



Compliance Audit Report Public Version

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

**Duke Energy Corporation
NERC ID # - NCR00761**

**Date of Audit
October 20-23, 2009**

**Date of Report
January 25, 2009**

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Executive Summary

This final compliance audit report is the public version. Confidential information (including privileged and critical energy infrastructure information) has been redacted from this report. The full final compliance audit report was submitted to the audited entity and NERC.

An on-site compliance audit of the Duke Energy Corporation (DEC) was conducted from October 20-23, 2009. ReliabilityFirst conducts compliance audits as part of the ReliabilityFirst Compliance Monitoring and Enforcement Program (CMEP). At the time of the audit, DEC was registered (NCR00761) for the Balancing Authority (BA), Purchasing-Selling Entity (PSE), Load Serving Entity (LSE), Generator Operator (GOP), Generator Owner (GO), Distribution Provide (DP), Resource Planner (RP), Transmission Operator (TOP), Transmission Planner (TP), and Transmission Owner (TO) functions that it performs in the ReliabilityFirst region.

The audit team evaluated DEC for compliance with 139 requirements in 34 NERC Reliability Standards and seven requirements in three ReliabilityFirst Standards for the period of June 18, 2007 to October 22, 2009. DEC provided information and documentation to aid the audit team's evaluation of compliance with the standards. The audit team reviewed and evaluated all information provided by DEC to assess compliance with standards applicable to the BA, PSE, LSE, GOP, GO, DP, TOP, RP, TP, and TO functions. DEC is registered for the BA function under a Joint Registration Organization (JRO00001) in the ReliabilityFirst region.

Based on the information and documentation provided by DEC, the audit team made the following determinations: four requirements and one NERC Reliability Standard in its entirety were determined to be not applicable to DEC. DEC was found to be compliant with 135 of 139 applicable requirements in 33 of 34 applicable NERC Reliability Standards. DEC was also found to be compliant with the seven applicable requirements of the three applicable ReliabilityFirst Standards.

DEC had one ongoing Mitigation Plan. Since it was not scheduled for completion until November 30, 2009, the ReliabilityFirst Compliance Enforcement group did not require the audit team to take any action on the Mitigation Plan.

Audit Process

The compliance audit process steps are detailed in the Reliability*First* CMEP. The Reliability*First* 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.¹ The audit objectives are to:

- Review DEC's compliance with the requirements of Reliability Standards that are applicable to DEC based on DEC's registered functions.
- Validate compliance with applicable Reliability Standards from the NERC 2009 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 Standards, and review the status of associated Mitigation Plans.
- Document DEC's compliance program and culture.
- Validate compliance with other NERC Reliability Standards outside the 2009 implementation plan as selected by Reliability*First*.
- Validate compliance with applicable Reliability*First* Reliability Standards that are applicable to DEC.

Scope

The scope of the compliance audit included applicable NERC Reliability Standards in the NERC 2009 CMEP Implementation Plan, additional NERC Reliability Standards selected by Reliability*First*, and all applicable Reliability*First* standards, self-certifications, and Mitigation Plans as appropriate.

Confidentiality and Conflict of Interest

Confidentiality and Conflict of Interest of the audit team are governed under the Reliability*First* Delegation Agreement with NERC and the NERC Rules of Procedure Section 1500. DEC was informed of the Reliability*First* obligations and responsibilities under the agreement and procedures. The work history for each audit team member was provided to DEC. DEC was given an opportunity to object to an audit team member on the basis of a possible conflict of

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

interest or the existence of other circumstances that could interfere with the audit team member's impartial performance of duties. DEC did not submit any objections by the stated fifteen day objection due date and by this action accepted the audit team member participants without objection. ReliabilityFirst found no conflict of interest for any of the audit team members.

On-site Audit

DEC is currently subject to a compliance audit at a minimum of once every three years as provided by the NERC Rules of Procedure. Within ReliabilityFirst, every Reliability Coordinator (RC), Transmission Operator (TOP), and Balancing Authority (BA) registered in the NERC Compliance Registry is required to have an on-site audit once every three years. DEC was provided with a 90 day notification of this scheduled audit and at that time all necessary documents required by the NERC and ReliabilityFirst audit process were provided. The following documents were provided as part of the notification:

- 90 day Notification letter which contained request for evidence and information, about confidentiality and data submittals
- Compliance Audit Survey
- Audit Agenda as applicable
- Internal Compliance Program Survey
- Audit Team Work History, Conflict of Interest and Confidentiality Documents
- General Instructions for Data or Information Submittals
- Compliance Questionnaire and Reliability Standard Audit Worksheets (QRSAWs)

The documents listed above were provided to DEC electronically.

ReliabilityFirst discussed the use of technical experts with the DEC primary compliance contact and indicated that ReliabilityFirst would welcome the use of technical experts by DEC as it deemed necessary to explain their compliance to the standards. As such, DEC was notified to provide any technical experts or personnel that it deemed necessary in order to provide the audit team an understanding of the evidence provided to demonstrate compliance.

An audit agenda and schedule were provided to DEC in advance to allow the necessary time to prepare for the audit. DEC's cooperation and flexibility with the agenda was appreciated by the audit team.

This audit was conducted in the DEC offices using material provided by DEC. The audit team reviewed DEC compliance processes for all applicable standards with DEC technical experts and requested additional information to clarify information previously supplied to the team. These interviews in conjunction with evidence provided, supplied the audit team with a basis for using professional judgment when validating compliance to the Reliability Standards.

Methodology

The audit team reviewed the evidence provided by DEC for each of the Reliability Standards and requirements that apply to the functions performed by the company to assess DEC's compliance with those Reliability Standards and associated requirements. The audit team reviewed each requirement, discussed the levels of compliance and addressed each team member's observations from the audit to determine its findings from the review. The audit team also toured the DEC Transmission Operator and Balancing Authority Control Rooms to verify evidence of compliance to appropriate NERC and Reliability *First* Standards. The tour provided the opportunity to ask the Control Room staff questions without interrupting their on-shift work. Each response was appropriate and the Control Room staff was knowledgeable on the DEC System, their role and the location of their various documents (i.e. procedures, operating guides, etc.).

Opening Briefing

An Opening Briefing was conducted on October 20, 2009 to discuss the following:

- Introduction of Audit Team
- Audit Objective and Scope
- Confidentiality of Information
- Audit Team Expectations
- Discussion on Clarification Requests
- Audit Process
- Exit Briefing and Schedule

Audit

The audit team worked in two groups. The applicable standards were divided between the two groups and each group reviewed each requirement assigned to it to determine if DEC was compliant to the requirement. Each of the two groups shared its findings with the other to determine DEC's compliance to each of the standard requirements. The audit team reviewed all requirements of the functions applicable to DEC to assess DEC's compliance to the requirements. The audit team strived to follow the agenda and schedule. Upon request, DEC provided additional information or clarified existing information during the review of its material with their subject matter experts.

Exit Briefing

The audit team conducted an exit briefing with DEC staff on October 23, 2009 utilizing a PowerPoint presentation. The status of the on-site audit process was discussed, followed by audit scope, preliminary audit findings, the compliance audit report process, items for

consideration, and confidentiality of information. Possible Violations identified during the audit were discussed with the preliminary results. DEC was provided an opportunity to ask questions that the audit team then addressed.

Company Profile

DEC performs the following NERC function in the Reliability *First* Region and is registered with NERC/Reliability *First* for each of them:

- Balancing Authority (BA) – JRO00001
- Purchasing-Selling Entity (PSE)
- Load Serving Entity (LSE)
- Generator Operator (GOP)
- Generator Owner (GO)
- Distribution Provide (DP)
- Resource Planner (RP)
- Transmission Operator (TOP)
- Transmission Planner (TP)
- Transmission Owner (TO)

Duke Energy, headquartered in Charlotte, North Carolina, delivers electric energy to about 4 million customers in the Midwest and the Carolinas with about 35,000 MW of electric generation capacity. Duke Energy Carolinas, Duke Energy Ohio, and Duke Energy Indiana are subsidiaries of Duke Energy. Duke Energy Kentucky is a wholly owned subsidiary of Duke Energy Ohio. Duke Energy Midwest is the internal name used for Duke Energy Ohio, Duke Energy Kentucky and Duke Energy Indiana and is the subject of this audit.

DEC owns approximately 1,300 miles of 345 kV transmission lines, 667 miles of 230 kV, and 2,160 miles of 138 kV. Some of the Duke Energy Ohio transmission lines are jointly owned with American Electric Power (AEP) and Dayton Power and Light (DP&L). DEC, AEP, and DP&L have clearly delineated responsibilities for the jointly owned lines. Duke Energy Indiana, the Indiana Municipal Power Association, and the Wabash Valley Power Association own the Joint Transmission System in Indiana. The three co-owners each have rights to use the Joint Transmission System.

DEM is interconnected with American Electric Power, Dayton Power and Light, East Kentucky Power Cooperative, Louisville Gas and Electric Energy, Ohio Valley Electric Cooperative, Ameren, Hoosier Energy, Indianapolis Power and Light, Northern Indiana Public Service Company, and Vectren.

DEC normally peaks in the summer and had an all-time electric summer peak load of 13,509 MW on August 23, 2007. DEC owns regulated and non-regulated generation assets with a total of approximately 15,479 MW of generation capacity. The regulated business has 6287 MW of

coal fired, 2682 MW of gas or oil fired, and 65 MW of hydro generation. The non-regulated business has 3609 MW of coal and 2836 MW of gas or oil generation.

DEC participates in the Midwest Independent Transmission System Operator (MISO) market where MISO is the Reliability Coordinator (RC), Balancing Authority (BA), and Transmission Service Provider (TSP) for the DEC owned generation and transmission facilities. DEC and MISO each perform a portion of the Balancing Authority functions as defined by the Joint Registration Organization (NERC ID# JRO00001)

As of January 6, 2009, MISO assumed specific Balancing Authority tasks and responsibilities under JRO0001 that DEC was previously registered to perform.

MISO is the Reliability Coordinator for DEC except for jointly owned generation in PJM where PJM is the Reliability Coordinator.

Audit Specifics

The compliance audit was conducted on October 20-23, 2009 at the DEC office in Cincinnati, OH.

Audit Team

The members of the ReliabilityFirst compliance audit team are listed below:

Audit Team Role	Title	Company
Lead, Team 1 lead	Senior Consultant	ReliabilityFirst Corporation (RFC)
Member Team 2 lead	Manager of Compliance Support	RFC
Member	Senior Consultant	RFC
Member	Senior Engineer	RFC
Member	RFC Consultant	SPA
Member	RFC Consultant	Sander-Reber
Observer	Compliance Specialist	RFC
Observer	Regional Coordinator	North American Electric Reliability Corporation (NERC)
Observer	Regional Coordinator	NERC
Observer	Electrical Engineer	Federal Energy Regulatory Commission (FERC)
Observer	Electrical Engineer	FERC
Observer	Electrical Engineer	FERC

DEC Audit Participants

The DEC staff members that participated in the audit are listed in the following table:

Title	Company
Manager System Operations	DEC
Senior Compliance Specialist	DEC
Senior System Operator	DEC
Director Engineering Standards	DEC
Senior Compliance Specialist	DEC
Senior Coordinator Control Area Operations	DEC
Senior Engineer	DEC
Senior Engineer, Transmission Planning	DEC
Director General Dispatch and Operations	DEC
Manager Telecommunications	DEC
Strategic Business Consultant	DEC
Senior Engineer, Midwest Operations	DEC
Supervisor Substation Operations and Maintenance	DEC
General Manager System Operations	DEC
Senior Engineer, Transmission Planning	DEC
Senior Engineer	DEC
Manager Generation System Protection	DEC
Critical Infrastructure Asset Manager	DEC
Manager Non-Regulated Generation Services	DEC
Manager System Operations	DEC
Director System Operations	DEC
Project Manager, System Operations	DEC
Senior Engineer, Midwest Operations	DEC
Director, Transmission Planning	DEC
Manager System Protection	DEC
Program Manager Compliance	DEC
Senior Engineer, Generation System Protection	DEC
Manager System Operations	DEC
Manager System Operations	DEC
Senior Coordinator Control Area Operations	DEC
Supervisor Vegetation Program Management	DEC
System Protection Engineer	DEC
Senior Compliance Specialist	DEC
Manager of Regulated Generation Compliance & Protective Services	DEC
Director Generation Dispatch and Operations	DEC
Senior System Operator	DEC
Manager, Substation Operations and Maintenance	DEC
Consulting Engineer	DEC

Title	Company
Senior Compliance Specialist	DEC
Director Central Operations	DEC
Senior System Operator	DEC

Audit Results

Although DEC had one open Mitigation Plan at the time of the audit, since the plan was not scheduled for completion until November 30, 2009, the ReliabilityFirst Compliance Enforcement group did not require the audit team to take any action.

After reviewing all of the evidence presented, DEC was found to be compliant with all 135 applicable requirements and all 33 applicable NERC Reliability Standards that apply to the functions it is registered to perform in the ReliabilityFirst Region. DEC was also found to be compliant with the seven applicable requirements of three applicable ReliabilityFirst Standards.

Findings

The following table lists the auditor findings relating to evidence reviewed for compliance with the Reliability Standards within the scope of the compliance audit.

DEC On-site Audit Findings Table

Reliability Standard	Requirement	Finding
CIP-001-1	R1.	Compliant
CIP-001-1	R2.	Compliant
CIP-001-1	R3.	Compliant
CIP-001-1	R4.	Compliant
COM-001-1	R1.	Compliant
COM-002-2	R1.	Compliant
EOP-001-0	R1.	Compliant
EOP-001-0	R2.	N/A
EOP-001-0	R3.	Compliant
EOP-001-0	R4.	Compliant
EOP-001-0	R5.	Compliant
EOP-001-0	R6.	Compliant
EOP-001-0	R7.	Compliant
EOP-002-2	R1.	Compliant
EOP-002-2	R2.	Compliant
EOP-002-2	R3.	Compliant

Reliability Standard	Requirement	Finding
EOP-002-2	R4.	Compliant
EOP-002-2	R5.	Compliant
EOP-002-2	R6.	Compliant
EOP-002-2	R7.	Compliant
EOP-002-2	R9.	Compliant
EOP-003-1	R1.	Compliant
EOP-003-1	R2.	Compliant
EOP-003-1	R3.	Compliant
EOP-003-1	R4.	Compliant
EOP-003-1	R5.	Compliant
EOP-003-1	R6.	Compliant
EOP-003-1	R7.	Compliant
EOP-003-1	R8.	Compliant
EOP-005-1	R1.	Compliant
EOP-005-1	R2.	Compliant
EOP-005-1	R3.	Compliant
EOP-005-1	R4.	Compliant
EOP-005-1	R5.	Compliant
EOP-005-1	R6.	Compliant
EOP-005-1	R7.	Compliant
EOP-005-1	R8.	Compliant
EOP-005-1	R9.	Compliant
EOP-005-1	R10.	Compliant
EOP-005-1	R11.	Compliant
EOP-008-0	R1.	Compliant
FAC-001-0	R1.	Compliant
FAC-001-0	R2.	Compliant
FAC-001-0	R3.	Compliant
FAC-003-1	R1.	Compliant
FAC-003-1	R2.	Compliant
FAC-008-1	R1.	Compliant
FAC-008-1	R2.	Compliant
FAC-008-1	R3.	Compliant
FAC-009-1	R1.	Compliant
FAC-009-1	R2.	Compliant
FAC-014-1	R5.	Compliant
IRO-001-1	R8.	Compliant
IRO-004-1	R3.	Compliant
IRO-004-1	R4.	Compliant
IRO-004-1	R7.	Compliant

Reliability Standard	Requirement	Finding
IRO-005-2	R8.	Compliant
IRO-005-2	R12.	N/A
IRO-005-2	R13.	Compliant
PER-001-0	R1.	Compliant
PER-002-0	R1.	Compliant
PER-002-0	R2.	Compliant
PER-002-0	R3.	Compliant
PER-002-0	R4.	Compliant
PER-003-0	R1.	Compliant
PRC-001-1	R1.	Compliant
PRC-001-1	R2.	Compliant
PRC-001-1	R3.	Compliant
PRC-001-1	R4.	Compliant
PRC-001-1	R5.	Compliant
PRC-001-1	R6.	N/A
PRC-004-1	R1.	Compliant
PRC-004-1	R2.	Compliant
PRC-004-1	R3.	Compliant
PRC-005-1	R1.	Compliant
PRC-005-1	R2.	Compliant
PRC-008-0	R1.	Compliant
PRC-008-0	R2.	Compliant
PRC-017-0	R1.	N/A
TOP-001-1	R1.	Compliant
TOP-001-1	R2.	Compliant
TOP-001-1	R3.	Compliant
TOP-001-1	R4.	Compliant
TOP-001-1	R5.	Compliant
TOP-001-1	R6.	Compliant
TOP-001-1	R7.	Compliant
TOP-001-1	R8.	Compliant
TOP-002-2	R1.	Compliant
TOP-002-2	R2.	Compliant
TOP-002-2	R3.	Compliant
TOP-002-2	R4.	Compliant
TOP-002-2	R5.	Compliant
TOP-002-2	R6.	Compliant
TOP-002-2	R10.	Compliant
TOP-002-2	R11.	Compliant
TOP-002-2	R13.	Compliant

Reliability Standard	Requirement	Finding
TOP-002-2	R14.	Compliant
TOP-002-2	R15.	Compliant
TOP-002-2	R16.	Compliant
TOP-002-2	R17.	Compliant
TOP-002-2	R18.	Compliant
TOP-002-2	R19.	Compliant
TOP-004-1	R1.	Compliant
TOP-004-1	R2.	Compliant
TOP-004-1	R3.	Compliant
TOP-004-1	R4.	Compliant
TOP-004-1	R5.	Compliant
TOP-004-1	R6.	Compliant
TOP-006-1	R1.	Compliant
TOP-006-1	R2.	Compliant
TOP-006-1	R3.	Compliant
TOP-006-1	R4.	Compliant
TOP-006-1	R5.	Compliant
TOP-006-1	R6.	Compliant
TOP-006-1	R7.	Compliant
TOP-007-0	R1.	Compliant
TOP-007-0	R2.	Compliant
TOP-007-0	R3.	Compliant
TOP-008-1	R1.	Compliant
TOP-008-1	R2.	Compliant
TOP-008-1	R3.	Compliant
TOP-008-1	R4.	Compliant
TPL-001-0	R1.	Compliant
TPL-001-0	R2.	Compliant
TPL-001-0	R3.	Compliant
TPL-002-0	R1.	Compliant
TPL-002-0	R2.	Compliant
TPL-002-0	R3.	Compliant
TPL-003-0	R1.	Compliant
TPL-003-0	R2.	Compliant
TPL-003-0	R3.	Compliant
VAR-001-1	R1.	Compliant
VAR-001-1	R2.	Compliant
VAR-001-1	R5.	Compliant
VAR-001-1	R7.	Compliant
VAR-001-1	R8.	Compliant

Reliability Standard	Requirement	Finding
VAR-001-1	R9.	Compliant
VAR-001-1	R10.	Compliant
VAR-001-1	R12.	Compliant
EOP-001-RFC-01	R1.	Compliant
EOP-001-RFC-01	R2.	Compliant
EOP-007-RFC-01	R1.	Compliant
EOP-007-RFC-01	R2.	Compliant
EOP-007-RFC-01	R3.	Compliant
EOP-007-RFC-01	R4.	Compliant
EOP-501-RFC-01	R3.	Compliant

FINAL

Compliance Culture

Duke Energy Corporation provided documentation to demonstrate its compliance to the requirements of the applicable standards. Duke Energy Corporation completed the *Compliance Audit Survey*, *Registered Entity's Internal Compliance Program Survey*, and the documentation section of the NERC Questionnaires and Reliability Standard Audit Worksheets (QRSAW).

Duke Energy Corporation developed its Compliance Administration Program to provide the governance structure to ensure compliance to applicable NERC Standards. Duke has five personnel assigned to the Compliance Administration Program to meet the Duke Energy Corporation NERC standard requirements. They report to the Vice President of Compliance and Integration who reports to the Senior Vice President of Power Delivery who reports to President and Chief Operating Officer. The Vice President of Compliance and Integration, and the Compliance Program Manager has independent access to the CEO and Executive Sponsor Committee. The compliance staff is independent from the departments responsible for performance to the standards.

The Compliance Administration Program staff is responsible for planning and coordinating activities to ensure compliance is integrated into the culture at Duke from the senior-most management level to front line employees. The Compliance Administration Program staff is engaged in internal compliance efforts concerning detection, reporting, and remediation of potential violations with affected business units. The Compliance Administration Program administers internal audits that are currently on a three year cycle.

Duke Energy Corporation uses SharePoint to monitor and track the documentation necessary to demonstrate compliance and makes training material available to the all Duke Energy Corporation employees with compliance responsibility. Duke Energy Corporation conducts training and information sessions concerning the reliability standards and educates personnel on reporting obligations of the standards. Duke Energy Corporation developed a quarterly Compliance Newsletter covering compliance topics. It includes progress on goals related to maintaining the compliance program.

Duke Energy Corporation stated in the *Registered Entity's Internal Compliance Program Survey* that its compliance program is widely distributed across the organization. Duke Energy Corporation included a large number of staff in the opening and closing presentations for the audit and many of its staff presented material to the audit team to demonstrate Duke Energy Corporation compliance to the standards. Duke Energy Corporation provided open access to the subject matter experts and they were knowledgeable in their areas and how the standards related to their area.

The Duke Energy Corporation material submitted for the audit was well organized and complete. The staff was knowledgeable and able to answer the questions asked by the audit team. Duke Energy Corporation staff was able to supply additional evidence of compliance in a timely manner when requested by the audit team. Duke Energy Corporation's quick response to

additional questions is evidence of a comprehensive compliance program and competent, knowledgeable staff.

The training and guidance by corporate management provide strength to the Duke Energy Corporation compliance program.

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