



Compliance Audit Report

Madison Gas & Electric July 25-26, 2007

July 28, 2007

Public Version



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EXECUTIVE SUMMARY

In the 2007 MRO CMEP program there are a total of 41 actively monitored standards (40 NERC and 1 MRO). Of those 41, there are 28 that may apply to functions for which MGE is registered. Examination of documentation revealed that of those 28, there are 5 that do not apply to MGE.

The applicable 23 Reliability Standards included a total of 77 requirements that were reviewed during the audit. Of the 23 standards assessed for compliance, following are the findings:

Full Compliance	23
Non-compliance	0

Standards found to not apply to MGE:

- PRC-010 – UVLS Design – No UVLS on the MGE system
- PRC-011 – UVLS Maintenance – No UVLS on the MGE system
- PRC-016 – SPS Misoperations – No SPS on the MGE system
- PRC-017 – SPS Maintenance – No SPS on the MGE system
- PRC-021 – UVLS Program – No UVLS on the MGE system

MGE employs an excellent on-line system for archiving nearly all operating records, procedures, reports, processes and other documentation. This system also provides a very convenient method of accessing information for the compliance audit and served to speed the document search greatly.

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.¹ The audit objectives are:

- Independently review MGE compliance with the requirements of the reliability standards that are applicable to MGE based on their registered functions.
- Validate compliance with applicable reliability standards from the NERC 2007 Implementation Plan list of actively monitored standards.
- Validate compliance with MRO standard BAL-MRO-002.

Scope

This on-site compliance audit was done as a regular periodic scheduled audit. It included document verification for all applicable standards in the NERC 2007 CMEP.

¹ North American Electric Reliability Corporation CMEP, paragraph 3.1, Compliance Audits

Methodology

1. Documentation associated with each applicable Requirement of each applicable Reliability Standard was examined by auditors and verified as compliant. The primary method of research was via the MGE on-line archives.
2. Interviews were held with several operating and planning personnel for purposes of verifying that the processes and procedures detailed in documentation was actually being carried out and that the users were familiar with them and used them.

Company Profile

Registered Entity Overview:

Madison Gas and Electric Co. is registered with NERC and the MRO as a balancing authority and is located in the state of Wisconsin. Madison Gas and Electric Co. generates and distributes electricity to nearly 136,000 customers in Dane County and purchases and distributes natural gas to more than 137,000 customers in seven south-central and western Wisconsin counties. Madison Gas and Electric Co. has served the Madison area since 1896.

Madison Gas and Electric Company's electrical service area encompasses a geographical area of two hundred square miles in and around the greater City of Madison, Wisconsin. Madison Gas and Electric Co. is a member of the Midwest Independent System Operator (MISO) which is our reliability coordinator. MISO performs the security-constrained economic dispatch and provides Madison Gas and Electric Co. with five-minute net schedule interchange signal and individual generator base points. Madison Gas and Electric Co. has a FERC waiver on the standards of conduct to allow marketing and generation to function together.

Madison Gas and Electric Co. operates within the American Transmission Company (ATC) foot print. In 1999, the Wisconsin Act-9 was passed, which enabled the formation of the ATC. ATC was formed in January 2001 when Madison Gas and Electric, We Energies, Alliant East, Wisconsin Public Service, and Upper Peninsula Power Company transferred all their transmission assets above 50 kV to ATC. ATC is now the owner and operator of the transmission system and is responsible for interconnection reliability, including transmission system switching, maintenance coordination, approval of transmission outages, and coordination of the overall transmission and generation outage plans for Madison Gas and Electric Co. ATC contracts Madison Gas and Electric Co. field personnel for the operation of transmission components within the Madison Gas and Electric Co. balancing area.

Madison Gas and Electric Company's Energy Supply Operations Supervisor (ESOS) is the job title used to designate the operators responsible for the balancing functions, such as generation and marketing related portions. The ESOS position rotates on a six-week schedule for coverage 24 hours a day, 7 days a week, with eight available days allocated for training. The Distribution System Operations Supervisor (DSOS) is the nomenclature used by Madison Gas and Electric Co. to designate the operators responsible for its distribution system. The DSOS position rotates on an eight-week schedule for coverage 24 hours a day, 7 days a week, with one week allocated for

training. Both the DSOS and ESOS positions are required to be staffed by NERC Certified operators. Madison Gas and Electric Co. reported its all-time peak of 742 MW on 31 July 2006.

Registered Entity Functions Assessed During Audit:

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

Audit Specifics

The compliance audit was conducted on July 25-26, 2007 at the MGE office in Madison, Wisconsin.

MRO Audit Team

Audit Team Role	Name	Title	Company
Lead	Shel Berg	Director, Tech Svcs	MRO
Member	Jim Burley	Compliance Principle	MRO
Member	Mike Brytowski	Engineer Associate	MRO
Member	Ellen Oswald	Regional Coordinator	NERC

MGE Audit Participants

Name	Title	MGE
Scott Neitzel	VP Energy Supply Policy	
Hal Haugom	Manager Electric Energy Trading	
Michelle Schlossberg	Operations Planner Engineer II	
Eric Dietzman	Manager Distribution Oprtns Center	
Gary Brendemuehl	Senior Engineer – Energy Supply Engr	
Mark Weirers	Senior Engineer – Operations Support	
David Blankenheim	Director – Operations Support	
Ron Hinson	Energy Trading Manager	
Robert Thorson	Operations Analysis Manager	
Joseph DePoorter	Reliability Compliance Manager	
Joseph Buch	Consultant	
Joe Coopes	ESOS	
Bill Copeland	DSOS	
Dan Higgins	Director – Energy Prod Support Serv.	
Kent Elliott	Electrical Engr – Energy Production	
John Thomasen	Transmission Engineer	
Martin Day	Manager - Forecasting	
Randy Pollek	Joint Plant Manager	
Ken Anderson	Senior Engineer - Substations	
Ed Maass	Director Blount Operation	
Robert Patton	Manager – Blount Maintenance	
Paul Roehr	Senior Director – System Operations	

AUDIT RESULTS

All documentation except a certain few procedures and reports considered to be of a sensitive nature are included in the MGE database. Those sensitive documents were reviewed as hard copy documents, with the remainder witnessed by the audit team in the on-line database. The following is a summary of all standards that are applicable to the functions for which MGE is registered in the MRO.

Findings

Reliability Standard	Auditor Notes	Finding
BAL-001-0	Reviewed and validated the last 12 months of CPS calculations. MGE reported meeting CPS1 and CPS2 to its region on a monthly basis.	Compliant
BAL-002-0	Reviewed the data to calculate DCS for the last 12 months. The last 4 quarterly reports of DCS were reported to the region and were found compliant.	Compliant
BAL-MRO-002	Reviewed data that verified that MGE is part of a reserve sharing group and that they maintain 40% of their operating reserve allotment as spinning reserve.	Compliant
BAL-003-0	MGE presented evidence of how they calculate its Frequency Bias setting and reviewed this setting 12/22/06	Compliant
CIP-001-1	MGE provided a procedure on how sabotage events will be identified and reported to local and federal officials, neighboring entities and to regulatory bodies. Interviews with MGE employees revealed that the employees are aware and have been trained on the procedure.	Compliant
COM-001-1	MGE provided documentation pertaining to its communication systems and a documented procedure identifying critical communications equipment and written operating instructions and procedures to enable continued operation of the system during the loss of telecommunications facilities. The testing and maintenance logs of communication equipment were provided to the audit team as evidence.	Compliant
EOP-001-0	MGE provided the following: Plans dated 2007 to mitigate operating emergencies on the transmission system and load shedding and other emergencies as defined in the requirements of EOP-001-0. Evidence of coordinating the MGE emergency plans was provided. Plans have been exchanged with neighboring entities and the MISO RC	Compliant
EOP-003-1	MGE presented documented load shedding information pertaining to all 8 Requirements of this standard.	Compliant

Reliability Standard	Auditor Notes	Finding
EOP-005-1	MGE presented documentation on all applicable requirements in this standard. As a BA, there are some requirements that do not pertain to them. MGE participates in the annual restoration drills hosted by MISO.	Compliant
EOP-008-0	MGE presented documentation regarding their plans for loss of the primary facility, and evacuation to the Back Up Control Center. Note - MGE is in the process of upgrading their BUCC.	Compliant
EOP-009-0	MGE presented documentation verifying compliance with both requirements of this standard.	Compliant
FAC-008-1	Documentation of the MGE ratings methodology was presented verifying compliance with all 3 requirements of this standard.	Compliant
FAC-009-1	Documentation verified that MGE assigns ratings based on its methodology.	Compliant
IRO-001-1	Documentation in several MGE documents verified that operators are responsible for following directives of the RC as specified in R8.	Compliant
IRO-004-1	Documentation verified that MGE documents are developed in concert with the MISO RC procedures for operations planning, and that MGE provides operating information as required by MISO.	Compliant
PER-002-0	MGE training procedures and records verify that operating personnel have adequate time built into the schedule to allow for necessary training, and that training programs are adequate. MGE is a NERC certified training provider and has 2 NERC certified trainers and a person designated as Training Coordinator.	Compliant
PER-003-1	MGE operators (and some other personnel) are NERC certified at the RC level currently, although CEH requirements and associated training requirements may make that impossible to maintain in the future. It is anticipated that operators will be required in the future to maintain the combined Balancing/Transmission certification. Note – All operator certification numbers were verified by NERC staff.	Compliant
PRC-004-1	MGE conducts a monthly process to review misoperation, but has had no misoperations in recent years. MGE also reports quarterly to MRO in response to the MRO request for misoperation information.	Compliant
PRC-005-1	The audit team reviewed the MGE relay maintenance and testing database and found it compliant.	Compliant
PRC-008-0	The MGE UFLS maintenance and testing program is contained in the same database with their other relay programs.	Compliant
TOP-003-0	MGE documentation verified compliance with R1-3 of this standard. R4 applies only to an RC.	Compliant
TOP-005-0	MGE documentation verified that they are supplying required information via ICCP to ATC and to the MISO RC. MISO verified that MGE supplies data as requested.	Compliant
VAR-001-0	MGE documentation verified that MGE is responsive to requests from ATC and from MISO regarding deployment of voltage control devices.	Compliant

Conclusions

MGE was found to be fully compliant in all Requirements for all applicable Reliability Standards included in this audit.

The Audit Team found the MGE staff to be very professional and dedicated to the reliable operation of the power system under their control. The MGE staff exhibits a high degree of cooperation in accomplishing the tasks necessary to meet their overall goals.

The Audit Team would like to thank MGE for being well prepared, and for being candid with their comments. We also thank the MGE staff for their hospitality and for making the audit team feel welcome.

Note - This compliance audit report will be provided to the regional entity compliance staff for processing through the NERC CMEP.