Oversight meetings, various steering committees, and in the Reliability Oversight Committee (ROC) which is chaired by the Executive Vice President, Operations. In the instance of the June 13, 2008 outage, Entergy's senior management engaged in the compliance process to ensure exemplary speed, cooperativeness, transparency, and effective action.
47. Entergy took prompt systematic action at the time of the outage to minimize potential impacts, cure the problem, and report the outage to SERC. These actions are outlined above in the factual discussion, and illustrate key evidence of Entergy's culture of compliance. First, the rapid reaction and commitment of resources shows Entergy's commitment to compliance, including the support of senior management. Second, the fact that there was a competent and professional staff ready to take immediate action, and who had the organization, procedures, and resources at the ready for a comprehensive, immediate response shows that Entergy has a vigorous, strong compliance organization in place – which in turn is evidence of the company's commitment to compliance.

### **Causal Analysis and Mitigation**

48. As shown above, Entergy is committed to regulatory compliance and preventing violations. The compliance culture also extends to a commitment to take the necessary steps necessary to understand what went wrong in order to ensure that a similar event does not reoccur. Following the outage, Entergy immediately

conducted a detailed and rigorous “Root Cause Analysis” based on its formal procedure for such a review (procedure OMM-PR-001 – “Causal Determinations”). The “root cause” in this instance (lack of a feedback loop to ensure that corrective work is completed in a timely fashion) has been closed and will prevent future occurrences. Although the system used by Entergy had been effective in preventing vegetation outages for many years, the analysis showed that there were additional steps that could enhance the reliability of the Bulk Power System. Contributing causes were also addressed through enhancements to the TVMP and additional, ongoing training was added to ensure that future violations do not occur. Additionally, Entergy has reviewed operations in all of its other grids to ensure that no procedural gaps impact the reliability of the Bulk Power System.

49. Entergy took immediate steps to cure underlying causal problems. Those steps are detailed in the Mitigation Plan. For example, the factors identified in the Root Cause analysis were dealt with immediately: Entergy rapidly completed an aerial inspection of all transmission lines 200 kV and above; inspectors were retrained; and, new controls were put in place. Following discussions with SERC, Entergy looked more deeply into its practices in order to ensure that its plans and practices conform fully to regulatory expectations regarding FAC-003-1, and to remove any ambiguity about the relationship between the regulatory requirements and Entergy’s work process. These steps will enhance the reliability of the Bulk Power System.
50. In conjunction with the Mitigation Plan, Entergy instituted several activities that it will continue in order to improve the quality of its vegetation management program, and to ensure reliability of the bulk power system, including adding an additional aerial patrol each year, dedicating one inspector per flight to vegetation only, and providing additional training to inspectors. The cost of the enhancements to the TVMP is estimated at approximately \$1 million per year.

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

51. For purposes of settling any and all disputes arising from SERC’s assessment of the alleged violation by Entergy in its Self Report dated June 16, 2008, SERC and Entergy herein agree that the following actions have been or shall be completed:
  - i. On December 15, 2008, Entergy provided SERC a letter, attached hereto as Appendix A-2, certifying that it had completed implementation of the Mitigation Plan accepted by SERC and approved by NERC, attached hereto as Appendix A-1;
  - ii. Entergy implemented the preventative measures outlined in Paragraph 55 of this Settlement Agreement; and,
  - iii. In addition to the actions completed by Entergy pursuant to the Mitigation Plan and the preventative measures implemented pursuant to Paragraph 55 of this Settlement Agreement, Entergy shall pay to SERC a monetary penalty of \$150,000.

52. Entergy's Mitigation Plan to address the referenced violation, dated August 20, 2008, was submitted on August 21, 2008 and was accepted by SERC on October 2, 2008 and approved by NERC on October 21, 2008. The Mitigation Plan is identified as MIT-08-1069 and was submitted as non-public information to FERC on October 21, 2008 in accordance with FERC orders. Entergy certified on December 15, 2008 that the Mitigation Plan was completed on December 11, 2008. Entergy's Mitigation Plan, its Certification of Mitigation Plan Completion and the Statement of SERC Reliability Corporation Compliance Staff Regarding Completion of Mitigation Plan are attached hereto as Appendix A.
53. Actions implemented by Entergy in its Mitigation Plan (see Appendix A-1) eliminated the possible violation, addressed the root cause and contributing causes and will help to prevent a recurrence of any similar violation.
- i. On June 14, 2008, the crew dispatched to the site of the outage removed the eastern cottonwood tree that caused the flashover and outage, along with the other tall brush in the vicinity of the flashover location, and completed floor vegetation maintenance through the spans between structures 36 and 38 from edge to edge of the ROW.
  - ii. Entergy completed aerial patrols of all Mississippi lines 200 kV and above on June 19, 2008. On July 15, 2008 Entergy completed an aerial patrol of lines 200 kV and above throughout the rest of the Entergy Operating Companies' system outside Mississippi.
  - iii. Entergy retrained its personnel on identifying, prioritizing and communicating vegetation conditions as they directly relate to Reliability Standards. Training was completed on June 25, 2008.
  - iv. Entergy reviewed contracts and work practices in other grids to confirm that the conditions leading to this violation do not exist in other grids within Entergy. The review was completed on June 25, 2008 and conditions did not exist in other Entergy Operating Companies' systems.
  - v. The re-training of all Entergy vegetation personnel on the Imminent Threat Communication Process was completed on June 25, 2008.
  - vi. Entergy revised its TVMP procedure to establish improved systems and procedures for ensuring that the vegetation management work was completed according to work specifications by (1) requiring Entergy aerial patrol inspectors to communicate due dates for corrective maintenance work and (2) requiring Entergy personnel to verify completion of urgent corrective maintenance work. The effective date of the revised TVMP (Rev 2) was September 1, 2008.
54. To verify Entergy's completion of these actions, SERC reviewed the following evidence provided by Entergy: (1) a summary document detailing all mitigating and preventative actions set forth in the Mitigation Plan along with the status and relevant completions dates; (2) copies of Entergy's TVMP detailing the revisions made to address causal factors identified through Entergy's self-assessment following the incident and incorporating suggestions by SERC Staff; (3) training

session agendas, tests and records of attendance as evidence of completion of training tasks identified in the Mitigation Plan; (4) letters of attestation of completion of mitigating and preventative actions signed by Entergy officers; (5) photographs of the transmission line and ROW before and after the tree was removed; (6) invoices from the aviation firm to show the completion of additional patrols; (7) notes from aerial patrols throughout Entergy's service area following the vegetation outage on June 13, 2008; (8) evidence of implementation of manager and employee human resources performance improvement actions; (9) notifications to the vegetation contract imposing a fine for its failure to complete assigned work and initiating a corresponding reduction in work load due to the failure; and (10) an e-mail confirming completion of the contract and work practices review. SERC has reviewed the above evidence provided by Entergy and determined that the actions set forth in the Mitigation Plan are effective for restoring compliance. SERC's Statement Regarding Completion of Mitigation Plan is attached to the Settlement Agreement as Appendix A-3.

55. In addition to the actions to restore compliance set forth in the Mitigation Plan, SERC and Entergy agree that Entergy has implemented the preventative measures summarized below, along with completion dates, to help prevent a recurrence of a similar violation:

	Preventative Measures	Completion Date
(i)	Entergy conducted aerial patrol training of inspectors, focusing on identifying the correct priority for vegetation conditions.	June 25, 2008
(ii)	The vegetation contractor was fined under the work contract for skipping work and Entergy has reduced the work load for the vegetation contractor.	August 22, 2008
(iii)	Entergy revised the TVMP to require Entergy personnel to perform the aerial inspections, under normal circumstances, and exceptions will require approval from the Manager, Vegetation and ROW.	September 1, 2008
(iv)	Entergy revised the TVMP to increase the number of required aerial patrols annually from two to three. Additionally, the added patrol will focus solely on vegetation.	September 1, 2008
(v)	Entergy revised the TVMP to complete Imminent Threat process training at least annually.	September 1, 2008
(vi)	Entergy revised the TVMP to require aerial patrol inspectors to use the standard approved Entergy Flight Form to record inspection data.	September 1, 2008

	Preventative Measures	Completion Date
(viii)	The Entergy supervisor involved in the communication gap with the contractor has completed an internal Human Resources Development Plan to improve communication, organizational and management skills and the involved employee completed an HR Personal Improvement Plan to improve communications and organizational skills.	November 5, 2008
(ix)	Entergy retrained its personnel on identifying, prioritizing and communicating vegetation conditions as they directly relate to Reliability Standards and retrained of all Entergy's vegetation personnel on the Imminent Threat Communication Process	December 11, 2008
(x)	Entergy conducted change management training with vegetation personnel to review modifications to the TVMP (Rev 3) so as to ensure that all have a clear understanding of the program.	January 22, 2009
(xi)	<p>Entergy revised its TVMP (Rev 3), based on editorial feedback from SERC Staff during Mitigation Plan completion verification, for clarity and removal of ambiguity, to implement the following preventative measures:</p> <ol style="list-style-type: none"> <li>1. clearly list the requirements for verification of completion of urgent corrective maintenance work;</li> <li>2. more clearly state the requirement that qualified Entergy personnel conduct annual aerial and ground patrol inspections and that any exceptions to this nominal requirement will require approval from the Manager, Vegetation and ROW;</li> <li>3. improve titling of reporting forms used in the TVMP;</li> <li>4. clarify, for Clearance 1, the vertical limits inside ROW floor; and</li> <li>5. correct and update the revision history.</li> </ol>	January 28, 2009

56. SERC has reviewed evidence of the completion of the preventative measures described in Paragraph 55 and has determined that these measures will assist Entergy in improving prospective compliance with the requirements of NERC Reliability Standard FAC-003-1 and will ultimately enhance the reliability of the bulk-power system within an appropriate time-frame. In order to facilitate SERC's need to communicate the status of these preventative measures and to provide accountability to NERC, Entergy has provided SERC with documentation to confirm the completion of these activities. This documentation included the following: (1) Entergy's TVMP Revision 2, effective September 1, 2008; (2) Entergy's TVMP Revision 3, effective January 28, 2009; and (3) agendas and rosters for training sessions conducted with vegetation personnel to ensure that all have a clear understanding of the program. SERC has reviewed this documentation and determined that it sufficiently supports a finding that Entergy has completed these additional preventative measures. These and other documents related to this proceeding will be maintained by SERC in accordance with the confidentiality provisions of Section 1500 of the NERC Rules of Procedure.
57. SERC Staff based its determination of duration of the violation on its assessment that Entergy's failure to execute its TVMP began on May 26, 2008, seven days after Entergy inspectors identified tall brush requiring removal within seven days, through the date of the flashover and outage caused by the vegetation that Entergy failed to remove pursuant to its TVMP, until September 1, 2008, when the TVMP was revised to improve systems and procedures to ensure vegetation work was completed according to work specifications.
58. SERC Staff also considered the specific facts and circumstances of the alleged violation and Entergy's actions in response to the alleged violation in determining a proposed penalty that meets the requirement in Section 215 of the Federal Power Act that "[a]ny penalty imposed under this section shall bear a reasonable relation to the seriousness of the violation and shall take into consideration the efforts of [Entergy] to remedy the violation in a timely manner."<sup>11</sup> The factors considered by SERC Staff in the determination of the appropriate penalty for Entergy's alleged violation of NERC Reliability Standard FAC-003-1 pursuant to this Settlement Agreement included the following:
- i. SERC Staff concluded that the alleged violation resulted in minimal actual or foreseeable impact on the reliability of the bulk-power system because there was: (1) no loss of generation or load; (2) no generation re-dispatch required; (3) operators responded accordingly to address voltage changes resulting from the loss of the line; and (4) studies and simulations provided by Entergy indicated that no thermal or stability limit violations occurred in multiple or extreme contingency event scenarios associated with the loss of the 500 kV line.

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<sup>11</sup> 16 U.S.C. § 824o(e)(6).

- ii. Entergy has an internal compliance program that was developed using Commission guidance.<sup>12</sup> Entergy has participated in voluntary compliance programs prior to the effective date of the mandatory and enforceable reliability standards. This comprehensive program includes senior management support and direction as well as dedicated compliance personnel who are responsible for its implementation.
- iii. Entergy self-reported the possible violation within 24 hours of its occurrence, first by phone call directly to SERC's self-reporting line and to SERC's Manager of Compliance Enforcement, followed up by e-mail and a detailed written self-report.<sup>13</sup>
- iv. Entergy promptly removed the offending vegetation along the span where the flashover occurred by June 14, 2008 and patrolled all Mississippi lines by June 19, 2008, with the remainder of all system lines patrolled by July 15, 2008 (either on ground or in air, with on ground follow up). Entergy completed its remaining mitigating and preventative actions by December 11, 2008. Entergy has fully mitigated the alleged violation prior to entering into this Settlement Agreement.
- v. Entergy has no prior violation of this standard or any closely-related standard and has experienced no other sustained transmission outages resulting from vegetation growing into the line from within the ROW since at least 2001.
- vi. Entergy cooperated in a timely manner with SERC Staff during the assessment.<sup>14</sup> Entergy provided prompt responses to all of SERC Staff's questionnaires and data requests and satisfactorily cooperated with SERC Staff during phone calls and meetings between the parties to discuss the event and related matters. Furthermore, Entergy voluntarily and proactively conducted an internal detailed investigation and used a formal cause determination process to evaluate the event and to determine the root cause and subsequent corrective actions, sharing the results with SERC Staff and implementing the corrective and preventative actions. Entergy's cooperation enabled SERC Staff to conduct a thorough assessment in an efficient manner.
- vii. Entergy did not attempt to conceal the alleged violation which is evident by its prompt self-report of the alleged violation. Furthermore, Entergy did not intend to commit such a violation.
- viii. Entergy agreed to expeditiously resolve this issue via settlement and promptly initiated various mitigation actions and preventative measures before receiving a Notice of Alleged Violation and Proposed Penalty or Sanction from SERC.

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<sup>12</sup> Policy Statement on Compliance, 125 FERC ¶ 61,058, PP 6, 13-15 (October 16, 2008).

<sup>13</sup> Policy Statement on Compliance, 125 FERC ¶ 61,058, P 19 (October 16, 2008).

<sup>14</sup> Revised Policy Statement on Enforcement, 123 FERC ¶ 61,156, PP 65, 66, and 68 (May 15, 2008).

- ix. Entergy has implemented corrective measures in its Mitigation Plan that include the incorporation of provisions into individual performance plans to provide that maintaining compliance with NERC Reliability Standard FAC-003-1 is an integral component of personnel evaluation (see Appendix A-1). Accordingly, a failure to maintain compliance could have a corresponding affect on overall compensation and may result in disciplinary action.<sup>15</sup>
  - x. Entergy has implemented a wide-range of additional measures set forth in Paragraph 55 to protect against future violations of the same or similar requirements.<sup>16</sup> Among the measures proposed by Entergy, is the implementation of quality control measures for its TVMP. As set forth in Paragraph 55 and the Mitigation Plan, Entergy more clearly defined in its TVMP the Minimum Vegetation Flashover Approach Distance, Priority 1 and 2, and the relationship of the Priority classification to the Minimum Vegetation Flashover Approach Distance. Entergy aerial patrol inspectors must communicate due dates for corrective maintenance work and Entergy personnel are required to verify completion of urgent corrective maintenance work. Entergy has increased the number of required aerial patrols from two to three and the additional patrol will focus solely on vegetation. Entergy required all vegetation personnel to retrain on the Imminent Threat process and will require refresher training each year. Entergy also has hired four additional contract Forester personnel. Entergy's commitment to prevent a recurrence of this violation by remediation of the root cause of the violation – poor communications and non-conservative classification of the vegetation – is evidence of its continued commitment to Bulk Power System reliability, the prevention of standards violations, and its strong compliance program.
59. The estimated costs to Entergy to implement the agreed to actions in Section V are approximately \$1 million annually. SERC may audit and inspect financial records to validate actual expenditures with estimates in this Settlement Agreement. Funding and programs associated with this Settlement Agreement will be above the original planned budget and programs for the 2009 budget.
60. Based on the above factors, as well as the mitigation actions and preventative measures taken (or to be taken), EMI shall pay \$150,000 to SERC as set forth in this Settlement Agreement. EMI shall remit the payment to SERC via check, or by wire transfer to an account to be identified by SERC (“SERC Account”), within twenty days after SERC provides Entergy with a notice of penalty payment due and invoice, to be issued by SERC after this Settlement Agreement is either approved by the Commission or by operation of law. SERC shall notify NERC, and NERC shall notify the Commission, if the payment is not timely received. SERC shall also notify Entergy if the payment is not timely received. If Entergy 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.

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<sup>15</sup> Policy Statement on Compliance, 125 FERC ¶ 61,058, P 21 (October 16, 2008).

<sup>16</sup> Policy Statement on Compliance, 125 FERC ¶ 61,058 (October 16, 2008).

§35.19a(a)(2)(iii) from the date that payment is due, and shall be payable in addition to the payment.

61. Failure to make a timely penalty payment or to comply with any of the terms and conditions agreed to herein, or any other conditions of this Settlement Agreement shall be deemed to be either the same alleged violation that initiated this Settlement Agreement and/or additional violation(s) and may subject Entergy to new or additional enforcement, penalty or sanction actions in accordance with the NERC Rules of Procedure. Entergy shall retain all rights to defend against such additional enforcement actions in accordance with NERC Rules of Procedure.

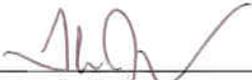
## **V. ADDITIONAL TERMS**

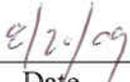
62. The signatories to the Settlement Agreement agree that they enter into the Settlement Agreement voluntarily and that, other than the recitations set forth herein, no tender, offer or promise of any kind by any member, employee, officer, director, agent or representative of SERC or Entergy has been 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.
63. 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 Entergy 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 Entergy including any changes to the settlement specified by NERC. If a settlement cannot be reached, the enforcement processes 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 the alleged violation and the terms provided for in the settlement.
64. This Settlement Agreement will be submitted to the Commission and will be subject to Commission review pursuant to section 39.7 of the Commission's regulations.
65. This Settlement Agreement shall become effective upon NERC and the Commission's approval by order or operation of applicable law as submitted to it or as modified in a manner acceptable to the parties.
66. Entergy agrees that this Settlement Agreement, when approved by NERC and the Commission, shall represent a final settlement of all matters set forth herein and Entergy waives its right to further hearings and appeal, unless and only to the extent that Entergy 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 Entergy in accordance with the NERC Rules of Procedure in the event that Entergy fails to comply with the mitigation plan and compliance program agreed to in this Settlement Agreement. In the event Entergy 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 Entergy 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, Entergy shall retain all rights to defend against such enforcement actions, also according to the NERC Rules of Procedure.

67. 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.
68. 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.
69. The Settlement Agreement may be signed in counterparts.
70. This Settlement Agreement is executed in duplicate, each of which so executed shall be deemed to be an original.

Agreed to and accepted:

  
\_\_\_\_\_  
Thomas J. Galloway  
Vice President and Director of Compliance  
**SERC RELIABILITY CORPORATION**

  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Randall Helmick  
Vice President, Transmission  
**ENTERGY SERVICES, INC. as agent for ENTERGY MISSISSIPPI, INC.**

  
\_\_\_\_\_  
Date

**APPENDIX A  
TO  
SETTLEMENT AGREEMENT  
OF  
SERC RELIABILITY CORPORATION  
AND  
ENTERGY SERVICES, INC. ON BEHALF OF ENTERGY MISSISSIPPI, INC**

**(1) Entergy's Mitigation Plan**

**(2) Entergy's Certification of Mitigation Plan Completion**

**(3) Statement of SERC Reliability Corporation Compliance Staff Regarding  
Completion of Entergy's Mitigation Plan**



# Mitigation Plan Submittal Form

Date this Mitigation Plan is being submitted:

If this Mitigation Plan has already been completed:

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

## Section A: Compliance Notices

- Section 6.2 of the CMEP<sup>1</sup> sets forth the information that must be included in a Mitigation Plan. The Mitigation Plan must include:
  - (1) The Registered Entity's point of contact for the Mitigation Plan, who shall be a person (i) responsible for filing the Mitigation Plan, (ii) technically knowledgeable regarding the Mitigation Plan, and (iii) authorized and competent to respond to questions regarding the status of the Mitigation Plan. This person may be the Registered Entity's point of contact described in Section 2.0.
  - (2) The Alleged or Confirmed Violation(s) of Reliability Standard(s) the Mitigation Plan will correct.
  - (3) The cause of the Alleged or Confirmed Violation(s).
  - (4) The Registered Entity's action plan to correct the Alleged or Confirmed Violation(s).
  - (5) The Registered Entity's action plan to prevent recurrence of the Alleged or Confirmed violation(s).
  - (6) The anticipated impact of the Mitigation Plan on the bulk power system reliability and an action plan to mitigate any increased risk to the reliability of the bulk power-system while the Mitigation Plan is being implemented.
  - (7) A timetable for completion of the Mitigation Plan including the completion date by which the Mitigation Plan will be fully implemented and the Alleged or Confirmed Violation(s) corrected.
  - (8) Implementation milestones no more than three (3) months apart for Mitigation Plans with expected completion dates more than three (3) months from the date of submission. Additional violations could be determined for not completing work associated with accepted milestones.
  - (9) Any other information deemed necessary or appropriate.
  - (10) The Mitigation Plan shall be signed by an officer, employee, attorney or other authorized representative of the Registered Entity, which if applicable, shall be the person that signed the Self-Certification or Self Reporting submittals.

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



- This submittal form shall be used to provide a required Mitigation Plan for review and approval by SERC and NERC.
- The Mitigation Plan shall be submitted to SERC and NERC as confidential information in accordance with Section 1500 of the NERC Rules of Procedure.
- This Mitigation Plan form may be used to address one or more related violations of one Reliability Standard. A separate mitigation plan is required to address violations with respect to each additional Reliability Standard, as applicable.
- If the Mitigation Plan is approved by SERC and NERC, a copy of this Mitigation Plan will be provided to the Federal Energy Regulatory Commission in accordance with applicable Commission rules, regulations and orders.
- SERC or NERC may reject Mitigation Plans that they determine to be incomplete or inadequate.
- Remedial action directives also may be issued as necessary to ensure reliability of the bulk power system.

**Section B: Registered Entity Information**

B.1 Identify your organization:

Company Name: Entergy Corporation  
Company Address: 639 Loyola Avenue, New Orleans, LA, 70113  
NERC Compliance Registry ID **[if known]**: NCR01234

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

Name: Edmond E. Himel  
Title: Manager, Transmission Lines Support  
Email: ehimel@prod.entergy.com  
Phone: 601-351-4236



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

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

C.1 Standard: FAC-003-1  
*[Identify by Standard Acronym (e.g. FAC-001-1)]*

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

NERC Violation ID # [if known]	SERC Violation ID # [if known ]	Requirement Violated (e.g. R3.2)	Violation Date <sup>(*)</sup>
SERCYYYYnnnnn	2008-058	R2	06/13/2008

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

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

An element of Entergy's culture of compliance is causal analysis performed in accordance with a formal procedure specified in the Entergy Operations Management Manual. Entergy Transmission personnel performed a causal determination for the Grand Gulf to Baxter Wilson ("GGBW") 500KV line outage of June 13, 2008. The causal determination utilized "Event Charting," "Barrier Analysis," and "Five Whys" techniques as a systematic framework for the analysis. The analysis identified one root cause and two contributing causes for the outage. The Mitigation Plan directly addresses the identified root cause and contributing causes.



## ROOT CAUSE:

The causal analysis concluded that the root cause for this violation was that Entergy's Transmission Vegetation Management Program ("TVMP") did not include a step for verifying that urgent Corrective Maintenance work was completed by the contractor.

- The aerial patrol on May 19, 2008 identified "tall brush" between structures 36 and 37 and classified it as "P2." (See below, Contributing Cause #2). The TVMP requires that a P2 condition be corrected in less than 7 days.
- Entergy promptly communicated the P2 condition to the contractor for removal in accordance with the TVMP process.
- The contractor did not complete the corrective maintenance as required and expected.
- Entergy's process for corrective maintenance did not require verification of Corrective Maintenance. The process had worked successfully for years and under a variety of corrective maintenance situations without a Corrective Maintenance verification step.
- In the week prior to June 13, an Entergy specialist discussed the general status of Corrective Maintenance on the GGBW line, but the contractor did not communicate that the specific P2 work had not been performed and the Entergy specialist did not verify that the work had been completed. (See below, Contributing Cause #1.)

The causal analysis team determined that the root cause of the June 13 outage was a lack of verification that urgent Corrective Maintenance work had been completed. The team concluded that regardless of other contributing causes or conditions, if the Entergy vegetation management specialist had verified that the the work had not been completed by the contractor within seven days of the May 19 aerial patrol, the outage on June 13 would have been prevented. Had Entergy discovered the contractor's failure to perform the work within seven days, Entergy would have immediately dispatched its own crew or another contractor to remedy the situation within 24 hours.

## CONTRIBUTING CAUSE #1:



The first contributing cause identified by the causal analysis was poor communication between the Entergy employee managing the vegetation management contract and the contractor. The Entergy employee did not fully communicate and emphasize work expectations regarding the corrective maintenance classified as a "P2" during the aerial patrol in May 2008. In addition, the contractor did not communicate the actual status of the work to Entergy, and did not advise that it could not get access to a flooded area. At various times after the P2 work was identified, more accurate communication could have prompted action that would have prevented the outage.

- Entergy's communication of prioritization for corrective maintenance did not include specific dates by which the assigned work was to be completed.
- The contractor did not notify Entergy that it had failed to complete the P2 corrective maintenance within the required time. When interviewed after the event, the contractor indicated that it did not have the proper equipment to perform the corrective maintenance if the access or the ROW were flooded.
- Had the contractor communicated to Entergy it was not planning to perform the work within the P2 required timeframe, Entergy would have reassigned the work to crews with the appropriate equipment or contracted additional crews.
- As indicated in the root cause discussion above, Entergy and the contractor did discuss progress on the Corrective Maintenance identified during that year's aerial patrols. The communication was not detailed enough to identify that P2 work on the GGBW 500KV line was not completed as required. Had this discussion occurred, the vegetation condition would have been reclassified as P1 and corrected immediately.

## CONTRIBUTING CAUSE #2:

The second contributing cause identified by the causal analysis team was the non-conservative classification of the vegetation condition at the outage site as P2 rather than P1 during the aerial patrol of May 19, 2008. Had the vegetation condition been prioritized P1, the Imminent Vegetation Threat process would have been implemented and the



condition would have been corrected or mitigated within 24 hours, as required by the TVMP.

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

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

On Friday June 13, 2008 at 13:19:55 hours a single vegetation outage occurred on Entergy's Grand Gulf to Baxter Wilson 500 KV Transmission Line (#507) near Port Gibson, Mississippi. All relaying worked as expected, no additional lines tripped, and no load was affected by the outage. The line was restored to service on June 14, 2008 at 11:37:08. On June 16, 2008 Entergy reported the outage to SERC.

Immediately following the outage on June 13, a helicopter patrol was dispatched to investigate the scene. The patrol noted a tree with burned leaves in the Right of Way (ROW) near structure 37. Line and Vegetation Crews were quickly dispatched but could not safely reach the site due to darkness and rugged terrain. The tree was located in a bottomland hardwood area that is prone to flooding from the Mississippi and Big Black Rivers. The area is characterized by high relief topography (steep banks) and flooded lowlands. Access to the ROW is limited to unimproved logging roads and trails, which are also subject to flooding. At dawn on June 14, a crew using marsh buggies and a bulldozer proceeded to the site.

The team arrived at the site to discover an Eastern Cottonwood tree, showing evidence of flashover damage but still 31'7", located below a 36'5" 500KV conductor. Other tall brush was also found in the ROW. Although the tree itself was not standing in water, the nearby ROW was flooded. A bull dozer was used to push the trees and brush over and establish flashover protection. The tree showing flashover damage was pushed over and the stump removed. (See photographs of the vegetation and the work performed, provided to SERC on June 24, 2008.) Service on the line was restored at 11:37:08 a.m. June 14.

Entergy rapidly took measures to preclude recurrences. The following is a list of mitigation measures that were completed expeditiously. These measures were reported in the Questionnaire response to SERC on July 8, 2008.



- On June 14, 2008 the crew on site completed floor vegetation maintenance through the spans between structures 36 and 38 from edge of ROW to edge of ROW.
- Entergy completed an aerial patrol of all Mississippi lines above 200 KV on June 19, 2008.
- An aerial patrol of remaining Entergy system (i.e., outside Mississippi) lines above 200 KV was completed on July 15, 2008.
- Completed re-training of all aerial patrol personnel on June 25, 2008. The training focused on identifying, prioritizing and communicating vegetation conditions that could cause reliability concerns to the transmission system.
- Completed re-training of all Entergy Vegetation personnel on the Imminent Threat Communication Process June 25, 2008.

A review of previous work in the area showed that in January 2006 a crew manually cut the tree at a stump height of approximately 6" due to high water. The stump was not treated with herbicides due to the water. The tree re-sprouted and grew to a height of over 30 feet in approximately 30 months. In order to make sure that extremely rapid regrowth of vegetation does not precipitate another similar incident, Entergy has added a third annual aerial patrol. The third patrol will focus primarily on vegetation.

The outage caused no impact on the Bulk Power System. The flow on the Grand Gulf – Baxter Wilson line immediately before the trip was 338 MVA. The line outage caused 100% of the flow on the Grand Gulf – Baxter Wilson line to redirect across the Grand Gulf – Franklin 500 kV line. The resulting flow on the Grand Gulf – Franklin 500 kV line was 1258 MVA, well below the line rating of 2598 MVA, which is the same as the line rating for the Grand Gulf-Baxter Wilson line. The only operational issue that the operators observed was a slight voltage dip on the 500 kV bus and the Port Gibson 115 kV bus. The Port Gibson 115kV line is primarily used for nuclear offsite voltage requirements.

The outage did not have any actual impact on the reliability of the bulk power system. The line that absorbed the flow from the Grand Gulf to



Baxter Wilson line was not loaded near its limit and did not experience an overload as a result of the trip.

It will be noted that corrective actions do not include changes to equipment or operations of the bulk electric system. This is intentional due to Entergy's conclusion that this event had minimal impact on the bulk electric system, and that the equipment operated as designed.

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



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

**Mitigation Plan Contents**

D.1 Identify and describe the action plan, including specific tasks and actions that your organization is proposing to undertake, or which it undertook if this Mitigation Plan has been completed, to correct the violations identified above in Part C.2 of this form:

Root Cause Related:

(1) Entergy will revise the Transmission Vegetation Management Plan procedure (TVMP) to require Entergy personnel to verify completion of urgent corrective maintenance work.

(2) Entergy will revise the TVMP to increase the number of required aerial patrols annually from two (2) to three (3). Additionally, the added patrol will focus solely on vegetation.

(3) Entergy will retrain all vegetation personnel on the Imminent Threat process.

(4) Entergy will revise the TVMP to complete Imminent Threat process training at least annually.

Contributing Cause #1 Related:

(5) Entergy will revise the TVMP to require aerial patrol inspectors to communicate due dates for corrective maintenance work.

(6) Entergy will revise the TVMP to require aerial patrol inspectors to use the standard approved Entergy Flight Form to record inspection data.

(7) The vegetation contractor, SMA, is being fined under the work contract for skipping work.

(8) Entergy has reduced the work load for the vegetation contractor, SMA.

(9) The Entergy Supervisor for Mississippi has begun an internal Human Resources Development Plan to improve communication, organizational and management skills.



(10) The Entergy Transmission Specialist for MS has begun an HR Personal Improvement Plan to improve communications and organizational skills.

(11) Entergy will review contracts and work practices in other grids to confirm that the conditions leading to this violation do not exist in other grids within Entergy.

Contributing Cause #2 Related:

(12) Entergy will conduct aerial patrol training of inspectors, focusing on identifying the correct priority for vegetation conditions.

(13) Entergy will revise the TVMP to require Entergy personnel to perform the aerial inspections, under normal circumstances, and exceptions will require approval from the Manager, Vegetation and ROW.

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

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

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

D.2 Provide the timetable for completion of the Mitigation Plan, including the completion date by which the Mitigation Plan will be fully implemented and the violations associated with this Mitigation Plan are corrected: All programmatic changes associated with the Mitigation Plan are scheduled for completion by September 10, 2008. The Improvement Plan for the Entergy Supervisor and Transmission Specialist are scheduled to be completed by December 15, 2008.

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

Milestone Activity	Proposed Completion Date* (shall not be more than 3 months apart)
Revision of Entergy TVMP	9/10/2008
Completion of Immiment Threat Training	7/25/2008



Contractor Related Changes	6/30/2008
Review of Contracts and Work Practices	6/30/2008

(\*) Note: Implementation milestones no more than three (3) months apart for Mitigation Plans with expected completion dates more than three (3) months from the date of submission. Additional violations could be determined for not completing work associated with accepted milestones.

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



**Additional Relevant Information (Optional)**

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

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

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

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

**Abatement of Interim BPS Reliability Risk**

E.1 While your organization is implementing the Mitigation Plan proposed in Part D of this form, the reliability of the Bulk Power System may remain at higher risk or be otherwise negatively impacted until the plan is successfully completed. To the extent they are, or may be, known or anticipated: (i) identify any such risks or impacts; and (ii) discuss any actions that your organization is planning to take or is proposing as part of the Mitigation Plan to mitigate any increased risk to the reliability of the bulk power system while the Mitigation Plan is being implemented:

No interim risks to the reliability of the bulk power system have been identified.  
[Provide your response here; additional detailed information may be provided as an attachment as necessary]

**Prevention of Future BPS Reliability Risk**

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

Entergy believes that this violation was the result of a unique combination of human error, conditions in the particular location and the contract provisions that are not present in other areas of the Entergy territory. The gap in the process identified as the root cause in this case (lack of a feedback loop to



ensure that corrective work is completed in a timely fashion) has been closed and will prevent future occurrences. Contributing causes have also been addressed through enhancements to the TVMP and additional, ongoing training to ensure that future violations do not occur. Additionally, Entergy has reviewed operations in other grids to ensure that no procedural gaps impact the reliability of the bulk power system.

Specifically:

Revisions to the Entergy TVMP will ensure that there is a feedback loop from the contractor to Entergy to provide evidence that urgent corrective work is completed within the specified timeframe.

The addition of a third annual aerial patrol that focuses solely on vegetation will provide additional vigilance in identifying vegetation related threats to the reliability of the BPS.

The increased and recurring training of vegetation personnel on the Imminent Threat process will ensure that personnel skills are current and provide a mechanism for communicating any changes in the process on an annual basis.

Standardization of aerial patrol data capture/communications (standard approved Entergy Flight Form) for corrective maintenance work will provide detailed, auditable data in support of the process. Additionally, communication of due date, rather than "P" rating will remove any ambiguity from the controls for work completion expectations.

Contractor financial sanctions imposed should reinforce with the contractor Entergy's commitment to maintaining the reliability of the BPS.

Contractor workload reductions shift the onus of workload management from the contractor to Entergy.

Entergy Supervisor training will reduce avenues of human error due to poor communication.

Entergy's system wide review of contracts and work practices in other grids will verify that the Vegetation Management Program was adequate, and that this was an anomaly due to the unique circumstances that were isolated to the Mississippi grid.

Improvements related to aerial patrol crew makeup and training ensure that all aerial inspectors are effective in performance of their duties.



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

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

Entergy has completed the analysis of this event has documented the corrective actions in this mitigation plan.

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

[Continued on Next Page](#)



**Section F: Authorization**

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

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

**Authorized Individual Signature** Randall Helmick

(Electronic signatures are acceptable; see CMEP)

Name (Print): Randall Helmick  
Title: Vice President, Transmission  
Date: August 20, 2008



**Section G: Comments and Additional Information**

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

Entergy had quickly and accurately provided information as requested by SERC. Entergy has complete a thorough analysis of the event and believes the documented corrective actions will greatly reduce the chance of recurrence. Entergy would like to this opporuntiy to reaffirm its commitment to the right thing in all circumstances and believes it has handled this situation in accordance with the "Code of Entegrity."

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

**Submittal Instructions:**

Please convert the completed and signed document to an Adobe .pdf document using the following naming convention:

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

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

Please direct any questions regarding completion of this form to:

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



Entergy Services, Inc.  
Mail Unit M-ELEC-8G  
308 E. Pearl Street  
Jackson, Ms. 39201  
Tel 601-969-4821  
e-Mail RHELMIC@entergy.com

**Randall W. Helmick**  
Vice President, Transmission

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

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

Name of Registered Entity submitting certification: ENTERGY CORPORATION

Date of Certification: December 15, 2008

Name of Standard and the Requirement(s) of mitigated violation(s): FAC-003-1,  
Requirement R2

SERC Tracking Number (contact SERC if not known): MIT-2008-058

NERC Violation ID Number (if assigned): SERC200800144

**Date of completion of the Mitigation Plan:** December 11, 2008

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

Mitigation Plan Activities:

- (1) Entergy has revised the Transmission Vegetation Management Plan procedure (TVMP) to require Entergy personnel to verify completion of urgent corrective maintenance work.
- (2) Entergy has revised the TVMP to increase the number of required aerial patrols annually from two (2) to three (3). Additionally, the added patrol will focus solely on vegetation.
- (3) Entergy has retrained all vegetation personnel on the Imminent Threat process.
- (4) Entergy has revised the TVMP to complete Imminent Threat process training at least annually.
- (5) Entergy has revised the TVMP to require aerial patrol inspectors to communicate due dates for corrective maintenance work.
- (6) Entergy has revised the TVMP to require aerial patrol inspectors to use the standard approved Entergy Flight Form to record inspection data.
- (7) The vegetation contractor, SMA, was fined under the work contract for skipping work.
- (8) Entergy has reduced the work load for the vegetation contractor, SMA.

# Appendix A-2

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(9) The Entergy Supervisor for Mississippi has completed an internal Human Resources Development Plan to improve communication, organizational and management skills.

(10) The Entergy Transmission Specialist for MS has completed an HR Personal Improvement Plan to improve communications and organizational skills.

(11) Entergy has reviewed contracts and work practices in other grids to confirm that the conditions leading to this violation do not exist in other grids within Entergy.

(12) Entergy has conducted aerial patrol training of inspectors, focusing on identifying the correct priority for vegetation conditions.

(13) Entergy has revised the TVMP to require Entergy personnel to perform the aerial inspections, under normal circumstances, and exceptions will require approval from the Manager, Vegetation and ROW.

Mitigation Plan Milestones:

<u>Milestone</u>	<u>Proposed Completion</u>	<u>Actual Completion</u>
Revision of Entergy TVMP	9/10/2008	8/25/2008
Completion of Imminent Threat Training	7/25/2008	6/25/2008
Contractor Related Changes	6/30/2008	6/30/2008
Review of Contracts and Work Practices	6/30/2008	6/25/2008

Description of the information provided to SERC for their evaluation:

The following document will be forwarded to SERC in PDF format:

Cross reference of documentation by plan activity: **01 Mitigation Plan Status.pdf**

Revised Entergy TVMP: **02 Revised TVMP AM-ERS-FAC-001.pdf**

Training agenda and meeting roster: **03 Training Agenda and Meeting Roster.pdf**

Copy of inspector test: **04 Inspector Test.pdf**

Copy of Entergy flight form: **05 Entergy Flight Form.pdf**

Entergy letter to SMA (fine and invoice): **06 Entergy Letter to SMA.pdf**

Email confirming reduction in SMA workload: **07 SMA Workload Reduction Email.pdf**

Transmission attestation letter: **08 Veg LOC.pdf**

Transmission / Human Resources attestation letter: **09 Veg HR LOC.pdf**

Email confirming review of contracts and practices: **10 Contract Review Email.pdf**

Invoice confirming completion of flights: **11 Aviation Invoices.pdf**

## Appendix A-2

Serc Reliability Corporation

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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 and correct to the best of my knowledge.

Name: Randall Helmick

Title: Vice President, Transmission

Entity: Entergy Corporation

Email: RHelmick@Entergy.com

Phone: 601-969-4821

Designated Signature *Randall W. Helmick* Date: December 15, 2008



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

Registered Entity:	Entergy
SERC Tracking ID:	08-058
NERC Violation No:	SERC200800144
NERC Mitigation Plan ID:	MIT-08-1069
Standard:	FAC-003-1
Requirement(s):	2

**Violation Summary:**

SERC Staff concluded that Entergy violated NERC Reliability Standard FAC-003-1, Requirement 2. While Entergy has an applicable TVMP, SERC Staff identified evidence of a failure in the implementation of the program, which resulted in a flashover and outage. As a Transmission Owner, Entergy was required by NERC Reliability Standard FAC-003-1 Requirement 2 to implement its TVMP to prevent outages from vegetation located on transmission Rights of Way and to have systems and procedures for ensuring that the vegetation management work was completed according to work specifications. The flashover on the Grand Gulf – Baxter Wilson 500 kV line on June 13, 2008 is evidence that Entergy failed in this instance to carry out its TVMP in a manner so as to prevent this contact or flashover with vegetation, and thus violated NERC Reliability Standard FAC-003-1, Requirement 2. SERC finds that the alleged violation began on May 26, 2008 at which time, according to its TVMP, Entergy should have corrected the threat. The violation continued until September 1, 2008, when the TVMP was revised to improve systems and procedures to ensure vegetation work was completed according to work specifications. The vegetation that caused the outage and other tall brush surrounding the offending vegetation, which may have encroached Clearance 2 space, was removed on June 14, 2008, and no other instances of encroachment were identified through patrols conducted following the outage, therefore the risk to reliability of the Bulk-Power System was mitigated on July 15, 2008, when the patrols were completed.

**Mitigation Plan Summary:**

Entergy's Mitigation Plan to address the referenced violation was submitted on August 21, 2008 and was accepted by SERC on October 2, 2009 and approved by NERC on October 21, 2008. The Mitigation Plan is identified as MIT-08-1069 and was submitted as non-public information to FERC on October 21, 2008 in accordance with FERC orders. There were no requests for extensions.



To mitigate the alleged violation, Entergy removed the offending vegetation on June 14, 2008 and completed patrols of all 200 kV and higher transmission lines by July 15, 2008. In addition, Entergy completed refresher training of aerial patrol personnel and vegetation personnel by June 25, 2008, reviewed contracts and work practices in other grids to confirm that the conditions leading to the alleged violation do not exist in other grids within Entergy, and revised its TVMP to establish improved systems and procedures for ensuring that the vegetation management work was completed according to work specifications.

Paragraph 54 of the Settlement Agreement between Entergy and SERC addresses actions taken by Entergy to prevent recurrence of a similar alleged violation, including additional focused training on new processes and form, remedial action with the contractor and supervisor involved in the miscommunication that led to the failure to follow up on required vegetation management work, modifications to the TVMP to increase air patrols using Entergy personnel rather than contractors utilizing improved reporting forms with a patrol exclusively for vegetation inspection. The actions to prevent recurrence were completed on January 28, 2009, the effective date of revision 3 of Entergy's TVMP.

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

SERC Reliability Corporation Compliance Staff ("SERC Staff") monitors the Registered Entity's progress towards completion of its Mitigation Plans in accordance with Section 6.0 of the uniform Compliance Monitoring and Enforcement Program, ("CMEP"). Pursuant to the CMEP, Registered Entities are required to establish implementation milestones no more than three (3) months apart. SERC Staff solicits quarterly reports from all Registered Entities with open mitigation plans to monitor the progress on completion of milestones. SERC Staff also produces and reviews daily Mitigation Plan status reports highlighting Mitigation Plans that are nearing the scheduled completion date. If the Registered Entity fails to complete its Mitigation Plan according to schedule, appropriate additional enforcement action is initiated to assure compliance is attained.

### **Mitigation Plan Completion Review Process:**

Entergy certified on December 15, 2008 that the subject Mitigation Plan was completed on December 11, 2008. A SERC compliance staff member reviewed the evidence submitted in a manner similar to a compliance audit. That action was followed by another compliance staff member's peer review of the initial conclusion.

### **Evidence Reviewed:**

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

01 Mitigation Plan Status.pdf - Cross reference of documentation by mitigation plan activity item



02 Revised TVMP AM-ERS-FAC-001.pdf and Entergy-AM-ERS-FAC-001 R3 Final - Entergy's revised TVMP defining Minimum Vegetation Flashover Approach Distance, Priority 1 and 2, and the relationship of the Priority to the Minimum Vegetation Flashover Approach Distance; Entergy personnel required to verify completion of urgent corrective maintenance work; Entergy personnel to perform aerial inspections under normal circumstances, and exceptions will require approval from Manager, Vegetation ROW; Aerial patrols increased from 2 to 3 and additionally the added patrol will focus solely on vegetation; Imminent Threat process training at least annually; Aerial patrol inspectors to communicate due dates for corrective maintenance work; Aerial patrol inspectors to use standard approved Entergy Flight Form to record inspection data.

03 Training Agenda and Meeting Roster.pdf - Training Agenda and Roster

04 Inspector Test.pdf -Copy of inspector test

08 Veg LOC - Signed.pdf - Transmission attestation letter for completion of the mitigation

11 Aviation Invoices.pdf - Invoice confirming completion of flights

09 Veg HR LOC - Signed.pdf - Transmission / Human Resources attestation letter

07 SMA Workload Reduction Email.pdf - Contractor Workload Reduction Email

06 Entergy Letter to SMA.pdf - Entergy Letter to SMA

10 Contract Review Email.pdf - Email confirming review of contracts and practices:

05 Entergy Flight Form.pdf - Entergy Flight Form

Tab 12.pdf - Notes of the interview with vegetation specialist following the June 13, 2008 event.

Tab 13.pdf – Notes of the interview with contractor to perform vegetation removal.

Entergy-MitigationPlanFollowUp.pdf – provides a narrative for Entergy's responses to SERC proving clarification on mitigation closure.

Entergy-Contract-VegSilverculture.pdf – Contractor tree growth study.

GG to BW june 13 2008 outage photos with date pages.pdf - Photographs of before and after the tree was removed



080723-080724-WestLA.pdf, 080616-MS.pdf, 080623-08715-BRandNOLA.pdf, 080701-080725-AR1.pdf, 080701-08725-AR2.pdf, 080716-NorthLA.pdf - Aerial patrol notes throughout Entergy' service area following the vegetation outage on June 13, 2008.

P2Summary\_r1.xls – Summary of the Priority 2 conditions identified during patrols and their resolutions.

### **Conclusion:**

Based on its review of the Mitigation Plan closure evidence, SERC Staff requested that Entergy further modify its TVMP to clarity and to remove ambiguity. Entergy revised its TVMP to incorporate changes identified by SERC Staff and trained its personnel on the revised TVMP, with the TVMP revision 3 becoming effective on January 28, 2009. On January 29, 2009 SERC Reliability Corporation Compliance Staff ("SERC Staff") completed its review of the evidence submitted by Entergy in support of its Certification of Completion of the subject Mitigation Plan. Based on its review of the evidence submitted, SERC Staff verifies that, in its professional judgment, all required actions in the Mitigation Plan have been completed and Entergy is in compliance with the subject Reliability Standard Requirement.

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

### **Respectfully Submitted,**

Andrea Koch, Compliance Engineer  
James Harrell, Senior Compliance Auditor

**Attachment c**

**Notice of Filing**

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Entergy

Docket

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

NOTICE OF FILING  
December 30, 2009

Take notice that on December 30, 2009, the North American Electric Reliability Corporation (NERC) filed a Notice of Penalty regarding Entergy in the SERC Reliability Corporation region.

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

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

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

Comment Date: [BLANK]

Kimberly D. Bose,  
Secretary