

**Final Audit Report
For Compliance with
NERC Reliability Standards**

GEUS

Audit Date: August 17, 2007

Public Version

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Executive Summary

GEUS is registered as a Distribution Provider (DP) within the Texas Regional Entity (Texas RE). Only one 2007 Actively Monitored NERC Standard is applicable to GEUS because GEUS has no transmission voltages higher than 69 kV and has no under voltage Load Shedding. GEUS was found compliant with the NERC Reliability Standard on under frequency relaying system maintenance that was reviewed. Additional standards may be applicable in the future.

Audit Process (NERC)

The compliance audit process steps are detailed in the [NERC CMEP](#).

Audit Objectives

The audit is designed to verify that all NERC Criteria are met and documented as appropriate for the entity's registration. This audit focused on transmission-related standards only.

Scope

The scope of this compliance audit is inclusive of all requirements of the NERC Standards that are actively monitored for 2007 that apply to this entity's transmission or distribution-related role.

Methodology

The audit was performed by members of the Texas RE. The list of actively monitored NERC Standards for 2007 was sent to GEUS in advance. There were also Reliability Standards Audit Worksheets (RSAW) documents sent to help provide a structure of what the audit team would be looking for during the site audit. During the on site audit, management personnel were interviewed to answer or clarify questions that the audit team had regarding the responses to the questionnaire. The Texas RE audit team interviewed additional appropriate personnel to substantiate that operations personnel are trained and capable of following the criteria to ensure reliable operations from the entity.

An exit briefing was conducted as a forum for the audit team to offer informational recommendations for consideration in future audits. These recommendations are not included in this audit report. The audit team shared its preliminary results verbally with the entity during the exit briefing.

Company Profile

GEUS serves Greenville's 23,071 residents through 11,867 meters, 32 miles of transmission line, 500 miles of overhead distribution line, and 53 miles of underground distribution line, supplying 476,907 megawatt hours of electrical power annually. Peak demand is 105 megawatts. GEUS is in a partnership with Bryan, Garland, and Denton in the Texas Municipal Power Association (TMPA), which gives GEUS access to electricity produced at the large coal generation plant in Grimes County, Texas (near Bryan). However, operation of TMPA transmission is currently handled by Garland. GEUS also operates a natural gas-fired steam generator plant in north

Greenville and produces, buys, and sells power for use in Greenville and for sale on the open market.

Audit Specifics

The audit was conducted on **August 17, 2007** at the City of Greenville operations office in Greenville, Texas. The attendance list was as follows:

Audit Team:

Audit Team Role	Name	Title	Company
Lead	Robert Potts	Sr. Reliability Analyst	Texas RE
Member	Frank Vick	Reliability Analyst	Texas RE

GEUS Audit Participants:

Name	Title
Alan Crane	Sr. Electrical Engineer
George Guthrie	Substation Supervisor
Allen McTavish	T & D Supervisor
Rickey Gillean	Power Mkt. Manager

Audit Results

Findings

The Compliance Audit Team found that GEUS was compliant with the applicable 2007 actively monitored NERC Standard at the time of the audit.

Reliability Standard	Auditor Notes	Finding
PRC-004-1	No transmission voltages greater than 69kV; owns no transmission protection system qualifying for review	N/A
PRC-005-1	No transmission voltages greater than 69kV; owns no transmission protection system qualifying for review	N/A
PRC-008-0	Copies of relay maintenance & test reports were provided and it was evident that all UFLS relays had been tested in 2007 and were scheduled to be retested within their prescribed 48 month interval. Documents show UFLS relays, location, manufacturer, type, last test & maintenance date and next scheduled test & maintenance date (48 month interval)	Compliant
PRC-010-0	GEUS does not have under voltage Load Shedding	N/A
PRC-011-0	GEUS does not have under voltage Load Shedding	N/A
PRC-016-0	Owns no Special Protection Systems	N/A
PRC-017-0	Owns no Special Protection Systems	N/A
PRC-021-1	GEUS does not have under voltage Load Shedding	N/A

Conclusions

GEUS was found compliant with the reviewed NERC Reliability Standard.

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Summary of Response to the Audit Findings

The Audit Team Leader expects to hear back from GEUS regarding the findings and details of this report as to whether or not they agree with the assessments made in this report. GUES had no response regarding the audit findings and the draft audit report.

Appendix 1 — 2007 Actively Monitored Applicable Reliability Standards

Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to GEUS? Yes or No
BAL-001-0	All	Real Power Balancing Control Performance	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.	N
BAL-002-0	All	Disturbance Control Performance	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.	N
BAL-003-0	All	Frequency Response and Bias	BA	This standard provides a consistent method for calculating the Frequency Bias component of ACE.	Yearly or by request.	N

Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to GEUS? Yes or No
CIP-001-1	All	Sabotage Reporting	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.	N
CIP-002-1 through CIP-009-1	All	Critical Infrastructure Protection Standards	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.	N
COM-001-1	R2 and R5	Telecommunications	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.	N
EOP-001-0	All	Emergency Operations Planning	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.	N
EOP-003-1	All	Load Shedding Plans	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	N

Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to GEUS? Yes or No
EOP-005-1	All	System Restoration Plans	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.	N
EOP-006-1	All	Reliability Coordination – System Restoration	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.	N
EOP-008-0	All	Plans for Loss of Control Center Functionality	BA, RC, TOP	Each reliability entity must have a plan to continue reliability operations in the event its control center becomes inoperable.	By request.	N
EOP-009-0	All	Documentation of Blackstart Generating Unit Test Results	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.	N
FAC-003-1	All	Vegetation Management	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.	N
FAC-008-1	All	Facility Ratings Methodology	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.	N

Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to GEUS? Yes or No
FAC-009-1	All	Establish and Communicate Facility Ratings	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.	N
IRO-001-1	All	Reliability Coordination – Responsibilities and Authorities	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.	N
IRO-004-1	All	Reliability Coordination — Operations Planning	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.	N

Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to GEUS? Yes or No
IRO-014-1	All	Procedures, Processes, or Plans to Support Coordination Between Reliability Coordinators	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.	N
IRO-015-1	All	Notifications and Information Exchange Between Reliability Coordinators	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.	N
IRO-016-1	All	Coordination of Real-time Activities Between Reliability Coordinators	RC	that they will not have an Adverse Reliability Impact on other Reliability Coordinator Areas	Rolling 12 months of information provided on request.	N
PER-002-0	All	Operating Personnel Training	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.	N
PER-003-0	All	Operating Personnel Credentials	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.	N
PER-004-1	All	Reliability Coordination — Staffing	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.	N

Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to GEUS? Yes or No
PRC-004-1	All	Analysis and Mitigation of Transmission and Generation Protection System Misoperations	DP*, GO, TO	Provide trip operation / misoperation information per regional process.	By request – last 12 months of protection system Misoperation analysis.	N
PRC-005-1	All	Transmission and Generation Protection System Maintenance and Testing	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.	N
PRC-008-0	All	Implementation and Documentation of Underfrequency Load Shedding Equipment Maintenance Program	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.	Y
PRC-010-0	All	Technical Assessment of the Design and Effectiveness of Undervoltage Load Shedding Program.	DP, LSE, TO, TOP	ASSESS design and effectiveness of UVLS programs	By request – current assessment.	N
PRC-011-0	All	UVLS System Maintenance and Testing	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.	N
PRC-016-0	All	Special Protection System Misoperations	DP, GO, TO	DOCUMENT/analyze misoperations	By request – last 12 months of special protection system Misoperation analysis.	N
PRC-017-0	All	Special Protection System Maintenance and Testing	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.	N
PRC-021-1	All	Under-Voltage Load Shedding Program Data	DP, TO	DOCUMENTATION of undervoltage load shedding program	By request – latest UVLS data.	N

Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to GEUS? Yes or No
TOP-003-0	All	Planned Outage Coordination	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.	N
TOP-004-1	R6	Transmission Operations	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.	N
TOP-005-1	All	Operational Reliability Information	BA, PSE, RC, TOP	To ensure reliability entities have the operating data needed to monitor system conditions within their areas.	By request.	N
TOP-007-0	All	Reporting System Operating Limit (SOL) and Interconnection Reliability	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.	N
TPL-001-0	All	System Performance Under Normal (No Contingency) Conditions	PA, TPL	System performance under normal conditions	By request – latest annual assessment.	N
TPL-002-0	All	System Performance Following Loss of a Single Bulk Electric System Element	PA, TPL	System performance under single contingency	By request – latest annual assessment.	N
TPL-003-0	All	System Performance Following Loss of Two or More Bulk Electric System Elements	PA, TPL	System performance under multiple contingencies	By request – latest annual assessment.	N

Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to GEUS? Yes or No
TPL-004-0	All	System Performance Following Extreme Events Resulting in the Loss of Two or More Bulk Electric System Elements	PA, TPL	System performance under extreme contingencies	By request – latest annual assessment.	N
VAR-001-1	All	Voltage and Reactive Control	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.	N

Appendix 2 — Confidential: Security Sensitive Information

No confidential or security sensitive information has been provided by GEUS or has been included in this report.