



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

February 1, 2010

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

**Re: NERC Notice of Penalty regarding Calpine Corporation  
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 Calpine Corporation (Calpine), NERC Registry ID NCR00006,<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>

Between June 9, 2008 and June 12, 2008, SERC Reliability Corporation (SERC) concurrently conducted a Compliance Audit for Calpine and its fully owned subsidiary, Calpine Energy Services, NERC Registry ID NCR01189 (Audit). As a result of the Audit SERC identified potential violations for both entities. The Notice of Penalty with respect to Calpine Energy Services is being separately and concurrently submitted to the Commission.

With respect to Calpine, SERC identified alleged violations of PRC-005-1 Requirements (R) 1 and R2 for Calpine's failure to: (1) provide its maintenance and testing intervals or basis and a summary of its maintenance and testing procedures for all eight of its plants located in the SERC Region; and (2) show that its Protection System devices were maintained and tested within the defined intervals and the date each Protection System device was last tested/maintained for all eight of its plants located in the SERC Region. SERC also identified a potential violation by Calpine of IRO-004-1 R4 for Calpine's failure to produce evidence that it was providing its

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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 Calpine Corporation was included on the NERC Compliance Registry as a Generator Owner (GO) on May 31, 2007. As a GO, Calpine Corporation was subject to the requirements of NERC Reliability Standards PRC-005-1 and IRO-004-1.

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

Reliability Coordinator with information required for system studies. This Notice of Penalty is being filed with the Commission because, based on information from SERC, SERC and Calpine 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 violations of PRC-005-1 R1 and R2, and IRO-004-1 R4. According to the Settlement Agreement, Calpine neither admits nor denies the alleged violations of PRC-005-1 R1 and R2, and IRO-004-1 R4, but has agreed to the proposed penalty of one hundred-forty thousand dollars (\$140,000) to be assessed to Calpine, in addition to other remedies and actions to mitigate the instant alleged violations and facilitate future compliance under the terms and conditions of the Settlement Agreement. Accordingly, the alleged violations identified as NERC Violation Tracking Identification Numbers SERC200800138, SERC200800137 and SERC200800142, respectively, are being filed in accordance with the NERC Rules of Procedure and the CMEP.

### Statement of Findings Underlying the Alleged Violations

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 Calpine, included as Attachment d. 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	Calpine Corporation	NOC-260	SERC200800138	PRC-005-1	1	High <sup>4</sup>	140,000
SERC	Calpine Corporation	NOC-260	SERC200800137	PRC-005-1	2	High <sup>5</sup>	
SERC	Calpine Corporation	NOC-260	SERC200800142	IRO-004-1	4	High	

<sup>4</sup> When NERC filed Violation Risk Factors (VRF), it originally assigned PRC-005-1 R1 a “Medium” VRF. The Commission approved the VRF as filed; however, it directed NERC to submit modifications. NERC submitted the modified “High” VRF, which the Commission approved on August 6, 2007. Therefore, the “Medium” VRF for PRC-005-1 R1 was in effect from June 18, 2007 until August 6, 2007 when the “High” VRF became effective.

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

### PRC-005-1

The purpose of Reliability Standard PRC-005-1 is to ensure all transmission and generation Protection Systems<sup>6</sup> affecting the reliability of the Bulk Power System (BPS) are maintained and tested.

- Determination of PRC-005-1 R1 Alleged Violation:

PRC-005-1 R1 requires each Generator Owner, such as Calpine, that owns a generation Protection System to have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BPS. Specifically, the program shall include: (R1.1) maintenance and testing intervals and their basis; and (R1.2) summary of maintenance and testing procedures. PRC-005-1 R1 has a “High” Violation Risk Factor (VRF).

During the Audit, Calpine presented a general corporate guideline document to demonstrate compliance with PRC-005-1 accompanied with an explanation that the document was an overarching document and that each plant had its own procedures to meet the requirements of the standard.

To determine compliance with PRC-005-1 R1 for each plant, the SERC Audit Team (Auditors) reviewed the documents provided to verify the basis for the maintenance program and its intervals and summary procedures. These consisted of a variety of inspection reports, test reports and electrical maintenance requirements. After its review, the Auditors found that the evidence presented was deficient in the following areas: (1) the basis for all maintenance intervals was not defined in either the corporate program document or the plant-specific documents, and (2) the summary procedures for maintenance and testing of relays and DC circuitry were not defined in the corporate program document or the plant-specific documents.

SERC Enforcement Staff (SERC Staff) concluded that the facts and evidence supported a finding that Calpine allegedly violated PRC-005-1 R1, because at the time of the Audit, Calpine was unable to produce evidence to support its compliance with the standard. SERC Staff concluded that duration of the alleged violation was from June 18, 2007, when the Reliability Standard became mandatory and effective, until July 24, 2009 when Calpine mitigated the alleged violation.

- Determination of PRC-005-1 R2 Alleged Violation:

PRC-005-1 R2 requires each Generator Owner, such as Calpine, that owns a generation Protection System, to provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Entity on request (within 30 calendar days). Specifically, the documentation of the program implementation

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<sup>6</sup> *The NERC Glossary of Terms Used in Reliability Standards*, updated April 20, 2009, defines Protection System as “Protective relays, associated communication systems, voltage and current sensing devices, station batteries and DC control circuitry.”

shall include: R2.1) evidence Protection System devices were maintained and tested within the defined intervals; and R2.2) date(s) each Protection System device was last tested/maintained. PRC-005-1 R2 has a “Lower” VRF; however PRC-005-1 R2.1 and R2.2 both have “High” VRFs.

To demonstrate compliance with PRC-005-1 R2, the Auditors reviewed test information for Protection System devices at some of Calpine’s plants, but they were unable to review the documentation for each plant for all equipment in scope (protective relays, voltage and current sensing devices and station batteries). As of the completion of the Audit, Calpine had been unable to present evidence to confirm its full compliance with PRC-005-1 R2, SERC determined that maintenance had been completed for 1,195 of 1,758, or about 68%, of Calpine’s relevant batteries, Current Transformers, Potential Transformers, DC control circuitry, and relay devices that were subject to Calpine’s testing and maintenance program.

SERC Staff concluded that the facts and evidence supported a finding that Calpine allegedly violated PRC-005-1 R2, because at the time of the Audit, Calpine was unable to produce evidence to support its full compliance with the standard requirement. SERC Staff concluded that duration of the alleged violation was from June 18, 2007, when the Reliability Standard became mandatory and effective, until July 24, 2009 when Calpine mitigated the alleged violation.

SERC Staff concluded that the actual or foreseeable risk to the reliability of the BPS as a result of the alleged violations of PRC-005-1 R1 and R2 was minimal because the loss of generation output from its facilities that had not been tested would have been below the threshold for the Minimum Contingency Reserve Requirement, as set forth in SERC’s Contingency Reserve Policy. In addition, failure to isolate a fault at the plant level would initiate the next level of protection available.

#### IRO-004-1

The purpose of Reliability Standard IRO-004-1 is to require each Reliability Coordinator to conduct next-day reliability analyses for its Reliability Coordinator Area to ensure the BPS can be operated reliably in anticipated normal and Contingency conditions. System studies must be conducted to highlight potential interface and other operating limits, including overloaded transmission lines and transformers, voltage and stability limits, *etc.* Plans must be developed to alleviate System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) violations.

- Determination of IRO-004-1 R4 Alleged Violation:

IRO-004-1 R4 requires each Generator Owner, such as Calpine, Transmission Operator, Balancing Authority, Transmission Owner, Generator Operator and Load-Serving Entity in the Reliability Coordinator Area to provide information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern

Interconnection and 1200 Pacific Standard Time for the Western Interconnection.  
IRO-004-1 R4 has a “High” VRF.

During the scheduled Audit that commenced on June 9, 2008 and ended on June 12, 2008, Calpine was unable to produce evidence to SERC that it was providing its Reliability Coordinator with information required for system studies.

On June 25, 2008, subsequent to completion of the Audit, Calpine provided SERC with evidence, in the form of electronic tags from its OATI tagging system, showing that it had been providing the information required by IRO-004-1 R4 to its Balancing Authority and Transmission Service Provider. SERC Staff thereafter requested, and Calpine provided, (i) additional screen shots of the electronic tags for the months October or December 2007 for each of the eight plants operated by Calpine in the SERC Region, (ii) verification that Calpine was providing seasonal data to its Host Balancing Authority and Transmission Service Provider, and (iii) screen shots from its Independent Power Producer Schedule Request system. SERC reviewed the screen shots from the tagging system to ensure unique code, creation/approval of tag date, start date, generation and market flow. The more detailed information provided served to confirm compliance with IRO-004-1 for certain plants where the date stamp could not be confirmed from the screenshots originally provided.

SERC Staff concluded that the facts and evidence supported a finding that Calpine allegedly violated IRO-004-1 R4, because at the time of the Audit, Calpine was unable to produce evidence to show that it was providing its Reliability Coordinator information required for system studies.

- Determination of IRO-004-1 R4 Alleged Violation Duration and BPS Reliability Impact:

SERC Staff concluded that the actual or foreseeable risk to the reliability of the bulk power system as a result of the alleged violation of IRO-004-1 R4 was minimal, because Calpine was performing the requirement of the standard, but was unable to produce evidence that it was doing so at the time of the Audit. SERC determined that the duration of the alleged IRO-004-1 R4 violation was from June 12, 2008, the last day of the Audit, through October 24, 2008, when the Mitigation Plan was completed.

### **Regional Entity’s Proposed Sanctioning**

SERC has assessed a penalty of one hundred-forty thousand dollars (\$140,000) for the referenced violations. In reaching this assessment, SERC Staff considered the following factors in the determination of the appropriate penalty for Calpine’s alleged violations of PRC-005-1 R1 and R2 and IRO-004-1 R4 pursuant to this Settlement Agreement:

- a. According to the Settlement Agreement,<sup>7</sup> prior to June 18, 2007, Calpine self-reported non-compliance with Standard PRC-005-1 Requirements R1 and R2. Calpine mitigated this non-compliance on October 31, 2007 and SERC thereafter verified that Calpine had

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<sup>7</sup> See Settlement Agreement at PP 5 - 7.

completed the Mitigation Plan. However, as discussed in Paragraph 8 of the Settlement Agreement, “SERC Staff’s review of an entity’s certification of completion of its mitigation plan, particularly for potential violations that were identified prior to the mandatory reliability period, was not as robust as the current practice.” Therefore, notwithstanding Calpine’s completion of its Mitigation Plan for the pre-June 18, 2007 violation, Calpine was not in full compliance with PRC-005-1 R1 and R2.

- b. The non-compliance discussed immediately above in (a) was incurred and reported by Calpine prior to Reliability Standard PRC-005-1 becoming mandatory on June 18, 2007. Calpine has not had any violations of the NERC Reliability Standards, other than those addressed herein, since the standards became mandatory;
- c. Calpine was unable to provide the information requested to verify the scope of these alleged violations. After several requests and clarification of the format in which SERC required the supporting data, Calpine provided the information in the format required by SERC. Calpine cooperated with SERC Staff during meetings between the parties to discuss these events;
- d. Calpine agreed to resolve these alleged violations via settlement, and initiated various mitigation actions and preventative measures, before SERC prepared and issued a Notice of Alleged Violation and Proposed Penalty or Sanction;
- e. Calpine has implemented a wide-range of measures to address the alleged violations, to protect against future violations of the same or similar requirements and to strengthen its internal compliance program; and
- f. Calpine possessed a clear lack of intent to commit or to conceal the alleged violations.

After consideration of these and the above factors, SERC determined that, in this instance, the penalty amount of one hundred forty thousand dollars (\$140,000) 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>8</sup>**

#### Mitigation Plan Submittals

On July 25, 2008, Calpine submitted a draft Mitigation Plan to address the alleged violation of IRO-004-1 R4. SERC requested that Calpine include additional details, including clarification of the included milestones. Calpine added the additional details requested by SERC to the July 25, 2008 draft and, on August 13, 2008 submitted Mitigation Plan MIT-07-1068 for IRO-004-1 R4 without changing the July 25, 2008 dates on the document. The final Mitigation Plan was accepted by SERC on October 2, 2008, approved by NERC on October 20, 2008 and submitted as non-public information to FERC on October 20, 2008 in accordance with FERC orders.

On July 25, 2008, Calpine submitted a draft Mitigation Plan to address the alleged violations of PRC-005-1 R1 and R2. SERC requested additional details regarding the impact to the BPS. Calpine added the additional details requested by SERC and Calpine resubmitted the plan on

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<sup>8</sup> See 18 C.F.R § 39.7(d)(7).

January 8, 2009. The July 25, 2008 dates originally on the plan had been revised on the resubmitted document to reflect the January 8, 2009 submittal date. The resubmitted Mitigation Plan designated as MIT-07-1365 was accepted by SERC on January 15, 2009, approved by NERC on February 17, 2009 and submitted as non-public information to FERC on February 24, 2009 in accordance with FERC orders.

Completion of Mitigation Plan MIT-07-1068 (IRO-004-1 R4)

Calpine implemented the following actions in accordance with Mitigation Plan MIT-07-1068 to prevent recurrence of the alleged violation of IRO-004-1:

- a. Calpine Corporation strengthened its compliance program by taking a number of steps to insure compliance with all applicable Reliability Standards. According to the Settlement Agreement, these included:
  - hiring a director to report to its Vice President, NERC Compliance<sup>9</sup> to oversee NERC compliance activities within Calpine Energy Services, L.P.
  - establishing an effective, efficient and controlled environment which ensures compliance with all applicable standards and requirements;
  - improving the reporting structure of the NERC compliance team so that it reports to the Chief Legal Officer, who reports to the CEO;
  - creating the NERC Steering Committee comprised of Calpine executives and representatives from operations, internal audit, legal and engineering to focus the compliance team on important issues as they arise;
  - upgrading the compliance reporting software;
  - refining and updating policies and procedures to address the Reliability Standard issues raised in the audit; and
  - increasing training of personnel on Reliability Standards, policies and procedures.
- b. Calpine revised its current process and procedures to align with the use of its Plant Declaration Portal Application. The Plant Declaration Portal Application allows plant personnel to “declare” or formally communicate plant generation capabilities, thermal performance, and equipment availability to the trading and dispatch personnel. The tool also gives Calpine’s trading desk the ability to email Balancing Authorities and Transmission Service Providers the capabilities of an individual plant. This function also has historical record keeping ability and can assist Calpine in its compliance with the NERC Reliability Standards. Procedures will include outage reporting requirements, forms, and contacts for each applicable Transmission Operator standard as established by each Transmission Service Provider.
- c. Calpine tested and implemented the Plant Declaration Portal, as described above to enable a systematic, consistent exchange of plant data both internal and external to

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<sup>9</sup> The Mitigation Plan incorrectly stated the new director would report to the Corporate Director, Government and Regulatory Affairs.

Calpine. It allows users to send the MW data via e-mail to specified recipients within the Reliability Coordinator Area for system studies.

- d. Calpine began utilizing the archive feature of the OATI E-tag program to maintain historical data.
- e. Calpine began storing all external e-mail in the East Generation mailbox for auditing purposes.
- f. Calpine conducted training for all East Real-Time and Day-Ahead personnel on revised procedures, purpose and use of Plant Declaration Portal and requirements.

On October 30, 2008, Calpine certified that its Mitigation Plan MIT-07-1068 for IRO-004-1 R4 was completed as of October 24, 2008 and submitted the following as supporting evidence of completion of the plan:

- OATI tags for all eight plants covering multiple days and months to verify unique tag, date and time of creation, status, start and stop time of exchange, transmission system that transaction is taking place;
- Independent Power Producer Schedule confirming notification status date and time for information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions;
- SERC staff spoke with, and received the business card for, the new director responsible for compliance with the NERC Reliability Standards within the company's compliance organization;
- E-mails confirming outage scheduling coordination with appropriate entities;
- *Requirements\_Plant-Dec-East.doc* – This is a requirements document for the Plant Declaration Application that Calpine implemented to help prevent recurrence. The application allows Calpine declare or formally communicate plant generation capabilities, thermal performance, and equipment availability to the trading and dispatch personnel. The tool also gives the Trading Desk the ability to e-mail Balancing Authorities and Transmission Service Providers individual plant's capabilities. This function also has historical record keeping ability. The tool also copies each plants e-mails to the "Generation Desk East" mailbox for historical purposes and easy retrieval; and
- Plant Declaration – Commercial Operations Process document and attestation to training on Plant Declaration Process for appropriate personnel.

On December 22, 2008, SERC Staff finished its review of the Mitigation Plan and SERC verified all required actions in the Mitigation Plan were completed.

#### Completion of Mitigation Plan MIT-07-1365 (PRC-005-1 R1 and R2)

Calpine's Mitigation Plan required it to implement the following actions to prevent recurrence of the alleged violations of PRC-005-1:

- a. Develop an updated corporate guidance for facility maintenance and testing associated with PRC-005-1 by:



- Revising each facility specific process to include company-wide requirements that are standard and applicable to all facilities; and
  - Ensuring a uniform process for facilities which aids in the audit process.
- b. Review site specific requirements for each of its facilities and update its corporate procedure to contain the requirements for those facilities;
- c. Move site-specific guidance on compliance requirements to the appropriate section of its procedures to aid in audit process including:
- Updating reference documents for defining maintenance intervals for all equipment to most recent revisions (new references were already a part of the revised PRC-005 document); and
  - Incorporating recent NERC guidance NERC Protection System Maintenance A Technical Reference, which was not included in the initial procedure revisions.
- d. Establish a consistent format for the corporate guidance section of each facility-specific PRC-005-1 procedure to aid in audits;
- e. Revise its centralized maintenance management system (“CMMS” or “Maximo”) process, new or revised facility Preventative Maintenance items and/or Job Plans as necessary, to incorporate changes required to meet updated requirements;
- f. Establish a new revision of the site specific document that was reviewed and authorized for use at each facility;
- g. Establish a phase-in approach for the newer guidance at each plant facility, specifically:
- Changes in battery maintenance procedures to conform to a single set of guidelines based on IEEE Standard maintenance practices;
  - Changes in instrument transformer maintenance procedures based on updated guidance as referenced above; and
  - Commence testing in accordance with updated process.
- h. Establish a list of DC circuitry at each facility and test it in accordance with updated process research. In this process Calpine will:
- Enlist contractor support/educate contract personnel on desired outcome;
  - Gather all drawings and equipment lists for Contractor review;
  - Contractor review of site drawings/records in order to generate a list of DC Circuitry that is verified by functional testing;
  - Calpine Engineering and plant personnel review lists and verify equipment; and
  - Incorporate lists of DC Circuitry into plant specific PRC-005 listings to establish next testing due date.
- i. Develop site procedures and processes for performance of functional testing at each plant, to include:
- Developing generic guidance for Calpine facilities for functional testing (vendor and Calpine); and
  - Modifying the generic process for use at each specific plant facility according to the plant’s unique characteristics.
- j. Complete functional testing on the DC Circuitry at all facilities.

On July 24, 2009, Calpine certified that its Mitigation Plan MIT-07-1365 for PRC-005-1 R1 and R2 was completed as of July 24, 2009 and submitted the following as supporting evidence of completion of the plan:

1. Document indicating Section/Page and Procedure Step that satisfies each portion of the PRC-005 R1 Standard;
2. Facility specific PRC-005 Procedure for each of the eight (8) generating facilities;
3. Spreadsheet with each facilities equipment list; date of last test, and next scheduled test date clearly marked;
4. Evidence folder for each facility, segregated by equipment type, containing the files and information supporting the test dates specified in the spreadsheet;
5. Work orders that specified start and stop dates for maintenance as well as a description and status of task; inspection reports/test reports that included definition of test, test equipment, test procedures, annual maintenance procedures, test results, problem area/corrective action performed, graphs, and test data; and daily inspection logs for battery monthly, quarterly, and annual testing and inspection forms for all eight plants;
6. Spreadsheets listing Current Transformers, Potential Transformers, intervals, date last tested and date of next scheduled test dates, work orders, specifying start and stop dates for maintenance as well as a description and status of work tasks to confirm Current Transformers, Potential Transformers inspections for all eight plants;
7. Documents to confirm relay testing for all eight plants including multiple relay test results reports for line protection, field test reports containing maintenance and testing of plant relays and calibration of transducers associated with steam and combustion turbine generators, as well as investigating nuisance trips from steam turbine overall differential relays, acceptance test results, one line diagrams and reports on turbine generator “(78)” relay, and overcurrent relay test results; and
8. Documents to confirm DC functional testing for all eight plants including marked up drawings of Switchyards and, relay schemes, test procedures, one line diagrams and certification of testing and calibrating relays with in-service settings.

On January 18, 2010, SERC Staff finished its review of the Mitigation Plan and SERC verified all required actions in the Mitigation Plans were completed.

## **Statement Describing the Proposed Penalty, Sanction or Enforcement Action Imposed<sup>10</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>11</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 forty thousand dollars (\$140,000) against Calpine, and other actions to promote

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<sup>10</sup> See 18 C.F.R § 39.7(d)(4).

<sup>11</sup> *North American Electric Reliability Corporation*, “Guidance Order on Reliability Notices of Penalty,” 124 FERC ¶ 61,015 (2008).

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 violations at issue.

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

- (1) Calpine had self-reported a previous non-compliance with PRC-005-1 R1 and R2 prior to June 18, 2007 and mitigated the reported non-compliance, by October 31, 2007. Otherwise, beyond those addressed by the instant agreement there are no further violations of the Reliability Standards, since the standards became mandatory, by Calpine;
- (2) Calpine agreed to resolve this issue via settlement and initiated various mitigation actions and preventative measures before receiving a Notice of Alleged Violation and Proposed Penalty or Sanction from SERC;
- (3) Calpine has implemented a wide-range of measures to address the alleged violations, to protect against future violations of the same or similar requirements and to strengthen its internal compliance program;
- (4) Calpine possessed a clear lack of intent to commit or to conceal the alleged violations;
- (5) In its determination of the sanctioning proposed in the instant settlement SERC has appropriately considered the actions, facts and circumstances, of both Calpine and SERC itself, relevant to Calpine's initial pre-June 18 2007 self-report and 2007 mitigation of its non-compliance with requirements R1 and R2 of reliability standard PRC-005-1; and
- (6) There was no serious or substantial risk to the bulk power system for the reasons stated above.

For the foregoing reasons, the NERC BOTCC approves the Settlement Agreement and believes that the proposed one-hundred forty thousand dollar (\$140,000) penalty is appropriate for the violations and circumstances in question, and consistent with NERC's goal to promote and ensure reliability of the bulk power system.

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) SERC's Auditor Screening Worksheet PRC-005-1 R1 dated June 13, 2008, included as Attachment a;
- b) SERC's Auditor Screening Worksheet PRC-005-1 R2 dated June 13, 2008, included as Attachment b;
- c) SERC's Auditor Screening Worksheet IRO-004-1 R4 dated June 13, 2008, included as Attachment c;
- d) Settlement Agreement by and between Calpine and SERC executed August 20, 2009, included as Attachment d;
  - i) Mitigation Plan MIT-07-1365 (PRC-005-1 R1 and R2), submitted January 8, 2009 included in Settlement Agreement as Appendix A-1;
  - ii) Calpine's Certification of Completion of Mitigation Plan MIT-07-1365 (PRC-005-1 R1 and R2), dated July 24, 2009 included in Settlement Agreement as Appendix A-2;
  - iii) Mitigation Plan MIT-07-1068 (IRO-004-1 R4), submitted August 13, 2008 included in Settlement Agreement as Appendix A-4;
  - iv) Calpine's Certification of Completion of Mitigation Plan MIT-07-1068 (IRO-004-1 R4), dated October 24, 2008 included in Settlement Agreement as Appendix A-5;<sup>12</sup>
  - v) SERC's Verification of Completion of MIT-07-1068 (IRO-004-1 R4), dated December 22, 2008 included in Settlement Agreement as Appendix A-6; and
- e) SERC's Verification of Completion of Mitigation Plan MIT-07-1365 (PRC-005-1 R1 and R2), dated January 18, 2010, included as Attachment e.

**A Form of Notice Suitable for Publication<sup>13</sup>**

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

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<sup>12</sup> Calpine's Certification of Completion for MIT-07-1068 incorrectly states the date of Certification as October 30, 2009; the correct date is October 24, 2009.

<sup>13</sup> See 18 C.F.R § 39.7(d)(6).

## Notices and Communications

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

<p>Gerald W. Cauley* President and Chief Executive Officer David N. Cook* Vice President and General Counsel North American Electric Reliability Corporation 116-390 Village Boulevard Princeton, N.J. 08540-5721 (609) 452-8060 (609) 452-9550 – facsimile gerry.cauley@nerc.net david.cook@nerc.net</p> <p>Duncan Brown* Vice President – NERC Compliance Calpine Corporation 4160 Dublin Blvd, Suite 100 Dublin, CA 94568 (925) 557-2251 (925) 479-9175 - facsimile duncanb@calpine.com</p> <p>Diana M. Woodman* Senior Counsel Calpine Corporation 717 Texas Ave., Ste 1000 Houston, TX 77002 (713) 820-4030 (713) 830-8751 - facsimile dwoodman@calpine.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* Interim President and Chief Executive Officer SERC Reliability Corporation 2815 Coliseum Centre Drive Charlotte, NC 28217 (704) 940-8205 (704) 357-7914 – facsimile tgalloway@serc1.org</p> <p>Marisa A. Sifontes * Interim Director of Compliance and Compliance Legal Counsel SERC Reliability Corporation 2815 Coliseum Centre Drive Charlotte, NC 28217 (704) 494-7775 msifontes@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>
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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,

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

/s/ Rebecca J. Michael  
Rebecca J. Michael  
Assistant General Counsel  
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

cc: Calpine Corporation  
SERC Reliability Corporation

Attachments

**Attachment a**

**SERC's Auditor Screening Worksheet PRC-005-1  
R1 dated June 13, 2008**

## Screening Worksheet

Tracking Number

Entity Name
Calpine Corporation

Is Entity Registered?
Yes

Entity Contact
Brent Hebert

Entity Telephone Number
713 570-4469

Standard	Requirement
PRC-005-1	R1

Is Issue Still Occurring?
Yes

Remedial Action Directive?
No

Date Issue Occurred
10/31/07

Date Issue/Event Reported
6/12/08

Method of Discovery
Audit

NERC 48-Hour Reportable?
No

Threat to BES?
No

Alleged Violation Applies to:													
BA	DP	GO	GOP	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
		Yes											

Brief Description
Basis for maintenance and testing intervals not provided in program documents for any of the 8 facilities. Summary maintenance and testing procedures for relays and DC Control Circuitry not contained in program documents for any of the 8 facilities.

Detailed Description
<p>The basis for maintenance and testing intervals for relays, dc control circuitry are not provided in the M&amp;T Program documents for any of the entity's 8 facilities. The audit team confirmed that DC control circuitry maintenance was being performed during relay maintenance. The basis for intervals is established via Interconnection Agreements for each of the 8 facilities. Additional basis for maintenance intervals, in program documents, referred to Best Maintenance Practices. Documentation identifying "Best Maintenance Practices" was not provided by the entity.</p> <p>Summary maintenance procedures for relays and DC control circuitry are not provided in the M&amp;T Program documents for any of the entity's 8 facilities. Maintenance procedures are included, individually for each relay, in Maximo (maintenance management program) Job Plans. One complete screenshot of a Maximo Job Plan was provided as evidence. Additional screenshots of Maximo work orders and job plans only provided partial view of the 1<sup>st</sup> 4 steps of the job plan for each relay identified. Alternately, the entity offered contractor's test results (approximately 4-10 pages per relay) to identify maintenance and testing procedures</p> <p>The audit team spent 5 hours and 19 minutes reviewing part of the evidence needed for this requirement. Review of this, the first standard audited, was suspended after 4 hours to allow the entity to better organize their documentation. Review of the standard resumed the next day with facility 4 of 8. The audit team remained on site a day longer than scheduled to facilitate an adequate audit. Additionally, review of other standards in the audit scope also required much more time than normal. The entity's failure to properly prepare evidence for the audit precluded review of</p>



previous versions of their program documents (prior to 12/07) to confirm compliance during the entire review period.

**NOTE: Calpine certified closure of a mitigation plan for this issue on 10/31/07. SERC Tracking Number 2007-081.**

Prepared By	Date
James R. Harrell	6/13/08

**Attachment b**

**SERC's Auditor Screening Worksheet PRC-005-1  
R2 dated June 13, 2008**

## Screening Worksheet

Tracking Number

Entity Name
Calpine Corporation

Is Entity Registered?
Yes

Entity Contact
Brent Hebert

Entity Telephone Number
713 570-4469

Standard	Requirement
PRC-005-1	R2

Is Issue Still Occurring?
Yes

Remedial Action Directive?
No

Date Issue Occurred
10/31/07

Date Issue/Event Reported
6/12/08

Method of Discovery
Audit

NERC 48-Hour Reportable?
No

Threat to BES?
No

Alleged Violation Applies to:													
BA	DP	GO	GOP	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
		Yes											

Brief Description
<p>The audit team was unable to verify that maintenance of protection system components had been completed on schedule for all but one of 8 facilities. The only documentation of maintenance offered for the 7 unconfirmed facilities consisted of contractor's maintenance records (4-10 pages per device). The entity's failure to properly prepare evidence for the audit precluded a device-by-device review to ensure maintenance was performed on schedule.</p>

Detailed Description
<p>The audit team was unable to verify that maintenance of protection system components had been completed on schedule for all but one of 8 facilities. Summary maintenance document, provided for the one facility reviewed, indicated that maintenance for most devices was overdue. The entity provided contractor's maintenance results (approximately 4-10 pages per device) confirming that maintenance had been performed more recently than the summary document indicated.</p> <p>The audit team spent 5 hours and 19 minutes reviewing part of the evidence needed for this requirement. Review of this, the first standard audited, was suspended after 4 hours to allow the entity to better organize their documentation. Review of the standard resumed the next day with facility 4 of 8. The audit team remained on site a day longer than scheduled to facilitate an adequate audit. Additionally, review of other standards in the audit scope also required much more time than normal. The entity's failure to properly prepare evidence for the audit precluded review of a device-by-device review to ensure maintenance was performed on schedule.</p> <p><b>NOTE: Calpine certified closure of a mitigation plan for this issue on 10/31/07. SERC Tracking Number 2007-081.</b></p>

Prepared By	Date
James R. Harrell	6/13/08

**Attachment c**

**SERC's Auditor Screening Worksheet IRO-004-1  
R4 dated June 13, 2008**

## Screening Worksheet

Tracking Number

Entity Name
Calpine Corporation

Is Entity Registered?
Yes

Entity Contact
Brent Hebert

Entity Telephone Number
713 570-4469

Standard	Requirement
IRO-004-1	R4

Is Issue Still Occurring?
Yes

Remedial Action Directive?
No

Date Issue Occurred
6/18/07

Date Issue/Event Reported
6/12/08

Method of Discovery
Audit

NERC 48-Hour Reportable?
Yes

Threat to BES?
No

Alleged Violation Applies to:													
BA	DP	GO	GOP	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
		Yes											

Brief Description
With the exception of one of their 8 facilities, the entity did not provide evidence that information required for system studies had been provided to the appropriate entities.

Detailed Description
<p>The entity indicated that they would provide daily availability reports and OATI tags to verify compliance with this requirement. The audit team asked that they provide these documents for the period of the week of July 4<sup>th</sup> 2007.</p> <p>After 2 ½ hours, the entity's Subject Matter Expert (SME) indicated that he was unable to provide the requested documents for that time period, stating that he was new in his position and only had access to records back through November of last year.</p> <p>The audit team requested the entity to supply documents for the period of the 1<sup>st</sup> week of November, 2007.</p> <p>After 4 hours, the entity SME indicated that he was unable to provide any of the documents.</p> <p>The entity was notified, well in advance of the audit, of the requirement to have evidence of compliance available for auditor review. Notifications were provided in Calpine's List of Documents to be Provided or Have Available, Introduction Letter, and during a Pre-Audit Webex.</p>

Prepared By	Date
James R. Harrell	6/13/08

## **Attachment d**

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

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**SETTLEMENT AGREEMENT**

**OF**

**SERC RELIABILITY CORPORATION**

**AND**

**CALPINE CORPORATION**

**I. INTRODUCTION**

1. SERC Reliability Corporation (“SERC”) and Calpine Corporation (“Calpine”) enter in to this Settlement Agreement (“Settlement Agreement”) to resolve all outstanding issues arising from a preliminary and non-public assessment resulting in SERC’s determination and findings, pursuant to the North American Electric Reliability Corporation (“NERC”) Rules of Procedure, of three alleged violations by Calpine of NERC Reliability Standards PRC-005-1 (Transmission and Generation Protection System Maintenance and Testing) Requirements 1 and 2 (SERC Tracking No. 08-053 and 052, NERC Violation ID No. SERC200800138 and 137) and IRO-004-1 (Reliability Coordination – Operations Planning) Requirement 4 (SERC Tracking No. 08-059, NERC Violation ID No. SERC200800142).

**II. STIPULATION**

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

**Background**

3. Calpine Corporation is an independent power producer engaged in the production and sale of electricity in the United States and Canada. Calpine is the largest independent power producer in the United States with 78 power plants located throughout the NERC regions. Calpine’s principal offices are located in Houston, Texas.
4. Calpine is registered with SERC as a Generator Owner (“GO”) (NCR00006).

5. On June 15, 2007, Calpine self-reported a possible violation of NERC Reliability Standard PRC-005-1, Requirements 1 and 2, stating that it did not have appropriate documentation to demonstrate compliance with the standard.
6. On June 22, 2007, Calpine submitted an initial mitigation plan to address its self report. On July 20, 2007, Calpine submitted a revised mitigation plan that changed the milestone end dates and moved some of the milestone activities to characterize them as actions to prevent recurrence. In its mitigation plan, Calpine stated that it was going to use industry experts to review and complete a gap analysis, develop standard and specific corporate draft compliance procedures that will be used to provide guidance and document the process for generator protection system maintenance and testing to comply with the standard. It also stated that Calpine would ensure that the appropriate procedures were established and staff would be trained on performing protection system maintenance. Calpine further committed to supply the compliance dates for generator protection system maintenance and testing program for all of its facilities in the SERC region.
7. Calpine certified that its mitigation plan had been completed on October 31, 2007. On December 12, 2007, SERC staff verified completion of the mitigation plan. SERC staff reviewed Calpine's Broad River relay testing program, relay one lines, relay and lockout schematics, and screen shot of Calpine's Electronic Work Control system (Maximo).
8. In the very early stages of mandatory enforcement during the last half of 2007, SERC Staff's review of an entity's certification of completion of its mitigation plan, particularly for potential violations that were identified prior to the mandatory reliability period, was not as robust as the current practice. As a result of the Commission's July 3, 2008 Order on Notices of Penalty and other lessons learned, SERC Staff has significantly improved its review and verification of entities' mitigation plan completion. Process improvements include requiring the entity to identify the full extent of condition for violations as part of the follow-up to discovery of a possible alleged violation and requiring independent compliance staff review of each mitigation plan closure. The later Compliance Audit provided a more comprehensive and rigorous review of all associated standard requirements.
9. On December 17, 2007, SERC notified Calpine that a compliance audit to determine its compliance with the NERC Reliability Standards had been scheduled for June 9-11, 2008.<sup>1</sup>
10. On March 14, 2008, SERC Staff sent a letter to Calpine detailing, among other things, the Reliability Standards that would be the focus of the upcoming compliance

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<sup>1</sup> Calpine and its affiliate, Calpine Energy Services (NCR01189), a registered GOP and PSE, were noticed that both entities would be audited during the scheduled period.



audit. Among the standards to be audited were NERC Reliability Standards PRC-005 (Transmission and Generation Protection System Maintenance and Testing) and IRO-004-1 (Reliability Coordination – Operations Planning).

### **Alleged Violations**

11. NERC Reliability Standard PRC-005-1, Requirement 1 requires each Generator Owner that owns a generation Protection System, have maintenance and testing program for Protection Systems that affect the reliability of the BES.<sup>2</sup>
12. NERC Reliability Standard PRC-005-1, Requirement 2 requires each Generator Owner that owns a generation Protection System provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days).
13. NERC Reliability Standard IRO-004-1, Requirement 4 requires a Generator Operator to provide to its Reliability Coordinator information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. The information must be provided by 1200 Central Standard Time for the Eastern Interconnection.<sup>3</sup>
14. During the scheduled audit that took place from June 9 - 12, 2008,<sup>4</sup> Calpine was unable to:
  - a. Provide its maintenance and testing intervals or the basis and summary of its maintenance and testing procedures for all eight of its plants located in the SERC region;
  - b. Show that its Protection System devices were maintained and tested within the defined intervals and the date each Protection System device was last tested/maintained for all eight of its plants located in the SERC region; or
  - c. Produce evidence that it was providing its Reliability Coordinator with information required for system studies.

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<sup>2</sup> NERC Reliability Standard PRC-005-1 –Transmission and Generation Protection System Maintenance and Testing, approved by NERC Board of Trustees on May 2, 2006, approved by FERC effective June 18, 2007.

<sup>3</sup> NERC Reliability Standard IRO-004-1 – Reliability Coordination – Operations Planning, approved by NERC Board of Trustees on February 7, 2006, approved by FERC effective June 18, 2007.

<sup>4</sup> The audit was originally scheduled to end on June 11, 2008, but an additional day was added to facilitate a thorough review of the Standards being audited.

15. During the audit, Calpine presented a general corporate guideline document to demonstrate compliance with NERC Reliability Standard PRC-005-1. Calpine's Director for NERC Regulatory Compliance explained that document was an overarching document and that each plant had its own procedures to meet the requirements of the standard.
16. To determine compliance for each plant with NERC Reliability Standard PRC-005-1, Requirement 1, the Audit Team reviewed the documents provided to verify the basis for the maintenance program and its intervals and summary procedures. These consisted of a variety of inspection reports, test reports and electrical maintenance requirements.
17. After four hours, the Audit Team suspended review of the documentation to allow Calpine to locate and better organize its documentation to facilitate an efficient review. After its final review, the Audit Team found that the evidence presented was deficient in the following areas: the basis for all maintenance intervals was not defined in either the corporate program document or the plant-specific documents shown and the summary procedures for maintenance and testing of relays and DC circuitry were not defined in the corporate program document or the plant-specific documents. Calpine stated that it does not have any Associated Communication Systems.
18. To demonstrate compliance with NERC Reliability Standard PRC-005-1, Requirement 2 the Audit Team reviewed test information for the Protection System devices at some of Calpine's plants, but was unable to review the documentation for each plant for all equipment in scope (protective relays, voltage and current sensing devices and station batteries). As detailed above, the Audit Team suspended review of the documentation to facilitate an efficient review. The audit was extended one extra day to allow Calpine additional time to demonstrate compliance. On June 12, 2008 when the audit was complete, Calpine had been unable to present evidence confirming compliance with NERC Reliability Standard PRC-005-1, Requirement 2.
19. At the completion of the audit, the Audit Team identified three possible violations of the NERC Reliability Standards. The Audit Team Lead completed an audit screening worksheet and submitted it to Enforcement Staff.
20. After confirming Calpine's NERC registration status, SERC Staff commenced its detailed compliance assessment. On June 17, 2008, SERC Staff issued to Calpine a Compliance Assessment Notice advising Calpine of the initiation of a formal assessment to determine, in part, its compliance relative to NERC Reliability Standards PRC-005-1, Requirements 1 and 2, and IRO-004-1, Requirement 4 and directing Calpine to preserve all relevant records and information. At this time, SERC Staff contacted Calpine with questions to assist in its assessment, to which Calpine promptly responded. Specifically, SERC Staff requested OATI tags for all eight plants covering multiple days and months to verify unique tag, date and time of creation, status, start and stop time of exchange, transmission system that transaction is

taking place, Independent Power Producer Schedule confirming notification status date and time for information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and know Interchange Transactions, and emails confirming outage scheduling coordination with appropriate entities to show Calpine compliance with NERC Reliability Standard IRO-004-1 Requirement 4.

21. For NERC Reliability Standard PRC-005-1, Requirements 1 and 2, SERC requested plant information and modes (i.e. combined cycle, etc.), the ratings of the generators, and configuration options. SERC staff also requested documentation detailing the maintenance and testing schedules for all specific protective system devices, including those that were past due for maintenance as of the audit on June 12, 2008, the devices that remained non-compliant, listed by plant, as of January 28, 2009, and a list of outages for each plant since the June 2008 audit and what maintenance was performed during those outages for all eight plants. SERC Staff also requested detail on Calpine's relay communications equipment to confirm whether or not Calpine had Associated Communication Systems. SERC Staff promptly established direct contact with representatives of Calpine to begin the process of gathering information and documentation for the detailed compliance assessment. SERC Staff also reported the possible violations to NERC, which, in turn, reported the possible violations to the Federal Energy Regulatory Commission ("Commission") in accordance with the Compliance Monitoring Enforcement Program ("CMEP") of the NERC Rules of Procedure.
22. To gather additional information on the scope of the alleged violation, and to verify sufficiency of the scope of the mitigation plan, SERC staff reviewed a summary of the specific protective system devices that were past due as of the end of the audit on June 12, 2008, broken down by total protective devices and the percentage of devices that needed maintenance. This document showed that at the time of the audit, maintenance had already been completed for 1195 of the 1758 devices or 68% of the batteries, CT/PT, DC Control circuitry, and Relay devices. The outage schedule was also reviewed to determine if an opportunity existed to perform the necessary maintenance on the additional protective devices. SERC staff reviewed Calpine's PM (Preventive Maintenance) Guidelines and the draft PRC-005-1 Transmission and Generation Protection System and Maintenance Testing document that was dated June 23, 2008, a revised template that is to be used by all of the plants. The revisions to the Transmission and Generation Protection System and Maintenance Testing document included changes to instrument transformers, DC circuitry, communications requirements and documentation. Specifically, the revised procedures updated and improved the maintenance and testing schedule with more frequent testing and tighter intervals between test periods. Additionally, the plant-specific procedures for compliance with NERC Reliability Standard PRC-005-1 were reviewed. SERC staff also reviewed Calpine's Progressive Discipline Policy.
23. On June 25, 2008, Calpine provided SERC with evidence, in the form of electronic tags from its OATI tagging system, showing that it had been providing the

information required by NERC Reliability Standard IRO-004-1, Requirement 4 to its Balancing Authority and Transmission Service Provider.

24. SERC Staff subsequently requested, and Calpine provided, additional screenshots of the electronic tags for the months October or December 2007 for each of the eight plants operated by Calpine in the SERC region, verification that Calpine was providing seasonal data to its Host Balancing Authority and Transmission Service Provider, as well as screenshots from its Independent Power Producer Schedule Request system. The print screens from the tagging system were reviewed to ensure unique code, creation/approval of tag date, start date, generation and market flow. The more detailed information served to confirm compliance with NERC Reliability Standard IRO-004-1 for certain plants where the date stamp could not be confirmed from the screenshots originally provided.
25. SERC Staff concluded that the facts and evidence supported a finding that Calpine violated NERC Reliability Standard PRC-005-1 Requirement 1, because at the time of the audit, Calpine was unable to produce evidence to support its compliance with the standard. Requirement 1 of NERC Reliability Standard PRC-005-1 is assigned a “High” VRF consistent with the VRF filed by NERC and approved by the Commission.
26. SERC Staff concluded that the facts and evidence supported a finding that Calpine violated NERC Reliability Standard PRC-005-1, Requirement 2, because at the time of the audit, Calpine was unable to produce evidence to support its compliance with the standard. Requirement 2 of NERC Reliability Standard PRC-005-1 is assigned a “High” VRF consistent with the VRF filed by NERC and approved by the Commission.
27. SERC Staff concluded that the facts and evidence supported a finding that Calpine violated NERC Reliability Standard IRO-004-1, Requirement 4, because at the time of the audit, Calpine was unable to produce evidence to show that it was providing its Reliability Coordinator information required for system studies. Requirement 4 of NERC Reliability Standard IRO-004-1 is assigned a “High” VRF consistent with the VRF filed by NERC and approved by the Commission.
28. SERC Staff concluded that the actual or foreseeable risk to the reliability of the bulk power system as a result of the alleged violation of NERC Reliability Standard PRC-005-1 was minimal because the loss of generation output from its facilities that had not been tested would have been below the threshold for the Minimum Contingency Reserve Requirement, as set forth in SERC’s Contingency Reserve Policy. In addition, failure to isolate a fault at the plant level would initiate the next level of protection available.
29. SERC Staff concluded that the actual or foreseeable risk to the reliability of the bulk power system as a result of the alleged violation of NERC Reliability Standard IRO-

004-1 was minimal, as Calpine was performing the required notifications for the standard, but was unable to produce evidence of that at the time of the audit.

30. On December 30, 2008, Calpine formally requested settlement discussions for the resolution of the alleged violations.

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

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

31. SERC finds that at the time of the audit, Calpine, as a Generator Owner, could not produce evidence or records to confirm Maintenance and testing intervals and their basis and summary of maintenance and testing procedures for all of the Protection System components. This is a violation of NERC Reliability Standard PRC-005-1, Requirement 1, beginning on June 18, 2007 and continuing until mitigated.
32. SERC finds that at the time of the audit, Calpine, as a Generator Owner, could not produce evidence or records to confirm all Protection System devices were maintained and tested within the defined intervals and the date each Protection System device was last tested/maintained. This is a violation of NERC Reliability Standard PRC-005-1, Requirement 2, beginning on June 18, 2007 and continuing until mitigated.
33. SERC finds that at the time of the audit, Calpine, as a Generator Owner, failed to provide evidence that it provided the Reliability Coordinator with information required for system studies. This is a violation of NERC Reliability Standard IRO-004-1, Requirement 4, beginning on June 12, 2008 and continuing until October 24, 2008.
34. SERC Staff concluded that there was no serious or substantial risk on the reliability of the bulk power system, as discussed above.
35. SERC agrees that this Settlement Agreement is in the best interest of the parties and in the best interest of bulk power system reliability.

#### **Statement of Calpine**

36. Calpine neither admits nor denies that the facts set forth and agreed to by the parties for purposes of this Agreement constitute violations of NERC Reliability Standards PRC-005-1, Requirements 1 and 2 and IRO-004-1, Requirement 4.
37. Calpine has entered into this settlement agreement to avoid lengthy proceedings and expedite the settlement of alleged violations. Although Calpine does not admit to, nor does it deny, the alleged violations of NERC Reliability Standards PRC-005-1, Requirements 1 and 2 and IRO-004-1, Requirement 4, Calpine 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. Calpine agrees that this agreement is in the best interest of the parties and in the best interest of maintaining a reliable electric infrastructure.

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

38. Calpine submitted two mitigation plans to address each of the alleged violations. Calpine originally submitted each of the draft mitigation plans on July 25, 2008. The mitigation plan for NERC Reliability Standard IRO-004-1 was resubmitted on August 13, 2008 to provide additional details of and clarification for the included milestones. A revised mitigation plan for NERC Reliability Standard PRC-005-1 was submitted on January 8, 2009 and provided additional information regarding the impact to the Bulk Power System. Mitigation Plan MIT-07-1365 for NERC Reliability Standard PRC-005-1, Requirements 1 and 2 was accepted by SERC on January 15, 2009 and approved by NERC on February 17, 2009. Mitigation Plan MIT-07-1068 for NERC Reliability Standard IRO-004-1, Requirement 4 was accepted by SERC on October 2, 2008 and approved by NERC on October 20, 2008. Calpine's Mitigation Plan for NERC Reliability Standard IRO-004-1, Requirement 4 was completed on October 24, 2008 and SERC staff verified completion on December 22, 2008. Calpine's Mitigation Plan for NERC Reliability Standard PRC-005-1, Requirements 1 and 2 is ongoing. Both of Calpine's Mitigation Plans are attached hereto in Appendix A.
39. Actions implemented by Calpine in its Mitigation Plans will help to prevent a recurrence of any similar violation for NERC Reliability Standard IRO-004-1, Requirement 4. Specifically:
- a. Calpine Corporation has strengthened its compliance program by taking a number of steps to insure compliance with all applicable Reliability Standards. These include: i) hiring a director to report to its Vice President, NERC Compliance to oversee NERC compliance activities within Calpine Energy Services, L.P.; ii) improving the reporting structure of the NERC compliance team so that it reports to the Chief Legal Officer, who reports to the CEO; iii) creating the NERC Steering Committee comprised of Calpine executives and representatives from operations, internal audit, legal and engineering to focus the compliance team on important issues as they arise; iv) upgrading the compliance reporting software; v) refining and updating policies and procedures to address the Reliability Standard issues raised in the audit; vi) increasing training of personnel on Reliability Standards, policies and procedures.
  - b. Calpine revised its current process and procedures to align with the use of its Plant Declaration Portal Application. The Plant Declaration Portal Application allows plant personnel to "declare" or formally communicate plant generation capabilities, thermal performance, and equipment availability to the trading and dispatch personnel. The tool also gives Calpine's trading desk the ability to

email Balancing Authorities and Transmission Service Providers the capabilities of an individual plant. This function also has historical record keeping ability and can assist Calpine in its compliance with the NERC Reliability Standards. Procedures will include outage reporting requirements, forms, and contacts for each applicable TOP standard as established by each Transmission Service Provider.

- c. Calpine implemented the Plant Declaration Portal, as described above to enable a systematic, consistent exchange of data both internal and external to Calpine. It allows users to send the MW data via email to specified recipients within the RC area for system studies.
  - d. Calpine is utilizing the archive feature of the OATI E-tag program to maintain historical data.
  - e. Calpine stores all external email in the East Generation mailbox for auditing purposes.
  - f. Calpine conducted training for all East Real-Time and Day-Ahead personnel on revised procedures, purpose and use of Plant Declaration Portal and requirements.
40. Actions implemented by Calpine in its Mitigation Plan once completed will help to prevent a recurrence of any similar violation for NERC Reliability Standard PRC-005-1, Requirement 1. Specifically:
- a. Calpine has developed updated corporate guidance for facility maintenance and testing associated with NERC Reliability Standard PRC-005-1 by:
    - Revising each facility specific process to include company-wide requirements that are standard and applicable to all facilities.
    - Ensuring a uniform process for facilities which aids in the audit process.
  - b. Calpine is reviewing site specific requirements for each of its facilities and will update its corporate procedure to contain the requirements for those facilities.
  - c. Calpine will move site-specific guidance on compliance requirements to appropriate section of its procedures to aid in audit process.
  - d. Calpine is establishing a consistent format for the corporate guidance section of each facility-specific PRC-005 procedure to aid in audits.
  - e. Calpine will revise its centralized maintenance management system (“CMMS” or “Maximo”) process, new or revised facility PM items and/or Job Plans as necessary, to incorporate changes required to meet updated requirements.

- f. Calpine is establishing a phase-in approach for the newer guidance at each plant facility, specifically:
- Changes in battery maintenance procedures to conform to a single set of guidelines based on IEEE Standard maintenance practices.
  - Changes in instrument transformer maintenance procedures based on updated guidance as referenced above.
- g. Calpine has committed to establish a list of DC Circuitry at each facility and test it in accordance with updated process research. In this process, Calpine has committed to:
- Enlist contractor support/educate contract personnel on desired outcome.
  - Gather all drawings and equipment lists for Contractor review.
  - Contractor review of site drawings/records in order to generate a list of DC Circuitry that is verified by functional testing.
  - Calpine Engineering and plant personnel review lists and verify equipment.
  - Incorporate lists of DC Circuitry into plant specific PRC-005 listings – establish next testing due date.
- h. Develop site procedures and processes for performance of functional testing at each plant, to include:
- Developing generic guidance for Calpine facilities for functional testing (Vendor and Calpine);
  - Modifying the generic process for use at each specific plant facility according to the plant's unique characteristics.
41. Calpine also committed to perform functional testing on the DC Circuitry at all of its facilities.
42. Actions implemented by Calpine in its Mitigation Plan, once completed, will help to prevent a recurrence of any similar violation for NERC Reliability Standard PRC-005-1, Requirement 2. Specifically:
- a. Calpine is establishing a consistent format for documenting maintenance records for covered equipment.
  - b. Calpine is working to populate its chosen format with plant data.
43. SERC has reviewed the preventative measures described in the Mitigation Plans and has determined that the same measures will assist Calpine in improving prospective compliance with the requirements of all of the Reliability Standards, including NERC Reliability Standards PRC-005-1 and IRO-004-1 and will ultimately enhance the reliability of the bulk power system within an appropriate time-frame.



44. To verify completion of the mitigation plan for NERC Reliability Standard IRO-004-1, SERC reviewed OATI tags for all eight plants, screen shots provided from the Independent Power Producer Schedule Request system, emails confirming outage scheduling coordination with appropriate entities, and plant availability screen shots from the Plant Declaration Application. SERC Staff also reviewed the Plant Declaration Application Process Attestation of Training on Plant Declaration Process and the Plant Declaration Application Process. SERC staff also spoke with the new director responsible for compliance with the NERC Reliability Standards within the company's compliance organization.
45. On July 24, 2009, Calpine certified completion of Mitigation Plan MIT-07-1365 for NERC Reliability Standard PRC-005-1. At the time of the signing of this agreement, SERC's verification of Calpine's completion of the Mitigation Plan is ongoing.
46. SERC Staff also considered the specific facts and circumstances of the violation and Calpine'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 [Calpine] to remedy the violation in a timely manner."<sup>5</sup> The factors considered by SERC Staff in the determination of the appropriate penalty for Calpine's alleged violations of NERC Reliability Standards PRC-005-1 and IRO-004-1 pursuant to this Settlement Agreement included the following:
  - a. Calpine has had no prior violation history for any reliability standards during the mandatory reliability period.
  - b. Calpine cooperated with SERC Staff during the investigation.<sup>6</sup> Calpine provided responses to all of SERC Staff's data requests, but initially was unable to provide the information requested to verify the scope of the violation. After several requests and clarification of the format in which SERC required the supporting data, Calpine was able to provide the information in the form as required by SERC. Calpine cooperated with SERC Staff during meetings between the parties to discuss these events.
  - c. Calpine agreed to resolve this issue via settlement and initiated various mitigation actions and preventative measures before receiving a Notice of Alleged Violation from SERC.

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<sup>5</sup> 16 U.S.C. § 824o(e)(6).

<sup>6</sup> Revised Policy Statement on Enforcement, 123 FERC ¶ 61,156, P 65 (May 15, 2008).

- d. Calpine has taken steps to strengthen its Compliance Program, in accordance with Commission guidance, as discussed in Paragraph 40, above.
  - e. As described above, Calpine has implemented a wide-range of measures to address the alleged violations, to protect against future violations of the same or similar requirements and to strengthen its internal compliance program, as set forth in Paragraphs 39 and 40.
47. SERC and Calpine agree that in addition to the actions taken in Calpine's Mitigation Plans, Calpine will take the following actions:
- a. Calpine will host a cross-regional workshop. Included in the workshop will be lessons learned related to NERC Reliability Standard PRC-005-1 and the potential for single point failure of generation Protection Systems and associated maintenance strategy; establishing a compliance program with attributes meeting the criteria set forth in FERC's policy statements on enforcement and compliance in an organization that spans multiple regions; and challenges of an entity operating in multiple regions.
  - b. Calpine recognizes that SERC considers its dedicated relay communication lines to be "Associated Communications Systems," and has clarified its compliance procedures and documentation for NERC Reliability Standard PRC-005-1 to make clear that this equipment is covered under its maintenance and testing plan.
48. Based on the above factors, as well as the mitigation actions and preventive measures taken, Calpine shall pay \$140,000 to SERC as set forth in this Settlement Agreement. Calpine 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 Calpine 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. If Calpine does not remit the payment by the required date, interest payable to SERC will begin to accrue pursuant to the Commission's regulations at 18 C.F.R. §35.19a(a)(2)(iii) from the date that payment is due, and shall be payable in addition to the payment.
49. 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, may subject Calpine to new or additional enforcement, penalty or sanction actions in accordance with the NERC Rules of Procedure. Calpine will retain all rights to defend against such enforcement actions in accordance with the NERC Rules of Procedure.

## **V. ADDITIONAL TERMS**

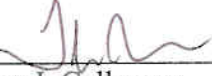
50. The signatories to the Settlement Agreement agree that they enter into the Settlement Agreement voluntarily and that, other than the recitations set forth herein, no tender, offer or promise of any kind by any member, employee, officer, director, agent or representative of SERC or Calpine has been 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.
51. 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 Calpine of changes to the settlement that would result in approval. If NERC rejects the settlement, NERC will provide a specific written reason for such rejection and SERC will attempt to negotiate a revised settlement agreement with Calpine including any changes to the settlement specified by NERC. If a settlement cannot be reached, the enforcement process shall continue to conclusion. If NERC approves the settlement, NERC will (i) report the approved settlement to the Commission for the Commission's review and approval by order or operation of law and (ii) publicly post this Settlement Agreement.
52. This Settlement Agreement shall become effective upon the Commission's approval of the Settlement Agreement by order or operation of law as submitted to it or as modified in a manner acceptable to the parties.
53. Calpine agrees that this Settlement Agreement, when approved by NERC and the Commission, shall represent a final settlement of all matters set forth herein and Calpine waives its right to further hearings and appeal, unless and only to the extent that Calpine 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 Calpine in accordance with the NERC Rules of Procedure in the event that Calpine fails to comply with the mitigation plan and compliance program agreed to in this Settlement Agreement. In the event Calpine 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 Calpine 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, Calpine shall retain all rights to defend against such enforcement actions, also according to the NERC Rules of Procedure.
54. 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.


55. 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.

56. The Settlement Agreement may be signed in counterparts.

57. 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

  
\_\_\_\_\_  
W. Thaddeus Miller  
Corporate Secretary and Chief Legal Officer  
**CALPINE CORPORATION**

  
\_\_\_\_\_  
Date 

**APPENDIX A  
TO  
SETTLEMENT AGREEMENT  
OF  
SERC RELIABILITY CORPORATION  
AND  
CALPINE CORPORATION**

- (1) Calpine's Mitigation Plan for PRC-005-1, R1 and R2**
- (2) Calpine's Certification of Mitigation Plan Completion for PRC-005-1, R1 and 2**
- (3) Statement of SERC Reliability Corporation Compliance Staff Regarding  
Completion of Calpine's Mitigation Plan for PRC-005-1, R1 and 2**
- (4) Calpine's Mitigation Plan for IRO-004-1, R4**
- (5) Calpine's Certification of Mitigation Plan Completion for IRO-004-1, R4**
- (6) Statement of SERC Reliability Corporation Compliance Staff Regarding  
Completion of Calpine's Mitigation Plan for IRO-004-1, R4**

# Appendix A-1



## Mitigation Plan Submittal Form

Date this Mitigation Plan is being submitted: 010809

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.

<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.

# Appendix A-1



- 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: Calpine Corporation  
Company Address: 717 Texas Avenue Suite 1000 Houston, TX 77002  
NERC Compliance Registry ID **[if known]**: NCR00006

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: Brent Hebert  
Title: Corporate Director, Nerc Compliance  
Email: bhebert@calpine.com  
Phone: (713) 570-4469



# Appendix A-1



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

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

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

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

NERC Violation ID # [if known]	SERC Violation ID # [if known ]	Requirement Violated (e.g. R3.2)	Violation Date <sup>(*)</sup>
SERCYYYYnnnnn	08-053	R1	06/13/2008
	08-052	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:

- Lack of fleet-wide technical guidance and oversight for the Protection System Maintenance and Testing at its Generator facilities.

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

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

The Mitigation Plan offers a re-designed corporate template for plant use and updates key reference material used in the company process. The new template

## Appendix A-1



includes specific guidance for protection system maintenance plan procedural steps and frequency of testing. This maintenance and testing guidance is based on published industry standard practices and reviewed by Calpine Engineering personnel prior to update/change. Site specific information, such as requirements for testing contained in facility Interconnect Agreements, is contained in separate sections from the Corporate guidance in order to maintain consistent structure to the guidance throughout the diverse region.  
[Provide your response here; additional detailed information may be provided as an attachment as necessary]

# Appendix A-1



## 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:

Please refer to attachment

[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: Please refer to attachment. Please note all actions associated with this Mitigation Plan should be complete no later than 07/31/2009.

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

Milestone Activity

Proposed Completion Date\*  
(shall not be more than 3 months apart)

please see attached document

(\* 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]

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## 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:

The efforts outlined in this Plan have already begun. Interim due dates, not specified in this submittal, occur well in advance of the mitigation plan milestones listed above. This early completion will allow for sufficient internal review prior to the milestone date.

[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:

#### Possible Impacts

- Loss of generation output:
  - The total loss of output from any of the facilities that remain to be tested is below the threshold for the Minimum Contingency Reserve Requirement as set forth in SERC Contingency Reserve Policy dated June 30, 2008.
    - **Low Risk**
      - No increased risk for the proposed functional testing timeline to June, 2009.
- Failure of relay system to isolate plant fault

# Appendix A-1



- Failure to isolate a fault at the plant level would initiate the next level of protection available, in general that being the protection afforded by the interconnecting utility on the utility side of the interconnect point.
  - **Low Risk**
    - Failure of both the plant and interconnecting utility protection systems to isolate a faulted piece of equipment highly unlikely.

## Mitigating Steps

- Accelerated Functional Test
  - The maintenance and testing of the relays at the facilities outlined in the Plan continues until June, 2009. The generating facilities may become available for functional testing on short notice prior to their scheduled outages based on other factors such as emergent maintenance requirements and market conditions. Should a plant, or a portion of the plant, become available Calpine will perform functional testing to the extent practical at that time. Testing will at all times be coordinated with the interconnecting utility to ensure their system can support such testing.
    - Define functional test schedule targeted for each plant that is consistent with interconnecting utility outage and maintenance schedule, system generation requirements and Calpine's commercial constraints and responsibilities.
      - Carville/Decatur/Morgan/Pine Bluff
        - Complete detailed walk-down of systems and develop the test process
          - Target date: 15 Feb 09
            - Carville in-progress week of 1/5
            - Decatur: sched week of 1/12
            - Morgan/PB: to follow
        - Complete full functional testing at all four facilities
          - Target date: 30 June 09
            - Plants chosen for test depending upon availability as noted above.

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[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:

Performance of the Mitigation Plan will enhance the internal process for record-keeping and thus make the relevant information more visible to all parties. The updated procedure, implemented at each SERC facility, provides clear and concise guidance for the performance of maintenance and testing in accordance with the Standard. The use of a "template" procedure that maintains identical formatting across the facilities in SERC will aid in the auditing process in the future.

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

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

The use of Procedures that maintain the same format, specifically the numbering and location of "all plants" and "plant specific" information, will be reviewed for use on all applicable Standards. Updates on these Procedures will be assessed during the normal document review cycle.

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

**Continued on Next Page**

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## 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 Corporate Director of NERC Compliance of Calpine Corporation.
  2. I am qualified to sign this Mitigation Plan on behalf of Calpine Corporation.
  3. I have read and understand Calpine 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. Calpine 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 

(Electronic signatures are acceptable; see CMEP)

Name (Print): Brent Hebert

Title: Corporate Director, NERC Compliance

Date: 01/08/2009

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## **Section G: Comments and Additional Information**

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

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

### **Submittal Instructions:**

Please convert the completed and signed document to 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)



# Appendix A-1

## Mitigation Plan Steps PRC-005

### Section D.1

#### PRC-005 R1:

Complete 8/31

1. Develop updated corporate guidance for facility maintenance and testing associated with the PRC-005. Specifically:
  - a. Revise each facility specific process to include company-wide requirements that are standard and applicable to all facilities.
  - b. Ensures uniform process for facilities which aids in audit process.
2. Review site specific requirements for each facility and update the applicable sections for those requirements.
  - a. Site data available – requires Corp. review and comment
3. Move site guidance to appropriate section to aid in audit process
  - a. Update reference documents for defining maintenance intervals for all equipment to most recent revisions (new references are already part of the revised PRC-005 document)
  - b. Incorporates recent NERC guidance which was not included in initial procedure revisions.
4. Establish consistent format for the corporate guidance section of each facility-specific PRC-005 procedure to aid in ease of audit.
  - i. Section numbering will be consistent which allows for quicker audit process.
5. Establish revised CMMS process, new or revised facility PM items and/or Job Plans as necessary, to incorporate changes required to meet updated requirements.
6. New revision of site specific document reviewed and authorized for use at each facility.
7. Establish a phase-in approach for the newer guidance at each facility, specifically:
  - i. Changes in Battery maintenance procedures to conform to a single set of guidelines based on IEEE Standard maintenance practices.
  - ii. Changes in Instrument Transformer maintenance procedures based on updated guidance as referenced above.
  - iii. Commence testing in accordance with updated process
8. Research and establish list of DC Circuitry for each facility
  - a. Enlist contractor support/educate contract personnel on desired outcome
  - b. Gather all drawings and equipment lists for Contractor review.
  - c. Contractor review site drawings/records – generate list of DC Circuitry that is verified by functional testing
    - i. Broad River
    - ii. Carville
    - iii. Columbia
    - iv. Decatur
    - v. Hog Bayou
    - vi. Morgan
    - vii. Pine Bluff
    - viii. Santa Rosa
  - d. Calpine Engineering and plant personnel review lists and verify equipment.
    - i. Broad River
    - ii. Carville

Complete 8/31

Complete 8/31

# Appendix A-1

## Mitigation Plan Steps PRC-005

- iii. Columbia
  - iv. Decatur
  - v. Hog Bayou
  - vi. Morgan
  - vii. Pine Bluff
  - viii. Santa Rosa
- e. Incorporate lists of DC Circuitry into plant specific PRC-005 listings – establish next testing due date
- i. Broad River
  - ii. Carville
  - iii. Columbia
  - iv. Decatur
  - v. Hog Bayou
  - vi. Morgan
  - vii. Pine Bluff
  - viii. Santa Rosa
9. Develop site procedure/process for performance of functional testing
- a. Develop generic guidance for Calpine facilities for functional testing (Vendor and Calpine)
  - b. Plant modify generic process for use at specific facility
    1. Broad River
    2. Carville
    3. Columbia
    4. Decatur
    5. Hog Bayou
    6. Morgan
    7. Pine Bluff
    8. Santa Rosa
10. Functional testing complete at all facilities
- a. NOTE: For facilities that perform testing prior to the completion of Steps 8 and 9 the test data will be reviewed for consistency with the new list of circuitry and new test method. Any discrepancies will be reviewed and follow-up action identified as required.

## PRC-005 R2:

Complete 8/31

1. Establish consistent format for documenting maintenance records for covered equipment.
2. Populate chosen format with plant data
3. Update plant data periodically as required for submittal to Region as requested.

Complete 8/31

# Appendix A-1

Mitigation Plan Steps PRC-005

Section D.2 and Section D.3

## Timetable and Milestones:

Milestone Activity	Proposed Completion Date: (shall not be more than 3 months apart)
Section D.1 PRC-005 R1 Steps 1,3,4 Revised facility process in place (Corp. guidance, procedure format and layout)	Complete: 8/31/08
Section D.1 PRC-005 R2 Step 1 and Step 3 documentation of format and dates	Complete: 8/31/08
Section D.1 PRC-005 R1 Step 2 and Step 6 Site specific requirements review per (Corp. review site procedures)	11/30/08
Section D.1 PRC-005 R1 Step 5: New/Revised PM's and Job Plans that include DC Circuitry checks.	12/31/08
Section D.1 PRC-005 R1 Step 7 <ul style="list-style-type: none"> <li>▪ Battery Maintenance</li> <li>▪ Instrument Xfmr's <ul style="list-style-type: none"> <li>○ Requirements identified-testing planned for next available outage period</li> </ul> </li> </ul>	11/30/08 (tests being performed iaw new plans) 7/31/09 (tests being performed/planned iaw new requirements)
Section D.1 PRC-005 R1 Step 8 a-c (DC Circuitry list generated for review)	<ul style="list-style-type: none"> <li>▪ 2 plants: 11/15/08</li> <li>▪ 4 plants: 11/30/08</li> <li>▪ 6 plants: 12/15/08</li> <li>▪ 8 plants: 12/31/08</li> </ul>
Section D.1 PRC-005 R1 Step 8 (d) Calpine Eng and plant personnel review and approve lists	<ul style="list-style-type: none"> <li>▪ 2 plants: 11/30/08</li> <li>▪ 4 plants: 12/15/08</li> <li>▪ 6 plants: 12/31/08</li> <li>▪ 8 plants: 1/15/09</li> </ul>
Section D.1 PRC-005 R1 Step 8 (e) Sites incorporate procedural changes to include DC circuitry in process	<ul style="list-style-type: none"> <li>▪ All plants complete: 1/31/09</li> </ul>
Section D.1 PRC-005 R1 Step 9 (a) Develop and implement "generic" procedure guidance for functional testing	<ul style="list-style-type: none"> <li>▪ 2/28/09</li> </ul>
Section D.1 PRC-005 R1 Step 9 (b) Site specific functional test document complete	<ul style="list-style-type: none"> <li>▪ 3/31/09</li> </ul>
Section D.1 PRC-005 R2 Step 10 Functional testing complete at each facility	<ul style="list-style-type: none"> <li>▪ Broad River: Complete as of May 2008</li> <li>▪ Carville: May 2009</li> <li>▪ Columbia: Complete as of May/June 2008</li> <li>▪ Decatur: May 2009</li> <li>▪ Hog Bayou: complete April 2008</li> <li>▪ Morgan: June 2009</li> <li>▪ Pine Bluff: May 2009</li> <li>▪ Santa Rosa: complete Nov 2007 with exception of one relay (bus differential) which was completed Sept 2008.</li> </ul>
PRC-005 R2: Completion of all maintenance testing	<ul style="list-style-type: none"> <li>▪ July 31, 2009</li> </ul>



# Appendix A-2

## CALPINE CORPORATION

DUNCAN BROWN  
VICE PRESIDENT - NERC COMPLIANCE  
717 TEXAS AVENUE  
SUITE 1000  
HOUSTON, TEXAS 77002  
925-557-2251  
925-479-9175 (F)

### Certification of a Completed Mitigation Plan

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

Name of Registered Entity submitting certification : Calpine Corporation

Date of Certification: 07/24/09

Name of Standard and the Requirement(s) of mitigated violation(s): PRC-005-1: Transmission and Generation Protection System Maintenance and Testing R1 and R2

SERC Tracking Number (contact SERC if not known):

NERC Violation 10 Number (if assigned): 08-052 and 08-053

**Date of completion of the Mitigation Plan:** 07/24/09

Summary of all actions described in Part 0 of the relevant mitigation plan:

All Calpine SERC facilities implemented the Calpine Standard PRC-005 Procedure which provides guidance that meets the requirements of PRC-005 R1. Facilities at which additional testing was required in order to meet the new Standard requirements completed the testing in accordance with the established timelines. DC Functional Test plans were developed, reviewed with counterparties, and executed during the next available maintenance window at target facilities. CT/PT inspection criteria outlined in the new Procedure was used to evaluate equipment as necessary. Updated Battery maintenance was performed or scheduled as required to meet the requirements of the Standard.

Description of the information provided to SERC for their evaluation:

As discussed with SERC personnel the supporting evidence of completion will be supplied within 30 days of the closure. Information will include:

- Document indicating Section/Page and Procedure Step that satisfies each portion of the PRC-005 R1 Standard.
- Facility specific PRC-005 Procedure for each of the eight (8) generating facilities
- Spreadsheet with each facilities equipment list; date of last test, and next scheduled test date clearly marked.
- Evidence folder for each facility, segregated by equipment type, containing the files and information supporting the test dates specified in the spreadsheet.

*Note the closure form is signed by the Calpine Corporation NERC VP; the previous Mitigation Plan was submitted prior to this position being created.*

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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 information is complete and correct to the best of my knowledge.

Name: Duncan Brown

Title: Vice President, NERC

Entity: Calpine Corporation

Email: [dbrown@calpine.com](mailto:dbrown@calpine.com)

Phone: (925) 557-2251

Designated Signature



Date July 23, 2009

## Appendix A-3

### **Statement of SERC Reliability Corporation Compliance Staff Regarding Completion of Calpine's Mitigation Plan for PRC-005-1, R1 and 2**

To be appended upon completion of SERC Staff's review of evidence supporting completion of the Mitigation Plan.

## Mitigation Plan Submittal Form

Date this Mitigation Plan is being submitted: July 25, 2008

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.

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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.

## Appendix A-4

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

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

B.1 Identify your organization:

Company Name: Calpine Corporation  
Company Address: 717 Texas Ave. Suite 1000, Houston Texas, 77002  
NERC Compliance Registry ID *[if known]*:

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: Brent Hebert  
Title: Director, Government & Regulatory Affairs, NERC Compliance  
Email: brent.hebert@calpine.com  
Phone: 713-570-4469



# Appendix A-4

## 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: IRO-004-1  
*[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	08-059	R.4	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:

The draft Audit Report prepared by SERC stated the following: "Calpine was unable to provide day-ahead schedules, OATI tags or other evidence for the requested weeks of July 4, 2007 or the first week of November 2007". Although Calpine had the requested information, it had technical difficulty with retrieval of the information from it's systems in order to present the level of information required by SERC on the days of the audit. This information has now been provided and this mitigation plan specifically provides the ways in which Calpine is acting to make such information available and retrievable at all times.

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

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Calpine provided OATI E-tags as evidence of compliance with Standards INT - 001-2 and VAR – 001. This information is currently in the possession of Andrea Koch.

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

# Appendix A-4

## 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:

Calpine has developed a web-based application, Plant Declaration (aka Plant Dec), which enables a systematic, consistent exchange of data. Functionality includes an email feature to allow users to send the MW data (in excel format) via email to specified recipient(s) in the RC area for system studies. Please see attached project Requirements Document. Each plants summary email will be contained in the 'Generation Desk East' mailbox for NERC auditing purposes. This mailbox will contained all historic summary reports emailed, including date/time and content. The OATIE-tag programs has an archive feature. This feature will be used in future audits for retrieving historical OATIE-Tags. Please see attachment OATI.doc and 2006tag.doc tag evidence. This program will ensure that such information is immediately available and retrievable.

[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:  
.Project completion date is 10/24/2008
- 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)
Hire a Director, CCO Compliance. The	10/01/2008

## Appendix A-4

<p>director will report to the Corporate Director, Government &amp; Regulatory Affairs and will oversee compliance activities within CCO. The Director, CCO Compliance will establish an effective, efficient, and controlled environment which ensures compliance with all applicable standards and requirement.</p>	
<p>Revise current processes and procedures which will align with the use of the Plant Dec. Portal Application. Procedures will include outage reporting requirements, forms and contacts for each applicable TOP as established by each TOP</p>	<p>10/01/2008</p>
<p>Test and implement the Plant Dec. Portal for use of plant data exchange, both internal to Calpine and external. All external email will be contained in the East Generation mail box for auditing purposes.</p>	<p>10/10/2008</p>
<p>Conduct training for all East Real-Time and Day-Ahead personnel on revised procedures, purpose and use of the Plant Dec. Portal, and requirements. Training will be in the form of hand on for each 24 hour shift</p>	<p>10/24/2008</p>

(\*) 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]

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### **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:

Please see attachment Requirements\_Plant-Dec-East

Please see attachment OATI.doc.

Please see attachment CCOjob.doc.

[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:

To the best of Calpine's knowledge, during the pendency of the mitigation plan, the reliability of the Bulk Power System will not be at a higher risk or be otherwise negatively impacted. At the time of the audit as well as now, Calpine Energy Services must reserve transmission via the OASIS system and create OATI E-tags for the host BA and TOP to approve. Approval of the OATI E-tag schedule must take place by the host BA and TOP before any transaction from a SERC facility is implemented. Calpine believes the risk to the the Bulk Power System was negligible, if any, prior to or at the time of the audit.

As proven by the additional evidence provide to SERC (post audit), Calpine was performing the functions or processes to meet the

## Appendix A-4

requirements of this standard and will continue to meet the requirements during and after the completion of the mitigation plan. The mitigation plan outlined is to ensure that during future audits or requests for information Calpine Energy Services can produce the data in a timely fashion. The Plant Declaration Portal application will ensure a systematic and consistent approach to Calpine's internal and external data exchange and reporting.

[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:

Performance of the Mitigation Plan will enhance the internal process for record-keeping and thus make the relevant information more visible and accessible to all parties along with ensuring a systematic and consistent approach to data exchange and reporting.

[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:

Interviewing potential candidates for Director, CCO compliance. This person will reside on the Dispatch Floor and is charged with monitoring and ensuring compliance as the GOP/PSE subject matter expert. The Director, CCO compliance will assist in all compliance efforts including audit support.

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

[Continued on Next Page](#)

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### **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 Corporate Director, Government & Regulatory Affairs - NERC Compliance of Calpine Corporation.
  2. I am qualified to sign this Mitigation Plan on behalf of Calpine Corporation.
  3. I have read and understand Calpine Corporation's obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4(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. Calpine 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**

**Brent Hebert**

(Electronic signatures are acceptable; see CMEP)

Name (Print): J. Brent Hebert

Title: Corporate Director, Government & Regulatory Affairs, NERC Compliance

Date: July 25, 2008



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### **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.

We submitted information to substantiate compliance with these standards but believe we should mitigate to insure that we have sufficient proof of compliance for future audits.

[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)



**Certification of a Completed Mitigation Plan**

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

Name of Registered Entity submitting certification: [Calpine Corporation](#)

Date of Certification: [10/30/2008](#)

Name of Standard and the Requirement(s) of mitigated violation(s): [IRO-004-1/R4](#)

SERC Tracking Number (contact SERC if not known): 08-059

NERC Violation ID Number (if assigned):

**Date of completion of the Mitigation Plan:** 10/24/08

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

Description of the information provided to SERC for their evaluation:

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

Name: [J. Brent Hebert](#)

Title: [Corporate Director, Government & Regulatory Affairs and NERC Compliance](#)

Entity: [Calpine Energy Services](#)

Email: [Brent.hebert@calpine.com](mailto:Brent.hebert@calpine.com)

Phone: 713-570-4469

DesignatedSignature    Date 10/24/08

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

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



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

Registered Entity:	Calpine Corporation
SERC Tracking ID:	08-059
NERC Violation No:	SERC200800142
NERC Mitigation Plan ID:	MIT-07-1068
Standard:	IR0-004-1
Requirement(s):	4

**Violation Summary:**

Calpine Corporation was found in violation of IRO-004-1, R4 for its failure, at its duly-noticed scheduled compliance audit, to produce evidence to show that it was providing its Reliability Coordinator information required for system studies.

**Mitigation Plan Summary:**

Calpine Corporation's Mitigation Plan to address the referenced violation was originally submitted on July 25, 2008 and revised on August 13, 2008 to provide additional details of and clarification for the included milestones. The Mitigation Plan was accepted by SERC on October 2, 2008 and approved by NERC on October 20, 2008. The Mitigation Plan is identified as MIT-07-1068 and was submitted as non-public information to FERC on October 20, 2008 in accordance with FERC orders.

The mitigation plan covers actions to prevent recurrence and improve Calpine Corporation's ability to provide documentation upon request by the Region. Calpine Corporation will revise current processes and procedures which will align with the use of Calpine Corporation's "Plant Declaration Portal Application." Procedures will include outage reporting requirements, forms and contacts for each applicable TOP as established by each TOP. Calpine Corporation will test and implement the Plant Declaration Portal for use of plant data exchange, both internal to Calpine Corporation and external. All Calpine Corporation external emails will be contained in a specified mail box for auditing purposes. Calpine Corporation will conduct training for all Real-Time and Day-Ahead personnel on revised procedures, purpose and use of the Plant Declaration Portal, and requirements.

**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:**

Calpine Corporation certified on October 24, 2008 that the subject Mitigation Plan was completed on October 24, 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:**

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

OATI tags for all eight plants covering multiple days and months to verify unique tag, date and time of creation, status, start and stop time of exchange, transmission system that transaction is taking place

Independent Power Producer Schedule confirming notification status date and time for information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions.

Business card of and spoke with the new director responsible for compliance with the NERC Reliability Standards within the company's compliance organization

Emails confirming outage scheduling coordination with appropriate entities

Requirements\_Plant-Dec-East.doc – This is a requirements document for the Plant Declaration Application that Calpine Corporation implemented to help prevent recurrence. The application allows Calpine Corporation declare” or formally communicate plant generation capabilities, thermal performance, and equipment availability to the trading and dispatch personnel. The tool also gives the Trading Desk the ability to email Balancing Authorities and Transmission Service Providers individual plant's capabilities. This function also has historical record keeping ability. The tool also copies each plants emails to the “Generation Desk East” mailbox for historical purposes and easy retrieval.

Plant Declaration---Commercial Operations Process document and attestation to training on Plant Declaration Process for appropriate personnel



**Conclusion:**

On December 22, 2008 SERC Reliability Corporation Compliance Staff ("SERC Staff") completed its review of the evidence submitted by Calpine Corporation 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 Calpine Corporation is in compliance with the subject Reliability Standard Requirements.

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

**Respectfully Submitted,**

Andrea Koch, Compliance Engineer  
Steve Gibe, Senior Compliance Auditor

**Attachment e**

**SERC's Verification of Completion of Mitigation  
Plan MIT-07-1365 (PRC-005-1 R1 and R2), dated  
January 18, 2010**

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

Registered Entity: Calpine Corporation  
SERC Tracking ID: 08-052 and 08-053  
NERC Violation No: SERC200800137 and SERC200800138  
NERC Mitigation Plan ID: MIT-07-1365  
Standard: PRC-005-1  
Requirement(s): 1 and 2

**Violation Summary:**

Calpine Corporation was found in violation of PRC-005-1, R1 for its failure to provide evidence, at its duly-noticed scheduled compliance audit completed on June 11, 2008, that its Protection System program includes all of the Protection System components, intervals for maintenance and testing, the bases for maintenance and testing intervals, and a summary of maintenance and testing procedures for 8 facilities in the SERC region.

Calpine Corporation was found in violation of PRC-005-1, R2 for its failure to provide adequate evidence, at its duly-noticed scheduled compliance audit completed on June 11, 2008, that Protection System devices were maintained and tested within the defined intervals for 32% of its Protection System devices (batteries, CT/PT, DC Control circuitry, and relay devices) for 4 of the 8 facilities in the SERC region.

**Mitigation Plan Summary:**

Calpine Corporation's Mitigation Plan to address the referenced violation was originally submitted on July 25, 2008. It was revised to provide additional information regarding the impact to the Bulk Power System and re-submitted on January 8, 2009 and was accepted by SERC on January 15, 2009 and approved by NERC on February 17, 2009. The Mitigation Plan is identified as MIT-07-1365 and was submitted as non-public information to FERC on February 24, 2009 in accordance with FERC orders.

Pursuant to Section D.1 of the approved Mitigation Plan, Calpine Corporation has completed the following actions to correct the violation of PRC-005-1 Requirements 1 and 2.

- Calpine Corporation's updated procedure, implemented at each of the eight facilities in the SERC footprint, provides clear and concise guidance for the performance of maintenance and testing associated with NERC Reliability Standard PRC-005. The use of a "template" procedure that maintains identical formatting across the facilities will aid in the auditing process in the future.

- Reviewed site specific requirements for each of its facilities and updated its corporate procedure to contain the requirements for those facilities.
- Changed battery maintenance procedures to conform to a single set of guidelines based on IEEE Standard maintenance practices.
- Changed instrument transformer maintenance procedures based on updated guidance as referenced above.
- Performed functional testing on the DC Circuitry at all of its facilities and completed any Protection System Maintenance that was past due.

In addition to the actions to restore compliance set forth in Section D.1 of the Mitigation Plan, Calpine has implemented the preventative measures set forth in Section E.1 of the Mitigation Plan and summarized below, along with completion dates, to help prevent a recurrence of a similar violation:

- Calpine revised its centralized maintenance management system (“CMMS” or “Maximo”) process, new or revised facility PM items and/or Job Plans as necessary, to incorporate changes required to meet updated requirements December 31, 2008.
- Calpine established a consistent format for documenting maintenance records for covered equipment completed on August 31, 2008.
- Calpine populated its chosen format with plant data July 31, 2009.

#### **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:**

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

#### **Evidence Reviewed:**



Calpine Corporation submitted and SERC Staff reviewed the following evidence, consisting of more than 500 documents including one lines, test reports, and updated procedures for all eight plants, in support of its certification that its Mitigation Plan was completed in accordance with its terms:

- Plant Procedures for PRC-005 R1 for all eight plants, revised after the compliance audit, demonstrating maintenance and testing intervals and their basis and summary of maintenance and testing procedures:
  - BR-PRC-005 R1.pdf for Broad River signed on 10-24-09
  - Columbia PRC-005-1 Rev 3.pdf signed on 9-12-09
  - CV-PRC-005-1-082708.pdf for Carville signed on 8-27-09
  - Decatur\_PRC-005\_082908.pdf signed on 9-29-08
  - HB-PRC-005\_8-08.pdf signed on 8-25-09
  - Morgan\_PRC-005\_111108[1].pdf signed on 11-11-08
  - Pine\_Bluff\_PRC-005\_rev7\_7\_08[1].pdf signed on 7/7/08
  - SREC-PRC-005-1[1].pdf for Santa Rosa signed on 8-31-08
- Calpine\_062409\_RSCEW PRC-005-1.doc - document containing the document name, page number, and section number for evidence with respect to NERC Reliability Standard PRC-005 R1
- Calpine SERC\_Regional Plant PRC005 tracking\_ALL FACILITIES\_82109.xls – spreadsheet listing all eight plants, protection system components, intervals, and last tested/maintained date
- Work orders that specified start and stop dates for maintenance as well as a description and status of task; inspection reports/ test reports that included definition of test, test equipment, test procedures, annual maintenance procedures, test results, problem area/ corrective action performed, graphs, and test data; and daily inspection logs for battery monthly, quarterly, and annual testing and inspection forms for all eight plants
- Spreadsheets listing CT/PT's, intervals, date last tested and date of next scheduled test dates, work orders, specifying start and stop dates for maintenance as well as a description and status of work tasks to confirm CT/PT inspections for all eight plants
- Documents to confirm relay testing for all eight plants including multiple relay test results reports for line protection, field test reports containing maintenance and testing of plant relays and calibration of transducers associated with steam and combustion turbine generators, as well as investigating nuisance trips from steam turbine overall differential relays, acceptance test results and reports on turbine generator “(78)” relay, and overcurrent relay test results

- Documents to confirm DC functional testing for all eight plants including marked up drawings of Switchyards and, relay schemes, test procedures, and certification of testing and calibrating relays with in-service settings.

**Conclusion:**

On October 28, 2009 SERC Reliability Corporation Compliance Staff (“SERC Staff”) completed its review of the evidence submitted by Calpine Corporation in support of its Certification of Completion of the subject Mitigation Plan for PRC-005-1 Requirement 1. On January 18, 2010, SERC Staff completed its review of the evidence submitted by Calpine Corporation in support of its Certification of Completion of the subject Mitigation Plan for PRC-005-1 Requirement 2. 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 Calpine Corporation is in compliance with the subject Reliability Standard Requirements as of the certified date of completion of the Mitigation Plan, July 24, 2009.

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  
Kevin Berent, Compliance Auditor

**Attachment f**

**Notice of Filing**

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Calpine Corporation      Docket

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

NOTICE OF FILING  
February 1, 2010

Take notice that on February 1, 2010, the North American Electric Reliability Corporation (NERC) filed a Notice of Penalty regarding Calpine Corporation 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