

Confidential Information (including Privileged and  
Critical Energy Infrastructure Information) Has Been Removed



# **Compliance Audit Report Public Version**

**Confidential Information  
(Including Privileged and Critical Energy Infrastructure Information)  
Has Been Removed**

**MidAmerican Energy  
NCR00824  
NCR06014  
NCR08083  
August 11-20, 2008**

**August 22, 2008**

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## Executive Summary

NERC has designated a subset of Reliability Standards for active compliance monitoring and reporting by the regional entities in their 2008 implementation plan. For 2008, NERC has identified 62 standards as “actively monitored” which contain 294 requirements. The 2008 compliance audits focus on the last 12 months.

MidAmerican Energy (MEC) is registered with the MRO as conducting 11 different functions. As a result of this registration and for this audit, MEC is responsible for meeting compliance with 47 Reliability Standards which contain 187 requirements. MEC is found to be in full compliance with all 187 requirements. An additional 8 standards and their requirements were monitored as a part of the 2007 and 2008 CIPs (Critical Infrastructure Protection) survey.

MEC is also registered with Reliability First Corporation (RFC), SERC Reliability Corporation (SERC) and Southwest Power Pool (SPP) as conducting the Purchasing and Selling Entity (PSE) Function. The MRO staff reviewed the requirements associated with this function on behalf of these Regional Entities which fulfills their obligation to conduct future audits of MEC.

MEC staff completed an Audit Questionnaire and provided the MRO with supporting documentation prior to the on site audit. The MRO staff spent several days reviewing the questionnaire and supporting documentation at the MRO offices. Upon completion of the initial review of evidence, the audit team requested additional documentation as well as identified the subject matter experts to be interviewed.

Once on site, the MEC staff was found to be cordial and willing to answer any questions and when needed, directed the audit team to the correct evidence. The subject matter experts were open with their responses and were cooperative throughout the process.

The Federal Energy Regulatory Commission (FERC) was represented during the audit with four observers. In addition, the North American Electric Reliability was represented by one individual providing NERC Oversight.

## Audit Process

The compliance audit process steps are detailed in the NERC CMEP. The NERC CMEP conforms to the Generally Accepted Government Auditing Standards.

### **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.<sup>1</sup> The audit objectives are:

- Independently review MEC's compliance with the requirements of the reliability standards that are applicable to MEC based on the MEC's registered functions.
- Validate compliance with applicable reliability standards from the NERC 2008 Implementation Plan list of actively monitored standards.
- Validate evidence of self-reported violations and previous self-certifications, confirm compliance with other requirements of the reliability standard, and review the status of associated mitigation plans.

### **Scope**

The MEC Compliance Audit was conducted as a part of its normal three year cycle. The 2008 Compliance Program consists of 54 actively monitored Standards. Seven of these Standards were deemed not applicable, seven of which are related directly to the Reliability Coordinator (RC) function.

### **Confidentiality and Conflict of Interest**

Confidentiality agreements and code of conduct documentation for the NERC representative and regional entity staff were available to the audited entity in advance of the audit. Work history and conflict of interest forms submitted by each audit team member were available to the audited entity if requested. The audited entity 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. The audited entity accepted the audit team member participants with no objections.

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<sup>1</sup> North American Electric Reliability Corporation CMEP, paragraph 3.1, Compliance Audits

## ***On-site Audit***

Upon arrival the first day, MEC was given the opportunity to present and overview of their company. The MRO presented an opening presentation which gave a high level overview of the status of the compliance audit process.

The auditor code of conduct was reviewed. MRO staff must adhere to confidentiality as required through the NERC Delegation Agreement. NERC staff has their own Code of Conduct. MRO staff requested MEC's cooperation in complying with the following guidelines: MRO must be billed for all meals and snacks, auditors may not fraternize with employees of MEC during breaks and outside of work during the period of the audit, and the audit team members may not accept gifts, regardless of value.

## ***Methodology***

Audit criteria included standards, measures, and expectations based on best practices. The criteria were objective, measurable, complete and relevant to the objectives. The audit team accepted and was not limited to policies, procedures, screen-prints of the Energy Management System (EMS), copies of operator logs, audio clips, and correspondence. If needed, additional supporting documentation or clarification was requested.

To ensure consistency and fairness during each compliance audit the audit team utilizes the following:

- The NERC Violation Risk Factor (VRF) Standards Applicability Matrix was utilized to determine which Standards and Requirements were applicable to MidAmerican Energy
- The Reliability Standards Auditor Worksheets (RSAW) to review each reliability standard during the compliance audit.
- FERC Order 693 was used for clarification of Standards in some instances.

## ***Audit Overview***

In October of 2007 MEC agreed to the MRO's proposed schedule of conducting a Compliance Audit July 23-24, 2008. Due to MRO scheduling conflicts the audit was rescheduled for August 19-20, 2008. The 60-day packet went out April 14, 2008. In the packet, MEC received a copy of the Two Month Prior On-Site Audit Notification, the Pre-Audit Survey, an Audit Questionnaire, the MRO Regional Procedure for conducting audits, the MRO Preparing for Compliance and Compliance Audit document and the Subject Matter Expert Document. In addition, the Midwest ISO Reliability Coordinator was requested to fill out a questionnaire regarding MEC's response to reliability concerns on the bulk electric system.

## ***Audit***

Two weeks prior to the audit team site visit, MEC supplied MRO with approximately 95% of supporting documentation needed to demonstrate compliance. MRO staff reviewed this documentation in the MRO offices. The compliance staff utilized the NERC Standards and the RSAW while reviewing the supporting documents and the Audit Questionnaire response provided by MEC.

After evaluation of the supporting documentation, a set of questions was developed for the subject matter experts at MEC and additional supporting evidence was identified. Once on site, the team of auditors was able to review the necessary documents and conduct interviews of the subject matter experts. These interviews, in conjunction with supporting evidence, provided the audit team with a basis for verifying compliance with reliability standards. Subject matter experts for the following standards were requested to be available: BAL-001, thru BAL-003, BAL-005, BAL-006, CIP-001, COM-001, EOP-001 thru 005, EOP-008, EOP-009, FAC-003, FAC-009, IRO-005, IRO-006, PER-002, PRC-004, PRC-005, PRC-008, PRC-016, and TOP-002.

The operations staff was also interviewed to verify documentation and tools to conduct their job responsibilities were available to them at all times.

## ***Exit Briefing***

Upon completion of the audit process, the MRO audit team and MEC staff met to review the exit presentation. At this time, the audit team found MEC to be 100% compliant with the actively monitored standards.

## **Company Profile**

MidAmerican Energy Company, a subsidiary of MidAmerican Energy Holdings Company is an Iowa summer peaking electric utility with a peak load of 4,240 MWs that occurred on August 13, 2007. MidAmerican provides service to more than 720,000 electric customers in a 10,600 square-mile area from Sioux City area to the Quad Cities area. The largest communities served by MidAmerican are Des Moines, the Quad Cities area, Sioux City, Waterloo, Iowa City, and Council Bluffs.

The MidAmerican Energy Company operates 1139 miles of 345 kV and 1427 miles of 161 kV bulk power electric lines. MidAmerican also utilizes approximately 1932 miles of 69 kV and 103 miles of 34.5 kV lines. MidAmerican Energy Company has approximately 6,700 megawatts of generating capability with approximately 55 percent fueled by coal, 22 percent natural gas and oil, 10 percent nuclear, and 13 percent wind, hydroelectric, biomass and other nonrenewable sources.

MidAmerican has adequate generation resources to serve its obligations and has contracted for 377 MW of firm power purchases in July of 2008 (a list is available upon request). MidAmerican has the following 345kV and 161 kV interconnections with neighboring BA's:

Alliant Energy (ATC and ITC) = 3 – 345 kV and 19 – 161 kV

Ameren = 1 – 345 and 1 – 138 kV

Missouri Public Service = 1 – 161 kV

Muscatine Power & Water = 1 – 161 kV

Nebraska Public Power District = 2 – 345 kV

Omaha Public Power District = 2 – 345 and 3 – 161 kV

PJM = 4 – 345 kV

Western Area Power Administration = 1 – 345 and 4 – 161 kV

MidAmerican Energy Holdings Company which owns MidAmerican Energy Company has \$39 billion in assets, 17,000 employees, is a subsidiary of Berkshire Hathaway, a global leader in the production of energy from diversified fuel sources including geothermal, natural gas, hydroelectric, nuclear, coal, and wind. Through its utility subsidiaries, MidAmerican Energy and PacifiCorp in the United States and Northern Electric and Yorkshire Electricity in the United Kingdom, the company provides electric and natural gas service to approximately 6.9 million customers. Through CalEnergy, the company's independent power production business, and the utility operations of MidAmerican Energy and PacifiCorp, MidAmerican contracts, manages and owns interests in approximately 20,000 megawatts of diversified power generation facilities, 18 percent of which is from non-carbon resources such as geothermal, wind, other renewable and nuclear. MidAmerican Energy Holdings Company subsidiaries include, MidAmerican Energy Company, PacifiCorp, CE Electric UK, CalEnergy Generation, Kern River Gas Transmission Company, Northern Natural Gas, and HomeServices of America, Inc.

### **Audit Specifics**

The compliance audit commenced August 11 – 15, 2008 at the MRO offices in Roseville MN and was completed at the MidAmerican Energy office in Urbandale, IA August 19 – 20, 2008.

### **Audit Team**

<b>Audit Team Role</b>	<b>Title</b>	<b>Company</b>
Lead	Compliance Audit Manager	MRO
Member	Compliance Audit Manager	MRO
Member	V.P. Compliance	MRO
Member	Engineer	MRO
Member	Compliance Principal	MRO
Member	Sr. Compliance Principal	MRO
Oversight	Regional Compliance Coordinator	NERC
Observer	Electrical Engineer	FERC
Observer	Economist	FERC
Observer	Engineer	FERC
Observer	Electrical Engineer	FERC

### **MidAmerican Audit Participants**

<b>Title</b>	<b>MidAmerican Organization</b>
Sr. Resource Manager	Electric Trading
Transmission Operator	Transmission Operations
Director System Control	Control Center
Senior Engineer	System Protection
Manager	System Protection
Engineer II	WSEC
Supervising Engineer	MREC
Sr. Engineer	SCNS (Neal)
General Manager	Fluid Generation
Engineer	Substation Operations
Manager Operations	Vegetation Management
Sr. Engineer	System Operations
BA Administrator	System Operations
Superintendent	Transmission Operations
Principle Engineer	System Operations
Engineer	Control Center
Director – Resource Operations	MEC Trading
Manager, IT Supply Apps	MEC IT
Sr. Analyst – EMS	MEC IT
Sr. Engineer	System Planning

## Audit Results

- MidAmerican Energy (MEC) provided the audit team with supporting documentation for review prior to the on-site visit. The team received approximately 95% of the supporting documentation needed for evidence. The audit team spent the week prior to the on-site visit reviewing the supplied documentation. As a result of reviewing this evidence, the audit team developed questions for the subject matter experts and a list of additional required documentation.
- MEC provided a number of the requested additional documents prior to the on-site visit and the remaining documents were supplied during the subject matter expert interviews.
- The audit team randomly selected facilities to be reviewed and operator records to be reviewed through the use of a random sample generator. Once these facilities or operators were identified MEC provided the appropriate documentation as evidence of work completed.
- MEC personnel were allowed to speak freely without interruption from management during the subject matter expert interviews and the operator interviews.
- The Midwest ISO RC responded to the questionnaire sent out regarding the MEC relationship with the RC. The Midwest ISO RC responded positively to MEC compliance with RC directives and interaction.
- The audit team utilized the Reliability Standard Auditor Worksheets (RSAW) in order to assess compliance to the reliability standards. The primary questions of the subject matter experts were documented in addition to the requests for additional evidence.
- Requests were made to review older versions of documents when the newer document had revision or created dates after June 18, 2007. MEC was able to provide the documents requested which were reviewed by members of the audit team.
- The VP of Compliance and Standards, the VP of Delivery, the VP of Electric Trading, and the Director for Resource Operations were present for the exit presentation as well as all of the SME department managers.

**Findings**

**Compliance Audit**

Conducted On: **Aug 11 - 20, 2008**

Entity: **MidAmerican Energy Company (MEC)**

Address: **106 East Second Street, Davenport, Iowa 52801, United States**

NERC Compliance Registry ID **NCR00824**

<b>Standard Requirement</b>	<b>Compliant</b>
BAL-001-0 R1	Yes
BAL-001-0 R2	Yes
BAL-001-0 R3	Yes
BAL-001-0 R4	Yes
BAL-002-0 R1	Yes
BAL-002-0 R3	Yes
BAL-002-0 R4	Yes
BAL-002-0 R6	Yes
BAL-003-0 R1	Yes
BAL-003-0 R2	Yes
BAL-003-0 R3	Yes
BAL-003-0 R4	Yes
BAL-003-0 R5	Yes
BAL-003-0 R6	Yes
BAL-004-0 R3	Yes
BAL-004-0 R4	Yes
BAL-005-0 R1	Yes
BAL-005-0 R2	Yes
BAL-005-0 R3	Yes
BAL-005-0 R4	Yes
BAL-005-0 R5	Yes
BAL-005-0 R6	Yes
BAL-005-0 R7	Yes
BAL-005-0 R8	Yes
BAL-005-0 R9	Yes
BAL-005-0 R10	Yes
BAL-005-0 R11	Yes
BAL-005-0 R12	Yes
BAL-005-0 R13	Yes
BAL-005-0 R14	Yes
BAL-005-0 R15	Yes
BAL-005-0 R16	Yes
BAL-005-0 R17	Yes
BAL-006-1 R1	Yes
BAL-006-1 R2	Yes
BAL-006-1 R3	Yes
BAL-006-1 R4	Yes
BAL-006-1 R5	Yes
CIP-001-1 R1	Yes
CIP-001-1 R2	Yes
CIP-001-1 R3	Yes
CIP-001-1 R4	Yes
COM-001-1 R2	Yes

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<b>Standard Requirement</b>	<b>Compliant</b>
COM-001-1 R5	Yes
COM-002-2 R1	Yes
COM-002-2 R2	Yes
EOP-001-0 R1	Yes
EOP-001-0 R2	Yes
EOP-001-0 R3	Yes
EOP-001-0 R4	Yes
EOP-001-0 R5	Yes
EOP-001-0 R6	Yes
EOP-001-0 R7	Yes
EOP-002-2 R1	Yes
EOP-002-2 R2	Yes
EOP-002-2 R3	Yes
EOP-002-2 R4	Yes
EOP-002-2 R5	Yes
EOP-002-2 R6	Yes
EOP-002-2 R7	Yes
EOP-002-2 R9	Yes
EOP-003-1 R1	Yes
EOP-003-1 R2	Yes
EOP-003-1 R3	Yes
EOP-003-1 R4	Yes
EOP-003-1 R5	Yes
EOP-003-1 R6	Yes
EOP-003-1 R7	Yes
EOP-003-1 R8	Yes
EOP-004-1 R2	Yes
EOP-004-1 R3	Yes
EOP-005-1 R1	Yes
EOP-005-1 R2	Yes
EOP-005-1 R3	Yes
EOP-005-1 R4	Yes
EOP-005-1 R5	Yes
EOP-005-1 R6	Yes
EOP-005-1 R7	Yes
EOP-005-1 R8	Yes
EOP-005-1 R9	Yes
EOP-005-1 R10	Yes
EOP-005-1 R11	Yes
EOP-008-0 R1	Yes
EOP-009-0 R1	Yes
EOP-009-0 R2	Yes
FAC-003-0 R1	Yes
FAC-003-0 R2	Yes
FAC-003-0 R3	Yes
FAC-008-1 R1	Yes
FAC-008-1 R2	Yes
FAC-008-1 R3	Yes
FAC-009-1 R1	Yes
FAC-009-1 R2	Yes
INT-001-2 R1	Yes
INT-001-2 R2	Yes

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<b>Standard Requirement</b>	<b>Compliant</b>
INT-003-2 R1	Yes
INT-004-1 R1	Yes
INT-004-1 R2	Yes
IRO-001-1 R8	Yes
IRO-004-1 R4	Yes
IRO-004-1 R7	Yes
IRO-005-1 R8	Yes
IRO-005-1 R12	Yes
IRO-005-1 R13	Yes
IRO-006-3 R6	Yes
PER-002-0 R1	Yes
PER-002-0 R2	Yes
PER-002-0 R3	Yes
PER-002-0 R4	Yes
PER-003-0 R1	Yes
PRC-004-1 R1	Yes
PRC-004-1 R2	Yes
PRC-004-1 R3	Yes
PRC-005-1 R1	Yes
PRC-005-1 R2	Yes
PRC-008-0 R1	Yes
PRC-008-0 R2	Yes
PRC-010-0 R1	Yes
PRC-010-0 R2	Yes
PRC-011-0 R1	Yes
PRC-011-0 R2	Yes
PRC-016-0 R1	Yes
PRC-016-0 R2	Yes
PRC-016-0 R3	Yes
PRC-017-0 R1	Yes
PRC-017-0 R2	Yes
PRC-021-1 R1	Yes
PRC-021-1 R2	Yes
TOP-002-2 R1	Yes
TOP-002-2 R2	Yes
TOP-002-2 R3	Yes
TOP-002-2 R4	Yes
TOP-002-2 R5	Yes
TOP-002-2 R6	Yes
TOP-002-2 R7	Yes
TOP-002-2 R8	Yes
TOP-002-2 R9	Yes
TOP-002-2 R10	Yes
TOP-002-2 R11	Yes
TOP-002-2 R12	Yes
TOP-002-2 R13	Yes
TOP-002-2 R14	Yes
TOP-002-2 R15	Yes
TOP-002-2 R16	Yes
TOP-002-2 R17	Yes
TOP-002-2 R18	Yes
TOP-002-2 R19	Yes

<b>Standard Requirement</b>	<b>Compliant</b>
TOP-003-0 R1	Yes
TOP-003-0 R2	Yes
TOP-003-0 R3	Yes
TOP-004-1 R6	Yes
TOP-005-1 R1	Yes
TOP-005-1 R3	Yes
TOP-005-1 R4	Yes
TOP-007-0 R1	Yes
TOP-007-0 R2	Yes
TOP-007-0 R3	Yes
TPL-001-0 R1,R2 & R3	Yes
TPL-002-0 R1, R2 & R3	Yes
TPL-003-0 R1, R2 & R3	Yes
TPL-004-0 R1 & R2	Yes
VAR-001-1 R1	Yes
VAR-001-1 R2	Yes
VAR-001-1 R3	Yes
VAR-001-1 R4	Yes
VAR-001-1 R5	Yes
VAR-001-1 R6	Yes
VAR-001-1 R7	Yes
VAR-001-1 R8	Yes
VAR-001-1 R9	Yes
VAR-001-1 R10	Yes
VAR-001-1 R11	Yes
VAR-001-1 R12	Yes
VAR-002-1 R1	Yes
VAR-002-1 R2	Yes
VAR-002-1 R3	Yes
VAR-002-1 R4	Yes
VAR-002-1 R5	Yes

### ***Compliance Culture***

The MidAmerican compliance culture was not reviewed by the audit team. The Regional Entity compliance staff will review the MidAmerican compliance culture.