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**Compliance Audit Report**  
**Central Maine Power Company**

**October 2, 2007**

**Public Version**

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# Executive Summary

The offsite compliance audit of Central Maine Power Company (CMP) was conducted on September 10, 2007.

The auditor evaluated CMP compliance with 14 reliability standards identified in the NERC 2007 Implementation Plan for the period of the last 12 months or for the monitoring timeframe specified in the reliability standard. The auditor used data provided by the CMP team to determine compliance with standards.

Of the 14 reliability standards audited, three were judged to be not applicable, with the remaining 11 standards found to be compliant. These results are expanded on in the Audit Results Findings.

In general, the documentation provided was very complete and clearly presented, and demonstrated a strong focus on compliance.

## Audit Process

The compliance audit process steps are detailed in the NERC CMEP. The NERC CMEP generally conforms to the United States Government Accountability Office Government Auditing Standards and other generally accepted audit practices.

## Objectives

All registered entities are subject to audit for compliance with all reliability standards applicable to the functions for which the registered entity is registered. The audit objectives are:

- Independently review CMP compliance with the requirements of the reliability standards that are applicable to CMP based on the CMP registered functions. CMP is registered with NERC as the following functional entities:
  - Transmission Operator (TOP),
  - Transmission Owner (TO),
  - Transmission Service Provider (TSP),
  - Transmission Planner (TPL), and
  - Distribution Provider (DP).
- Validate compliance with applicable reliability standards from the NERC 2007 Implementation Plan list of actively monitored standards.

## Scope

The off-site compliance audit was performed by a single auditor. Confidentiality agreements executed by the independent contractors and code of conduct documentation for the NERC representative and regional entity staff were provided to the audited entity in advance of the audit. CMP was given an opportunity to object to an audit team member on the basis of a possible conflict of interest or the existence of other circumstances that could interfere with the audit team member's impartial performance of duties. CMP accepted the audit team member participants with no objections.

The auditor used data provided by CMP as evidence of compliance. Compliance audits of CMP are scheduled on a periodic basis of three-year intervals. The reliability standards reviewed in the CMP audit included all of the standards applicable to the Transmission Owner (TO) and Transmission Service Provider (TSP) functional entities in the NERC 2007 Implementation Plan.

For the 2007 program, reliability standards are monitored based on the retention periods and monitoring timeframes specified in each reliability standard. The list of reliability standards along with their corresponding monitoring timeframe are listed in Appendix 1.

## ***Methodology***

The auditor received the data submitted, reviewed its contents and when necessary, made further follow-up inquiries to clarify or expand upon the information provided. The findings were then used to produce a draft audit report provided to CMP for comment.

## ***Audit Considerations***

No audit process or procedure can define every possible aspect, situation or scenario encountered by auditors when conducting a compliance audit. Auditors are expected to use their best professional judgments. The following paragraphs describe considerations when conducting bulk electric system reliability compliance audits.

Compliance audits of the bulk electric system reliability are based on newly defined mandatory reliability standards. Implementation of the reliability standards involves some risk for compliance audits due to the inherent learning curve of registered entities. This risk is mitigated by educating registered entities via regional compliance seminars, providing reliability standard information on the regional and NERC websites, encouraging industry involvement in the standards development process and by training compliance auditors.

The bulk electric system contains many variables which require skilled personnel to plan and operate in a reliable manner. Many requirements in the NERC reliability standards specify or are dependent on reliability studies depicting both the planning and operational time horizons. It is difficult to audit the validity of the multitude of studies that are performed to ensure registered entities meet these requirements. The audit difficulty is comprised of time constraints of the audit team, number of variables in the studies, and the auditor's lack of detailed knowledge of the registered entity's system. For example, it would take an auditor a period of weeks to validate the studies referred to in the TPL-001-0 through TPL-004-0 reliability standards. To mitigate this risk, the audit team must make professional judgments in its assessment of compliance based on 1) the interview with the registered entity's subject matter experts, 2) documented reports and policies, 3) tools/programs used to perform the studies, 4) results of the studies.

## ***Company Profile***

Central Maine Power Company (CMP) serves more than 590,000 customers in an 11,000 square-mile service territory in southern and central Maine. CMP has 475 miles of 345 kV transmission lines and 1,114 miles of 115 kV transmission lines. These lines feed 7-345 kV substations and 64-115 kV substations. The historical peak load for CMP is 1,682 MW. In addition, CMP operates the Local Control Center (LCC) for the State of Maine under the auspices of ISO New England.

## ***Audit Specifics***

The compliance audit was conducted on September 10, 2007 using files provided, followed up with telephone and e-mail queries to clarify any outstanding issues.

## Audit Team

<b>Audit Team Role</b>	<b>Name</b>	<b>Title</b>	<b>Company</b>
Lead	Garth Arnott	Contracted Consultant	NPCC-Compliance Audit Program
Manager	Sal Buffamante	Audit Manager	NPCC-Compliance Audit Program

## CMP Audit Participants

<b>Name</b>	<b>Title</b>	<b>CMP Organization</b>
Brian Conroy	Manager, Dispatch & ECC	Technical Services
Terry Vogel	Supervisor, Dispatch & ECC	Technical Services

## Audit Results

The auditor documented the evidence reviewed for compliance with each applicable reliability standard. When necessary, the auditor would ask the CMP to provide additional detail or clarification.

The auditor evaluated CMP compliance with 14 reliability standards identified in the NERC 2007 Implementation Plan for the period of the last twelve months or for the monitoring timeframe specified in the reliability standard. The auditor used data provided by the CMP team to determine compliance with standards.

Of the 14 reliability standards audited, three were judged to be not applicable, with the remaining 11 standards found to be compliant.

In general, the documentation provided was very complete and clearly presented, and demonstrated a strong focus on compliance.

## *Findings*

The following table details the summarized auditor notes relating to evidence reviewed for compliance with the reliability standards.

<b>Reliability Standard</b>	<b>Auditor Notes</b>	<b>Finding</b>
FAC-003-1	CMP provided documentation to support compliance with the standard	Compliant
FAC-008-1	CMP provided documentation to support compliance with the standard	Compliant
FAC-009-1	CMP provided documentation to support compliance with the standard	Compliant
IRO-001-1	Since CMP is not a reliability coordinator, only R8 in this standard applies. CMP provided evidence to show compliance with this standard.	Compliant
IRO-004-1	Since CMP is not a reliability coordinator, only R3, R4 and R7 apply. All the CMP documentation provided indicated their compliance to the applicable requirements in this standard.	Compliant
PRC-004-1	CMP is fully compliant with R1 and R3, R2 is N/A	Compliant
PRC-005-1	CMP provided documentation to support compliance with the standard	Compliant
PRC-008-0	CMP provided documentation to support compliance with the standard	Compliant
PRC-010-0	CMP does not have UVLS on its system.	NA
PRC-011-0	Not applicable to CMP	NA
PRC-016-0	CMP is fully compliant with R1, R2 and R3 are N/A	Compliant
PRC-017-0	CMP provided documentation to support compliance with the standard	Compliant
PRC-021-1	Not applicable to CMP	NA
VAR-001-1	CMP is fully compliant with R5 all other requirements are N/A	Compliant

### **Conclusions**

Of the 14 reliability standards audited 3 were judged to be not applicable, all the remaining 11 standards were found to be compliant.

### **Summary of CMP Response to the Audit Findings**

CMP's comments were resolved prior to finalizing the audit report.

## Appendix I – Applicable Reliability Standards

Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to CMP?
BAL-001-0	All	<b>Real Power Balancing Control Performance</b>	BA	To maintain Interconnection steady-state frequency within defined limits by balancing real power demand and supply in real-time.	The data that supports the calculation of CPS1 and CPS2 (Attachment 1-BAL-001-0) are to be retained in electronic form for at least a one-year period. If the CPS1 and CPS2 data for a Balancing Authority Area are undergoing a review to address a question that has been raised regarding the data, the data are to be saved beyond the normal retention period until the question is formally resolved. Each Balancing Authority shall retain for a rolling 12-month period the values of: one-minute average ACE (ACEi), one-minute average Frequency Error, and, if using variable bias, one-minute average Frequency Bias.	No
BAL-002-0	All	<b>Disturbance Control Performance</b>	BA, RSG, RRO	To ensure the Balancing Authority is able to utilize its Contingency Reserve to balance resources and demand and return Interconnection frequency within defined limits.	Compliance for DCS will be evaluated for each reporting period. Reset is one calendar quarter without a violation.  The data that support the calculation of DCS are to be retained in electronic form for at least a one-year period.	No
BAL-003-0	All	<b>Frequency Response and Bias</b>	BA	This standard provides a consistent method for calculating the Frequency Bias component of ACE.	Yearly or by request.	No

<b>Std #</b>	<b>Requirements</b>	<b>Standard</b>	<b>Who</b>	<b>Purpose</b>	<b>Monitoring Timeframe</b>	<b>Applicable to CMP?</b>
CIP-001-1	All	<b>Sabotage Reporting</b>	RC, BA, TOP, GOP, LSE	Disturbances or unusual occurrences, suspected or determined to be caused by sabotage, shall be reported to the appropriate systems, governmental agencies, and regulatory bodies.	By request and any events in the last year.	No
CIP-002-1 through CIP-009-1	All	<b>Critical Infrastructure Protection Standards</b>	BA, GO, GOP, IA, LSE, NERC, RC, RRO, TO, TOP, TSP	Cyber Security Standards- Follow revised Implementation Plan for Cyber Security Standards CIP-002-1 through CIP-009-1	By request.	No
COM-001-1	R2 and R5	<b>Telecommunications</b>	TO, BA, RC, NERCNet User Organizations.	Each Reliability Coordinator, Transmission Operator and Balancing Authority needs adequate and reliable telecommunications facilities internally and with others for the exchange of Interconnection and operating information necessary to maintain reliability.	By request.	No
EOP-001-0	All	<b>Emergency Operations Planning</b>	BA, TOP	Each Transmission Operator and Balancing Authority needs to develop, maintain, and implement a set of plans to mitigate operating emergencies. These plans need to be coordinated with other Transmission Operators and Balancing Authorities, and the Reliability Coordinator.	By request.	No

<b>Std #</b>	<b>Requirements</b>	<b>Standard</b>	<b>Who</b>	<b>Purpose</b>	<b>Monitoring Timeframe</b>	<b>Applicable to CMP?</b>
EOP-003-1	All	<b>Load Shedding Plans</b>	BA, TOP	A Balancing Authority and Transmission Operator operating with insufficient generation or transmission capacity must have the capability and authority to shed load rather than risk an uncontrolled failure of the Interconnection.	R1, R5, R6 - Event Driven. Has an event occurred in the past year? R2, R3, R4, R7, R8 – By request	No
EOP-005-1	All	<b>System Restoration Plans</b>	BA, TOP	To ensure plans, procedures, and resources are available to restore the electric system to a normal condition in the event of a partial or total shut down of the system	By request. Note: entity must follow the timelines specified in the standard: show that the plan is reviewed annually; simulation or testing must be done every 5 years.	No
EOP-006-1	All	<b>Reliability Coordination – System Restoration</b>	RC	The Reliability Coordinator must have a coordinating role in system restoration to ensure reliability is maintained during restoration and priority is placed on restoring the Interconnection.	By request.	No
EOP-008-0	All	<b>Plans for Loss of Control Center Functionality</b>	BA, RC, TOP	Each reliability entity must have a plan to continue reliability operations in the event its control center becomes inoperable.	By request.	No
EOP-009-0	All	<b>Documentation of Blackstart Generating Unit Test Results</b>	GO, GOP	To ensure that the quantity and location of system blackstart generators are sufficient and that they can perform their expected functions.	By request. Note entity must meet testing frequency specified in EOP-007-0.	No

<b>Std #</b>	<b>Requirements</b>	<b>Standard</b>	<b>Who</b>	<b>Purpose</b>	<b>Monitoring Timeframe</b>	<b>Applicable to CMP?</b>
FAC-003-1	All	<b>Vegetation Management</b>	RRO, TO	To improve the reliability of the electric transmission systems by preventing outages from vegetation located on transmission rights-of-way (ROW) and minimizing outages from vegetation located adjacent to ROW, maintaining clearances between transmission lines.	By request – program documentation and last 4 quarterly outage reports.	Yes
FAC-008-1	All	<b>Facility Ratings Methodology</b>	GO, TO	To ensure that Facility Ratings used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on an established methodology.	By request the current methodology and any superseded portions of the methodology within the past 12 months.	Yes
FAC-009-1	All	<b>Establish and Communicate Facility Ratings</b>	GO, TO	To ensure that Facility Ratings used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on an established methodology or methodologies.	By request.	Yes

Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to CMP?
IRO-001-1	All	<b>Reliability Coordination – Responsibilities and Authorities</b>	BA, GOP, LSE, PSE, RC, RRO, TOP, TSP	Reliability Coordinators must have the authority, plans, and agreements in place to immediately direct reliability entities within their Reliability Coordinator Areas to re-dispatch generation, reconfigure transmission, or reduce load to mitigate critical conditions to return the system to a reliable state. If a Reliability Coordinator delegates tasks to others, the Reliability Coordinator retains its responsibilities for complying with NERC and regional standards. Standards of conduct are necessary to ensure the Reliability Coordinator does not act in a manner that favors one market participant over another.	By request.	Yes
IRO-004-1	All	<b>Reliability Coordination — Operations Planning</b>	BA, GO, GOP, LSE, RC, TO, TOP, TSP	Each Reliability Coordinator must conduct next-day reliability analyses for its Reliability Coordinator Area to ensure the Bulk Electric System can be operated reliably in anticipated normal and Contingency conditions.	By request.	Yes
IRO-014-1	All	<b>Procedures, Processes, or Plans to Support Coordination Between Reliability Coordinators</b>	RC	To ensure that each Reliability Coordinator’s operations are coordinated such that they will not have an Adverse Reliability Impact on other Reliability Coordinator Areas and to preserve the reliability benefits of interconnected operations.	By request.	No

<b>Std #</b>	<b>Requirements</b>	<b>Standard</b>	<b>Who</b>	<b>Purpose</b>	<b>Monitoring Timeframe</b>	<b>Applicable to CMP?</b>
IRO-015-1	All	<b>Notifications and Information Exchange Between Reliability Coordinators</b>	RC	To ensure that each Reliability Coordinator's operations are coordinated such that they will not have an Adverse Reliability Impact on other Reliability Coordinator Areas and to preserve the reliability benefits of interconnected operations.	Rolling 12 months of information provided on request.	No
IRO-016-1	All	<b>Coordination of Real-time Activities Between Reliability Coordinators</b>	RC	that they will not have an Adverse Reliability Impact on other Reliability Coordinator Areas	Rolling 12 months of information provided on request.	No
PER-002-0	All	<b>Operating Personnel Training</b>	BA, TOP	Each Transmission Operator and Balancing Authority must provide their personnel with a coordinated training program that will ensure reliable system operation.	By request training program and training records.	No
PER-003-0	All	<b>Operating Personnel Credentials</b>	BA, RC, TOP	Certification of operating personnel is necessary to ensure minimum competencies for operating a reliable Bulk Electric System.	By request latest certification information and present calendar year plus previous calendar year staffing plan.	No
PER-004-1	All	<b>Reliability Coordination — Staffing</b>	RC	Reliability Coordinators must have sufficient, competent staff to perform the Reliability Coordinator functions.	By request - Each Reliability Coordinator shall keep evidence of compliance for the previous two calendar years plus the current year.	No
PRC-004-1	All	<b>Analysis and Mitigation of Transmission and Generation Protection System Misoperations</b>	DP*, GO, TO	Provide trip operation / misoperation information per regional process.	By request – last 12 months of protection system Misoperation analysis.	Yes
PRC-005-1	All	<b>Transmission and Generation Protection System Maintenance and Testing</b>	DP*, GO, TO	Document/implement transmission protection system maintenance/testing/monitoring PROGRAM	By request - maintenance and testing program and testing records to show that testing intervals are on schedule.	Yes

<b>Std #</b>	<b>Requirements</b>	<b>Standard</b>	<b>Who</b>	<b>Purpose</b>	<b>Monitoring Timeframe</b>	<b>Applicable to CMP?</b>
PRC-008-0	All	<b>Implementation and Documentation of Underfrequency Load Shedding Equipment Maintenance Program</b>	DP, TO	Document/implement UFLS maintenance/testing PROGRAM	By request - maintenance and testing program and testing records to show that testing intervals are on schedule.	Yes
PRC-010-0	All	<b>Technical Assessment of the Design and Effectiveness of Undervoltage Load Shedding Program.</b>	DP, LSE, TO, TOP	ASSESS design and effectiveness of UVLS programs	By request – current assessment.	Yes
PRC-011-0	All	<b>UVLS System Maintenance and Testing</b>	DP, TO	Document/implement UVLS maintenance/testing PROGRAM	By request - maintenance and testing program and testing records to show that testing intervals are on schedule.	Yes
PRC-016-0	All	<b>Special Protection System Misoperations</b>	DP, GO, TO	DOCUMENT/analyze misoperations	By request – last 12 months of special protection system Misoperation analysis.	Yes
PRC-017-0	All	<b>Special Protection System Maintenance and Testing</b>	DP, GO, TO	Document/implement SPS maintenance/testing PROGRAM	By request - maintenance and testing program and testing records to show that testing intervals are on schedule.	Yes
PRC-021-1	All	<b>Under-Voltage Load Shedding Program Data</b>	DP, TO	DOCUMENTATION of undervoltage load shedding program	By request – latest UVLS data.	Yes
TOP-003-0	All	<b>Planned Outage Coordination</b>	BA, GOP, RC, TOP	Scheduled generator and transmission outages that may affect the reliability of interconnected operations must be planned and coordinated among Balancing Authorities, Transmission Operators, and Reliability Coordinators.	By request.	No

<b>Std #</b>	<b>Requirements</b>	<b>Standard</b>	<b>Who</b>	<b>Purpose</b>	<b>Monitoring Timeframe</b>	<b>Applicable to CMP?</b>
TOP-004-1	R6	<b>Transmission Operations</b>	TOP	To ensure that the transmission system is operated so that instability, uncontrolled separation, or cascading outages will not occur as a result of the most severe single Contingency and specified multiple Contingencies.	By request - Each Transmission Operator shall keep 90 days of historical data for Measure 1. Each Transmission Operator shall have current, in-force policies and procedures, as evidence of compliance to Measure 2.	No
TOP-005-1	All	<b>Operational Reliability Information</b>	BA, PSE, RC, TOP	To ensure reliability entities have the operating data needed to monitor system conditions within their areas.	By request.	No
TOP-007-0	All	<b>Reporting System Operating Limit (SOL) and Interconnection Reliability</b>	RC, TOP	Ensure SOL and IROL violations are being reported to the Reliability Coordinator so that the Reliability Coordinator may evaluate actions being taken and direct additional corrective actions as needed.	Event driven.	No
TPL-001-0	All	<b>System Performance Under Normal (No Contingency) Conditions</b>	PA, TPL	System performance under normal conditions	By request – latest annual assessment.	No
TPL-002-0	All	<b>System Performance Following Loss of a Single Bulk Electric System Element</b>	PA, TPL	System performance under single contingency	By request – latest annual assessment.	No
TPL-003-0	All	<b>System Performance Following Loss of Two or More Bulk Electric System Elements</b>	PA, TPL	System performance under multiple contingencies	By request – latest annual assessment.	No

<b>Std #</b>	<b>Requirements</b>	<b>Standard</b>	<b>Who</b>	<b>Purpose</b>	<b>Monitoring Timeframe</b>	<b>Applicable to CMP?</b>
TPL-004-0	All	<b>System Performance Following Extreme Events Resulting in the Loss of Two or More Bulk Electric System Elements</b>	PA, TPL	System performance under extreme contingencies	By request – latest annual assessment.	No
VAR-001-1	All	<b>Voltage and Reactive Control</b>	PSE, TOP	To ensure voltage levels, reactive flows, and reactive resources are monitored, controlled, and maintained within limits in real time to protect equipment and the reliable operation of the Interconnection.	By request – last 12 months of data.	Yes

## **Appendix 2: Confidential Security Sensitive Information**

[This section contains confidential security sensitive information which is not included with the public version, but retained by NERC and the regional organization and is sent privately to the audited entity.]