



**Compliance Audit Report  
FERC Order 693 Reliability Standards  
Public Version**

**Sacramento Municipal Utility District**

**NCR05368**

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

**Date of Audit: August 23 – September 3, 2010**

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## Executive Summary

The Western Electricity Coordinating Council (WECC) performed a compliance audit of Sacramento Municipal Utility District (SMUD) NERC ID NCR05368 on August 23 – September 3, 2010. This report covers the Reliability Standards identified in the 2010 Compliance Monitoring and Enforcement Program 2010 Implementation Plan with the exception of the Critical Infrastructure Protection Standards, CIP-002 through CIP-009. A separate report will be prepared for the audit of the CIP Reliability Standards. At the time of the audit, SMUD was registered on the North American Electric Reliability Corporation (NERC) Compliance Registry for the following functions:

Balancing Authority (BA)	Resource Planner (RP)
Distribution Provider (DP)	Transmission Owner (TO)
Generator Owner (GO)	Transmission Operator (TOP)
Generator Operator (GOP)	Transmission Planner (TP)
Load-Serving Entity (LSE)	Transmission Service Provider (TSP)
Planning Authority (PA)	
Purchasing-Selling Entity (PSE)	

The Audit Team evaluated SMUD for compliance with 167 (one hundred sixty-seven) requirements in the NERC Compliance Monitoring and Enforcement Program 2010 Implementation Plan (CMEP IP). Additionally 12 (twelve) requirements in the WECC Regional Reliability Standards were audited. The Audit Team assessed compliance with the NERC Reliability Standards for the period of December 12, 2007 to August 23, 2010. SMUD submitted information and documentation for the Audit Team's evaluation of compliance with the requirements. The Audit Team reviewed and evaluated all information provided by SMUD to assess compliance with standards applicable to SMUD at this time.

Based on the information and documentation provided by SMUD, the Audit Team found SMUD to be compliant with 129 (one hundred twenty-nine) applicable requirements. The Audit Team determined that 38 (thirty-eight) requirements were not applicable to SMUD. SMUD had no Outstanding Violations. The Audit Team also found SMUD compliant with 8 (eight) requirements in the WECC Regional Reliability Standards audited. The Audit Team determined that 4 (four) requirements were not applicable to SMUD. The Audit Team identified no New Possible Violations.

These audit results are further explained in the Audit Results Findings section of this report which includes detailed information of the Audit Team's findings of applicability and compliance for the NERC Reliability Standards, and Applicable WECC Reliability Standards, within the scope of the compliance audit. Any Possible Violations will be

processed through the NERC and WECC CMEP. There were not ongoing or recently completed mitigation plans and therefore none were reviewed by the Audit Team.

The WECC Audit Team lead certifies that the Audit Team adhered to all applicable requirements of the NERC Rules of Procedure (ROP) and Compliance Monitoring and Enforcement Program (CMEP).

### **Audit Process**

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

### **Objectives**

A Registered Entity is subject to audit for compliance with all Reliability Standards applicable to its registered functions.

The audit objectives are to:

- Review compliance with the requirements of Reliability Standards that are applicable to SMUD, based on the functions that SMUD is registered to perform;
- Validate compliance with applicable Reliability Standards from the NERC 2010 CMEP Implementation Plan list of actively-monitored Reliability Standards and any applicable NERC Reliability Standards selected by WECC;
- Validate compliance with applicable Regional Standards from the WECC 2010 CMEP Implementation Plan list of actively monitored standards;
- Validate evidence of self-reported violations and previous self-certifications;
- Observe and document SMUD's compliance program and culture;
- Review the status of mitigation plans.

### **Scope**

The scope of the compliance audit included the NERC Reliability Standards from the WECC CMEP 2010 Implementation Plan. In addition, this audit included any self-reports, self-certifications, outstanding mitigation plans or remedial action directives which have been completed or pending in the year of the compliance audit.

At the time of the audit, SMUD was registered for the functions BA, DP, GO, GOP, LSE, PA, PSE, RP, TO, TOP, TP, TSP. The Audit Team evaluated SMUD for compliance during the period of December 12, 2007 to August 23, 2010.

WECC notified SMUD of the audit on June 18, 2010. WECC informed SMUD that the Audit Team would perform the audit in accordance with the CMEP and the 2010 NERC Compliance Questionnaire and Reliability Standard Audit Worksheets (RSAW). In preparation for the audit, the Audit Team reviewed the RSAWs and other documents submitted by SMUD to evaluate compliance with each applicable Reliability Standard.

### **Confidentiality and Conflicts of Interest**

Confidentiality and Conflict of Interest of the Audit Team are governed under the WECC Delegation Agreement with NERC, and Section 1500 of the NERC Rules of Procedure. SMUD was informed of WECC's obligations and responsibilities under the Delegation Agreement and Rules of Procedure. On June 18, 2010, WECC provided the work history for each Audit Team member to SMUD. SMUD had the opportunity to object to an Audit Team member's participation in the audit on the basis of a possible conflict of interest or because of other circumstances that could interfere with an Audit Team member's impartiality. Section 3.1.5 of the WECC CMEP requires the SMUD to submit any objections no later than fifteen days prior to the start of the audit. SMUD did not submit any objections regarding any Audit Team members. There have been no denials of information or access limitations placed upon this Audit Team by SMUD.

### **Methodology**

The Audit Team reviewed the information, data, and evidence submitted by SMUD and assessed compliance with requirements of the applicable Reliability Standards. Submittals of information and requests for data were sent to SMUD at least thirty days before the scheduled date of the audit. Additional information relevant to the audit could be submitted until the last day of the review at the audit site. After that date, only data or information which was relevant to the content of the report or its findings can be submitted upon agreement by the Audit Team lead.

The Audit Team requested and received additional information and sought clarification from subject matter experts during the audit. The Audit Team issued 43 (forty-three) additional data requests as part of this effort.

The Audit Team reviewed documentation provided by SMUD. Data, information and evidence submitted in the form of policies, procedures, emails, logs, data sheets, etc., was validated, substantiated and cross checked for accuracy as appropriate. Where sampling is applicable to a requirement, the sample set is determined by a statistical methodology augmented with professional judgment to ensure that the sample set is representative of the requirement's significance to the reliability of the Bulk Electric System (BES).

Findings were based on the Audit Team's knowledge of the BES, the NERC Reliability Standards and team members' professional judgment. All findings were developed based on the consensus of the Audit Team.

### Company Profile

The Sacramento Municipal Utility District (SMUD) is the nation's sixth-largest community owned electric utility. SMUD is governed by a seven-member Board of Directors and currently provides electric service to approximately 595,000 customers with a summer peak load of 3,299 MW (July 24, 2006). The peak load within the metered boundaries of the SMUD Balancing Authority Area is 4906 MW, also occurring on July 24, 2006.

The SMUD Balancing Authority area includes the 900-square-mile service area of Sacramento County and a small portion of Placer County in California, as well as up to the California-Oregon Border, and as far south as Modesto, California.

Total generation within the SMUD area is approximately 1826 MW.

#### SMUD operated Voltage levels and Circuit Miles as a Balancing Authority

Voltage Level	Circuit Miles
500 kV	288
230 kV	1231
115 kV	68

#### SMUD operated Voltage levels and Circuit Miles as a Transmission Operator

Voltage Level	Circuit Miles
230 kV	386
115 kV	59

#### SMUD Adjacent Entities

Adjacent Entity	Function
Vancouver Reliability Coordination Center (VRCC)	Reliability Coordinator
California Independent System Operator (CISO)	Balancing Authority Transmission Operator
Bonneville Power Administration (BPA)	Balancing Authority Transmission Operator
Turlock Irrigation District (TID)	Balancing Authority Transmission Operator
Pacific Gas and Electric (PG&E)	Transmission Operator

Western Area Power Administration – Sierra Nevada Region (WAPA-SNR)	Transmission Operator
Modesto Irrigation District (MID)	Transmission Operator

## Audit Participants

The following is a list of WECC Audit Team members and SMUD personnel who participated in the audit.

### Audit Team Members

Audit Team Role	Title	Company
Audit Team Lead	Senior Compliance Engineer	WECC
Member	Senior Compliance Engineer	WECC
Member	Consultant	WECC
Member	Consultant	WECC
Member	Consultant	WECC
Member	Consultant	WECC
Observer	Vice President of Compliance	WECC
Observer	Regional Assurance and Oversight Auditor	NERC
Observer	FERC Office of Reliability	FERC
Observer	FERC Office of Reliability	FERC
Observer	FERC Office of Enforcement	FERC
Observer	FERC Office of Enforcement	FERC

### SMUD Audit Participants

Title	Company
Manager, Reliability Compliance and Coordination	SMUD
Chief Officer, Legislative and Regulatory Affairs	SMUD
Regulatory Compliance Analyst	SMUD
Reliability Compliance Engineer	SMUD
Reliability Compliance Engineer	SMUD
Supervisor Quality Engineer	SMUD
Power Gen Electrical Engineer	SMUD
Supervisor, System Protection and Control	SMUD
Supervisor, System Engineering	SMUD
Supervisor Engineering	SMUD
Supervisor, Telecom Engineering	SMUD
Regulatory Coordinator Generation	SMUD

<b>Title</b>	<b>Company</b>
Regulatory Compliance Coordinator	SMUD
Supervisor, Grid Planning	SMUD
Grid Planning	SMUD
Supervisor, Power Operations Engineering	SMUD
Distribution Services	SMUD
PSO Training Instructor	SMUD
PSO Training Supervisor	SMUD
Power System Operator II	SMUD
Principal Operations Engineer	SMUD
Operations Engineer	SMUD
Supervisor, EMS	SMUD
Attorney	SMUD
Engineering Designer III	SMUD

## Audit Results

The Audit Team evaluated SMUD for compliance with 167 (one hundred sixty-seven) requirements in the NERC Compliance Monitoring and Enforcement Program 2010 Implementation Plan (CMEP IP). Additionally 12 (twelve) requirements in the WECC Regional Reliability Standards were audited. The Audit Team assessed compliance with the NERC Reliability Standards for the period of December 12, 2007 to August 23, 2010. SMUD submitted information and documentation for the Audit Team's evaluation of compliance with requirements. The Audit Team issued 43 (forty-three) additional data requests as part of this effort. The Audit Team reviewed and evaluated all information provided by SMUD to assess compliance with standards applicable to SMUD at this time.

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## Findings

The following table details the findings of compliance within the scope identified for this audit.

The Finding column may contain any one of the following: Compliant, New Possible Violation, Not Applicable, Outstanding Violation, Retraction Requested, Self-Reported Violation, or other appropriate description.

<b>Reliability Standard</b>	<b>Req.</b>	<b>Finding</b>
BAL-STD-002-0	WR1.	Compliant
BAL-002-0	R1.	Compliant
BAL-002-0	R2.	Not Applicable
BAL-002-0	R3.	Compliant
BAL-003-0.1b	R1.	Compliant
BAL-003-0.1b	R2.	Compliant
BAL-003-0.1b	R5.	Compliant
BAL-004-WECC-1	R1.	Compliant
BAL-004-WECC-1	R2.	Compliant
BAL-004-WECC-1	R3.	Compliant
BAL-004-WECC-1	R4.	Compliant
BAL-005-0.1b	R2.	Compliant
BAL-005-0.1b	R10.	Compliant
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-001-1	R5.	Compliant
COM-002-2	R1.	Compliant
COM-002-2	R2.	Compliant
EOP-001-0	R1.	Compliant
EOP-002-2	R1.	Compliant
EOP-002-2	R2.	Compliant
EOP-002-2	R3.	Compliant
EOP-002-2	R4.	Compliant
EOP-002-2	R5.	Compliant
EOP-002-2	R6.	Compliant
EOP-002-2	R7.	Compliant
EOP-002-2	R8.	Not Applicable
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	R9.	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-002-0	R1.	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-010-2	R2.	Compliant
FAC-014-2	R5.	Compliant
IRO-001-1.1	R3.	Not Applicable
IRO-001-1.1	R7.	Not Applicable
IRO-001-1.1	R8.	Compliant
IRO-001-1.1	R9.	Not Applicable
IRO-004-1	R1.	Not Applicable
IRO-004-1	R2.	Not Applicable
IRO-004-1	R3.	Not Applicable
IRO-004-1	R4.	Compliant
IRO-004-1	R5.	Not Applicable
IRO-004-1	R6.	Not Applicable
IRO-004-1	R7.	Compliant
IRO-005-2	R1.	Not Applicable

IRO-005-2	R2.	Not Applicable
IRO-005-2	R3.	Not Applicable
IRO-005-2	R4.	Not Applicable
IRO-005-2	R5.	Not Applicable
IRO-005-2	R7.	Not Applicable
IRO-005-2	R8.	Compliant
IRO-005-2	R9.	Not Applicable
IRO-005-2	R10.	Not Applicable
IRO-005-2	R11.	Not Applicable
IRO-005-2	R12.	Compliant
IRO-005-2	R13.	Compliant
IRO-005-2	R14.	Compliant
IRO-005-2	R15.	Not Applicable
IRO-005-2	R16.	Not Applicable
IRO-005-2	R17.	Not Applicable
IRO-STD-006-0	WR1.	Compliant
IRO-006-4	R1.	Not Applicable
IRO-006-4	R3.	Not Applicable
IRO-006-4	R4.	Not Applicable
IRO-006-4	R5.	Compliant
NUC-001-2	R1.	Not Applicable
NUC-001-2	R2.	Not Applicable
NUC-001-2	R3.	Not Applicable
NUC-001-2	R4.	Not Applicable
NUC-001-2	R5.	Not Applicable
NUC-001-2	R6.	Not Applicable
NUC-001-2	R7.	Not Applicable
NUC-001-2	R8.	Not Applicable
NUC-001-2	R9.	Not Applicable
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.	Compliant
PRC-004-1	R1.	Compliant
PRC-004-1	R2.	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.	Compliant
PRC-STD-001-1	WR1.	Not Applicable
PRC-STD-003-1	WR1.	Not Applicable
PRC-STD-005-1	WR1.	Not Applicable
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	R11.	Compliant
TOP-002-2	R13.	Compliant
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-003-0	R1.	Compliant
TOP-003-0	R2.	Compliant
TOP-003-0	R3.	Compliant
TOP-003-0	R4.	Not Applicable
TOP-004-2	R1.	Compliant
TOP-004-2	R2.	Compliant
TOP-004-2	R4.	Compliant

TOP-004-2	R5.	Compliant
TOP-006-1	R2.	Compliant
TOP-006-1	R6.	Compliant
TOP-006-1	R7.	Compliant
TOP-007-0	R1.	Compliant
TOP-007-0	R2.	Not Applicable
TOP-007-0	R3.	Not Applicable
TOP-007-0	R4.	Not Applicable
TOP-008-1	R1.	Compliant
TOP-008-1	R2.	Compliant
TOP-008-1	R3.	Compliant
TOP-STD-007-0	WR1.	Not Applicable
TPL-001-0.1	R1.	Compliant
TPL-002-0	R1.	Compliant
TPL-003-0	R1.	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
VAR-001-1	R9.	Compliant
VAR-001-1	R10.	Compliant
VAR-001-1	R12.	Compliant
VAR-STD-002a-1	WR1.	Compliant
VAR-STD-002b-1	WR1.	Compliant

### **Compliance Culture**

Information pertaining to the compliance culture of SMUD can be found in the Internal Compliance Survey.

### **Exit Briefing**

To conclude the audit, the Audit Team leader gave a PowerPoint presentation for SMUD's personnel summarizing the Audit Team's preliminary findings. The Audit Team leader also explained the next steps in the audit process and how WECC handles possible violations under the CMEP.

**In Accordance with WECC CMEP Section 3.1.6:**

WECC provided the draft of this audit report and an Entity Comment Form to SMUD on September 20, 2010 for review and comment. On September 30, 2010, SMUD provided comments. The Entity Comment Form on file in the WECC Compliance Department provides a record of these comments and WECC's consideration of them for inclusion in this final report.

**Management Approval**

This report was reviewed and approved by John McGhee, WECC Director of Compliance Audits and Investigations on October 4, 2010.