



Compliance Audit Report Public Version

**Alabama Electric Cooperative, Inc.
(NCR01164)
November 29, 2007**

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

December 17, 2007

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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.

Alabama Electric Cooperative, Inc. (AEC) was audited on November 29, 2007 for compliance with the requirements contained in NERC Reliability Operating Standards that are currently enforceable and apply to AEC's operation. This audit focused on documents and other evidence provided to SERC by the staff of AEC, and did not include any evidence obtained through system observation or inspection. The findings of the audit are based on the state of compliance at the time of the audit, and do not reflect past compliance activities or activities that will be completed in the future.

The audit was conducted by asking AEC staff to show valid evidence of meeting each individual requirement and sub-requirement contained in the 19 operating standards that had been previously identified by SERC to AEC as subject to this audit. AEC staff would then cite specific portions of the evidence that demonstrated compliance. This evidence and the citations were documented and evaluated by the audit team for the level of compliance and agreement with the requirement. If all of the requirements and sub-requirements of an audited standard were met, then AEC was judged to be compliant. Likewise, if any of the requirements or sub-requirements were not fully met, then AEC was judged to have a possible violation of the standard. In other words, only a score of 100% is identified as compliant; 99% and below is a possible violation.

Evidence provided by AEC demonstrated compliance with all 19 audited operating standards.

AUDIT PROCESS

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 AEC compliance with the requirements of the reliability standards that are applicable to AEC based on the AEC's registered functions.
- Validate compliance with applicable reliability standards from the NERC 2007 Implementation Plan list of actively monitored standards.

Scope

The scope of the audit of AEC was to look at all applicable operating-related standards in the NERC 2007 Compliance Monitoring and Enforcement Plan. AEC is registered with SERC as a Balancing Authority, Transmission Owner, Transmission Service Provider, Transmission Operator, Transmission Planner, Resource Planner, Generator Owner, Generator Operator, Load-Serving Entity, Purchasing and Selling Entity and Planning Authority.

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

SERC sometimes audits planning-related and operating-related standards at different times to minimize impact on entity staff, and to recognize the somewhat seasonal availability of different staff groups. Operating Audits are generally held in the spring and fall of the year, and planning audits held in the middle of the year. Of the 35 operating standards that apply to AEC, 19 were selected for review in this audit.

Note: For the 2007 compliance program, the monitoring period for the compliance audit will be the past 12 months or periods specified in individual reliability standards. The monitoring period is not limited to the time period for which penalties and sanctions are assessed.

Methodology

The audit was conducted by reviewing all of the standards that apply to AEC in the NERC 2007 Compliance Monitoring and Enforcement Program that pertain to system operations. The audit was scheduled during normal business hours and standards were grouped to minimize imposition and make the most efficient use of AEC staff's time. AEC's staff had been briefed on the standards that were to be addressed so that documentation and evidence of compliance could be assembled.

The audit group was divided into two separate teams of three auditors. Each audit team had a moderator who would initiate dialogue on each standard requirement and request evidence of compliance. A second auditor served as a scribe to document the evidence presented, staff responses, and auditor comments. The entire audit team reviewed the evidence and questioned AEC staff to obtain sufficient understanding of the evidence and processes to enable a determination of compliance with standard requirements. This process was used to determine compliance with each individual requirement and sub-requirement of the 19 standards that had been previously identified by SERC to AEC as subject to this audit. AEC staff responded by providing evidence in the form of reports, procedures, policies, studies and other documents. AEC staff would then cite specific portions of the evidence that demonstrated compliance. This evidence and the citations were documented and evaluated by the audit team for the level of compliance and agreement with the requirement. Discrepancies between the requirement and the evidence provided were the subject of dialogue among the team members and AEC staff members until it could be agreed that each requirement was met by the cited evidence or other evidence offered. If it was felt that, after all evidence had been presented and discussed, AEC did not have sufficient evidence to support a finding of compliance, a possible violation was identified by the team and AEC staff.

Company Profile

AEC is a generation and transmission (G&T) cooperative headquartered in Andalusia, Alabama. AEC generates and transmits electricity at wholesale rates for its 20 member-owners in 39 counties in Alabama and 10 in northwest Florida. AEC member-owners consist of 12 Alabama distribution cooperatives, 4 Florida distribution cooperatives and 4 Alabama municipal systems that sell electricity at retail rates to their member-consumers.

AEC is a cooperative form of business, owned by its member-owners. The member-owners govern and set policy for AEC through a 40 member board of trustees, which includes 2 voting

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delegates from each of its 20 member-owners. The day-to-day management of AEC is carried out by the President and Chief Executive Officer and his staff.

Alabama Electric Cooperative, Inc. is a Touchstone Energy© cooperative that promotes cooperative strengths and the benefits of cooperative membership. Touchstone Energy© symbolizes the basic values in which cooperatives were founded more than 60 years ago – integrity, accountability, innovation and community spirit.

AEC owns and operates 2,214 miles of transmission, consisting of 230 kV, 115 kV and 46 kV. There are 183 miles of 230 kV line, 1,350 miles of 115 kV line and 681 miles of 46 kV line. There are 283 substations included in the AEC system.

AEC serves approximately 397,129 customers. AEC is normally a winter-peaking system, with a 2006 peak load of 1,939 MW and an all-time peak of 2,097 MW occurring in 2003.

AEC's company-owned generation assets have a total capacity of 1,666 MW summer and 1,724 MW winter. AEC's generation assets have a diversified fuel mix and consist of the following facilities:

- Lowman Plant – base load, coal-fired plant with two 238 MW units and one 80 MW unit,
- Vann Plant (CC) – natural gas-fired, combined cycle plant with two combustion turbine units and one steam unit,
- McIntosh Plant (CT) – two natural gas/oil-fired combustion turbines, and one natural gas/oil/compressed air energy storage unit,
- McWilliams Plant (CC) – one natural gas/oil-fired combustion turbine and three steam turbines,
- AEC has 8% ownership in Alabama Power Company's plant Miller, a coal-fired, base load plant, and
- Five hydro units totaling 8 MW of output.

Audit Specifics

The compliance audit was conducted on November 29, 2007 at the Alabama Electric Cooperative, Inc. office in Andalusia, Alabama.

Audit Team

Audit Team Role	Name	Title	Company
Audit Team Leader	Sam Stryker	Senior Compliance Auditor	SERC
Member	Bob Goss	Manager of Compliance Audits	SERC
Member	Mike Vastano	Compliance Auditor	SERC
Member	James Harrell	Compliance Auditor	SERC
Member	Jason Marshall	Technical Manager, Standards Compliance & Strategy	MISO
Member	Earl Shockley	NERC Regional Compliance Oversight	NERC

AUDIT RESULTS

The audit began at 8:08 a.m., November 29, 2007 with a welcome by Ken Skroback, Vice President, Bulk Power and Delivery, followed by an opening presentation by Sam Stryker, SERC Senior Auditor and Audit Team Leader. He reviewed the NERC Compliance Monitoring and Enforcement Program for 2007 in general, and how it applied to AEC specifically. He introduced and reviewed the standards to be covered in the audit, and addressed both the expectations of AEC's staff and the quality of evidence to be presented. He also covered the basic procedure for the audit, and the rules of conduct. Each member of the audit team was introduced and professional affiliations identified. The opening presentation was followed by an introduction of participating AEC staff, an overview of AEC's operations, corporate organization and compliance activities by Tim Hattaway, Energy Control Manager.

The audit team and AEC subject matter experts split into two separate audit teams and the audit began at 8:45 a.m. The audit team initially reviewed the registration status of AEC with AEC staff to verify application of each standard. Each standard's audit began with a recitation of each requirement and an explanation, if requested by AEC. AEC staff would then present evidence of meeting this requirement, or cite evidence in material already presented to the team. At that point, the evidence was reviewed and dialogue took place until the team reached a point of satisfaction with the evidence. Consensual approval or concern was reached on each of the requirements and explained to AEC staff before proceeding to the next requirement. At that point, the team scribe would record the evidence presented to satisfy the requirement and the team's recommendation on that requirement using the Reliability Standard Auditor Worksheet (RSAW).

After completing a review of all applicable requirements in the standard, the overall compliance to that standard was reviewed first by the audit team and AEC staff, and then by the Audit Team Leader. Any concerns or dissention with the recommendation was offered, and the Audit Team Leader would indicate support or disagreement with the recommendation. Dialogue would ensue to the point of decision on the part of the Audit Team Leader. Following this review, the RSAW would be updated with the compliance recommendation.

The review of all applicable standards was completed at approximately 3:15 p.m. The audit teams collected all notes and evidence, as needed, and began to finalize the RSAWs. At approximately 3:30 p.m., both audit teams met to review and discuss the findings. The Audit Team Leader began to develop the Exit Briefing with the help of all team members, by using a projector connected to his laptop. This facilitated the consensus of the full team on the content of the Exit Briefing, and re-affirmed the team's findings and recommendations.

The Exit Briefing was presented to the assembled Audit Team and AEC staff at approximately 4:30 p.m., November 29, 2007 and was followed by an informal response from AEC staff. The Audit Team Leader solicited both informal comments from the AEC staff, and requested that they fill out formal feedback forms for submission to SERC and NERC. The Audit Team left AEC's offices at approximately 4:50 p.m., November 29, 2007.

Findings

Reliability Standard	Auditor Notes	Finding
BAL-001-0	<p>R1 - NERC CPS Reports Sept 2006 thru Sept 2007 CPS2Bounds_2006.pdf, dated 1/31/06 CPS2Bounds_2007.pdf, dated 1/21/07 AEC demonstrated compliance with R1.</p> <p>R2 - NERC CPS Reports Sept 2006 thru Sept 2007 CPS2Bounds_2006.pdf, dated 1/31/06 CPS2Bounds_2007.pdf, dated 1/21/07 AEC currently registered as a BA, TO, TSP, TOP, TP, and RP. AEC demonstrated compliance with R2.</p> <p>R3 - N/A AEC does not provide overlap regulation service.</p> <p>R4 - N/A AEC does not provide overlap regulation service. AEC, currently registered as a BA, TO, TSP, TOP, TP, RP, GO, GOP, LSE, PSE, and PA, has provided evidence as cited that support a recommended finding of compliance. This recommendation is the unanimous position of the audit team.</p>	Compliant
BAL-002-0	<p>R1 - DCS Recovery Document, page1, rev 1, dated 4/25/07. Procedure: Generation Net Dependable Capacity by Unit pages 1 and 2, rev 1, dated 2/26/07. AEC demonstrated compliance with R1.</p> <p>R2 - N/A for AEC as registered</p> <p>R3 - DCS Recovery Document, page1, rev 1, dated 4/25/07 SERC DCS QTR4 2006.pdf SERC DCS QTR1 2007.pdf SERC DCS QTR2 2007.pdf SERC DCS QTR3 2007.pdf AEC demonstrated compliance with R3.</p> <p>R4 - DCS Recovery Document, page1, rev 1, dated 4/25/07 Screenshots of Events 04/10/2007, 07/01/2007, 08/09/2007, 08/30/2007, 09/05/2007. AEC demonstrated compliance with R4.</p> <p>R5 - N/A, AEC is not part of a Reserve Sharing Group.</p> <p>R6 - DCS Recovery Document, page1, rev 1, dated 4/25/07 Reserves display screen shot. AEC demonstrated compliance with R6. AEC, currently registered as a BA, TO, TSP, TOP, TP, RP, GO, GOP, LSE, PSE, and PA has provided evidence as cited that support a recommended finding of compliance. This recommendation is the unanimous position of the audit team.</p>	Compliant

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Reliability Standard	Auditor Notes	Finding
BAL-003-0	<p>R1 - Frequency Bias Request 12_28_2006 e-mail, 12:01pm. Pages from 2006 AEC LF—Historical and Projected System Peak Demand and energy, dated 12/28/06. CPS2Bounds_2006.pdf, dated 12/31/06 CPS2Bounds_2007.pdf, dated 12/31/07 AEC demonstrated compliance with R1.</p> <p>R2 - N/A, AEC uses 1% Forecasted Peak Demand as a bias setting. AEC demonstrated compliance with R2.</p> <p>R3 - Procedure: AGC-Tie Line Bias Operation, rev 0, dated 4/19/06, reviewed 2/26/07 AEC demonstrated compliance with R3.</p> <p>R4 - AEC does not include Miller Units in frequency Bias calculation, see R2 above. The Miller Unit is in SoCo control area and AEC uses fixed schedules. AEC demonstrated compliance with R4.</p> <p>R5 - See R2 above. Pages from 2006 AEC Load Forecast. CPS2Bounds_2006.pdf, dated 12/31/06 CPS2Bounds_2007.pdf, dated 12/31/07 AEC demonstrated compliance with R5</p> <p>R6 - N/A, AEC does not perform overlap regulation service. AEC currently registered as a BA, TO, TSP, TOP, TP, RP, GO, GOP, LSE, PSE, and PA has provided evidence as cited that support a recommended finding of compliance. This recommendation is the unanimous position of the audit team.</p>	Compliant

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Reliability Standard	Auditor Notes	Finding
CIP-001-1	<p>R1 - Procedure: Recognizing & Report Sabotage Events, Rev 1, 5/7/07, page 1, Process section, paragraphs 1 and 2, identifies recognition. Approved by Tim, but not identified on procedure.</p> <p>Emergency Response Flowchart (Generation) is used for procedure, R1, 10/3/07, process and notifications.</p> <p>Procedure: Recognizing & Report Sabotage Events, Rev 1, 5/7/07, page 1, Process section, Next to last sentence in 2nd paragraph, identifies use of SERC Hotline to make notifications of multi-site events.</p> <p>AEC Cyber Security Incident Response Plan (pg 2 & 3), Rev 0, 5/10/06, provides Cyber Security Incident Response Plan. Approval signatures 5/24/07.</p> <p>AEC demonstrated compliance with R1.</p> <p>R2 - Procedure: Recognizing & Report Sabotage Events, Rev 1, 5/7/07, page 1, provides contact information including Reliability Coordinator.</p> <p>Emergency Response Flowchart (Generation) provides notification to Central Generation Plant Management and Corporate Management.</p> <p>AEC Cyber Security Incident Response Plan (pg 2 & 3), page 3, Incident Reporting Process Section, identifies reporting requirements for Cyber Security Incidents.</p> <p>AEC demonstrated compliance with R2.</p> <p>R3 - Procedure: Recognizing & Report Sabotage Events, Rev 1, 5/7/07, page 1, provides procedures and guidelines. Document is also maintained in Control Room, on control desk.</p> <p>Emergency Response Flowchart (Generation) is posted on Control Room Operators desk at generating stations.</p> <p>AEC demonstrated compliance with R3.</p> <p>R4 - Printout from FBI Mobile, Alabama website providing contact information for five local FBI offices.</p> <p>FBI Contact Data Sheet Record (Tim Hattaway, ECC Mgr) indicating contact of Mobile office on 4/11/06, where he was referred to website for contact information. Also, Contacted Mobile and Dothan Office, 10/3/07. Spoke with Agent Scarobough Dothan, indicated that Mobile office may be contacted for any event.</p> <p>AEC demonstrated compliance with R4.</p>	Compliant
CIP-002-1 through CIP-009-1	Applies to AEC as registered, but not assessed during this Operating audit.	Not Assessed

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Reliability Standard	Auditor Notes	Finding
COM-001-1	<p>R1 - Telecommunication Network Overview (PPT) and citations by Chad Jenkins: Internal – Fiber Core, Microwave Backbone and Telemetry Radio. Public Infrastructure – frame relay and VSAT Satellite. Dynamic Routing Master Telemetry Nodes. Backup Control Center Support – Independent routes w/loop protection. Bypass T1 as backup to generating stations. Microwave hooked to point-to-point radio, fiber optics and frame relay with router and firewalls to microwave. VSAT remotes are updated to IP with frame relay backup. Survalent Telecom NMS with logging and alarm capabilities. Operators have EMS system alarms of communications failures. Survalent provides full alarm failure notifications. Satellite, frame relay, microwave, for internal communications. Also have Satellite telephones and cell phone alternates, with both internal and RC communications. AEC demonstrated compliance with R1.</p> <p>R2 - Demonstrated complete monitoring and alarming capabilities with Network Management Systems, pages 9, 10 and 11. Also have alarming to control rooms for problem indication. Reviewed AEC Microwave System maintenance and testing record for 11/26/07 for Gantt Microwave tower. Reviewed 10/07 Communications Test, 10/30/07, of cooperative communications systems; includes emergency systems. Page 3 provided communications test procedures. AEC demonstrated compliance with R2.</p> <p>R3 - Chad Jenkins participates in SERC Telecom Subcommittee. SERC Telecommunications Subcommittee Meeting Roll Call of meeting on 3/9/07. Security Coordinator Operating Committee Meeting Notes, 2/23-24/06 Security Coordinator Operating Committee Meeting's Satellite Phone agreement. AEC demonstrated compliance with R3.</p> <p>R4 - Procedure: Telecommunications - Emergency Communication (pg 1), rev 2, 2/26/07, Protocol section indicates that English will be the official language. AEC demonstrated compliance with R4.</p> <p>R5 - Procedure: Telecommunications - Emergency Communication, R2, 2/26/07, page 1 – process, procedure and sequence of use of various communications systems. AEC demonstrated compliance with R5.</p>	Compliant
EOP-001-0	<p>R1 - BA Operating Agreement Between SCS & AEC, Section 2.1, page 3, and section 3.4 C, page 4, dated 3/13/07. AEC / SME Interconnection Agreement, Schedule A, dated 10/12/83. AEC demonstrated compliance with R1.</p> <p>R2 - IROL /SOL Letter from Steve Corbin Reliability Coordinator, dated 10/18/07. AEC demonstrated compliance with R2.</p> <p>R3 - AEC Capacity Shortage Plan, page 1-5 (for R3.1), dated 6/7/07. AEC Natural Disaster Emergency Response Plan dated 2007 (Not taken as evidence due to large volume) Manual Shed Quick List, dated 3/5/07. Interruptible Guidelines, dated 12/20/05, reviewed 6/1/07</p>	Compliant

Reliability Standard	Auditor Notes	Finding
	<p>AEC Energy Control Center Emergency Plan dated 2/9/05, reviewed 10/9/07</p> <p>AEC demonstrated compliance with R3.</p> <p>R4 - AEC Emergency Guidelines Coordinating & Mitigating Emergencies, dated 3/17/06, reviewed 6/25/07</p> <p>AEC demonstrated compliance with R4.</p> <p>R5 - AEC Capacity Shortage Plan</p> <p>AEC Energy Control Center Emergency Plan, Attachment 1</p> <ol style="list-style-type: none"> 1. Capacity Plan - pg 2, section B, Fuel supply, 6/7/07 2. Capacity Plan - pg 2, Section B, Fuel switching, 6/7/07 3. ECC Emergency Plan - pg 4, section 7, 6/7/07 4. Capacity Plan - pg 5, section A, subsection C, 10/9/07 5. Capacity Plan - pg 5, ERP – Section B3-13, B3-14 & B3-15, 6/7/07 6. Capacity Plan – pg 5, Section D, 6/7/07 7. Capacity Plan – pg 2, Section B, 6/7/07 8. Capacity Plan – pg 2, Section B, 6/7/07 9. Capacity Plan – pg 2, Section VI -4, 6/7/07 10. Capacity Plan – pg 2, Section VI-1, 6/7/07 11. N/A (No IPPs) 12. ERP – Section B2, pg 1, and Capacity Plan, pg 4, Section B, subsection C and D, 6/7/07 13. Capacity Plan, pg 4, Section B, 6/7/07 14. Capacity Plan, pg 1-2, Section V and Section C, 6/7/07 15. Capacity Plan, pg 2-3, Section VI, 6/7/07 <p>AEC demonstrated compliance with R5.</p> <p>R6 - Screen Shot of posting on SERC Portal.</p> <p>See Docs R5 (Emergency Plan - rev history pg 17).</p> <p>AEC demonstrated compliance with R6.</p> <p>R7 - Various emergency plan documents previously listed in this RSAW.</p> <p>7.1 Voice Communications Diagram</p> <p>7.2 Southeastern Subregion Alert, Chart, pg 1, dated 3/17/06</p> <p>7.2 See Various emergency agreements Documents in R1</p> <p>7.3 Outage Coordination Procedure, page, rev 0, 3/14/07</p> <p>7.4 Capacity Plan, Page 2, section B, 6/7/07</p> <p>AEC demonstrated compliance with R7.</p> <p>AEC currently registered as a BA, TO, TSP, TOP, TP, RP, GO, GOP, LSE, PSE, and PA has provided evidence as cited that support a recommended finding of compliance. This recommendation is the unanimous position of the audit team.</p>	
EOP-003-1	<p>R1 - N/A, AEC has not had any events that required them to shed load.</p> <p>AEC demonstrated compliance with R1.</p> <p>R2 - Manual Load Shed & UFLS (EO-311-05 E&O Procedure), rev 0, dated 7/20/95</p> <p>AEC demonstrated compliance with R2.</p> <p>R3 - Manual Load Shed & UFLS</p> <p>Interconnection Agreement, AEC/APCO, p.27-28, dated 5/5/80</p> <p>Interconnection Agreement, AEC/Gulf Power Co, p. 15, dated 8/1/85</p> <p>Interconnection Agreement, AEC/SMEPA, p. 3-4, dated 10/12/83</p>	Compliant

Reliability Standard	Auditor Notes	Finding
	<p>APCO & Gulf Under frequency Settings, 2007 Correspondence with Southern Company -William T. Gordon 2/5/07 @ 951am AEC demonstrated compliance with R3. R4 - Manual Load Shed & UFLS (EO-311-05 E&O Procedure), rev 0, dated 7/20/95 AEC demonstrated compliance with R4. R5 - Manual Load Shed & UFLS (EO-311-05 E&O Procedure), p.9, rev 0, dated 7/20/95 Manual Load Shed Quick List, Includes Stations Not on UFLS List, dated 3/5/07 Manual Load Shed Quick List, Includes Stations on UFLS List, dated 3/5/07 AEC demonstrated compliance with R5. R6 - AEC Energy Control Emergency Plan, pages 9 and15, dated 3/17/06 Capacity Shortage Plan, page2, dated 6/7/07 Manual Load Shed Quick List, Includes Stations on UFLS List, dated 3/5/07 AEC demonstrated compliance with R6. R7 - Manual Load Shed Quick List, Includes Stations on UFLS List, dated 6/1/07 AEC Generator Frequency Protection Set –points, 6/1/07 AEC demonstrated compliance with R7. R8 - Manual Load Shed Quick List, Includes Stations Not on UFLS List, dated 3/5/07 Manual Load Shed Quick List Includes, Stations on UFLS List, dated 3/5/07 AEC demonstrated compliance with R8. AEC currently registered as a BA, TO, TSP, TOP, TP, RP, GO, GOP, LSE, PSE, and PA has provided evidence as cited that support a recommended finding of compliance. This recommendation is the unanimous position of the audit team.</p>	
EOP-005-1	<p>R1 - AEC Energy Control Emergency Plan (Blackstart/System Restoration Plan), dated 10/9/07: 1. Pg 2-3, section II, paragraphs 1-4 2. Pg 4, Section 4- Cranking diagrams, attachment 1 3. Pg 8, Section VI, Contingencies for failed resources 4. Pg 8-9, Section VI, Synchronization 5. Pg 9-10, Section VI, Load Pickups 6. Pg 5, Section 5, Reviewing and Testing 7. Training Sheet 8. Pg 6, Section C, pg7, responsibilities section,pg8, Section- Synchronization 9. Pg 7, Priorities section, subsection 6 AEC demonstrated compliance with R1. R2 - AEC Energy Control Emergency Plan (Blackstart/System Restoration Plan) Pg 17, Revision History table, dated 10/9/07 AEC demonstrated compliance with R3. R3 - AEC Energy Control Emergency Plan (Blackstart/System Restoration Plan) Pg 7, Synchronization Section, dated 10/9/07 AEC demonstrated compliance with R3. R4 - AEC Energy Control Emergency Plan (Blackstart/System Restoration Plan) Pg 6 & 3, dated 10/9/07</p>	Compliant

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Reliability Standard	Auditor Notes	Finding
	<p>Screen Shot of SERC Portal of emergency plans AEC demonstrated compliance with R4. R5 – AEC Energy Control Emergency Plan (Blackstart/System Restoration Plan) Pg 3, section 3, telecommunications, dated 10/9/07 October Communications Test - done once a quarter, 10/07. Backup ECC Test, 7/30/07. AEC demonstrated compliance with R5. R6 - 2007 Restoration Plan Review/Backup Control Center Plan, Training Sheet, May, June, July 07 AEC demonstrated compliance with R6. R7 - Jan 22 Sub-region Drill Report (Consultant Rpt), dated 1/17/07 AEC demonstrated compliance with R7. R8 - Blackstart Test Records, last tested 5/07/07 AEC demonstrated compliance with R8. R9 - AEC Emergency Plan, Appendix A & B (Cranking Path Diagrams), reviewed 10/9/07 and Posted on SERC Portal. AEC demonstrated compliance with R9. R10 - Blackstart Test Records, last tested 05/07/07 AEC demonstrated compliance with R10. R11- No events for AEC. AEC currently registered as a BA, TO, TSP, TOP, TP, RP, GO, GOP, LSE, PSE, and PA has provided evidence as cited that support a recommended finding of compliance. This recommendation is the unanimous position of the audit team.</p>	
EOP-006-1	Not applicable – AEC is not a Reliability Coordinator.	N/A
EOP-008-0	<p>R1 - Backup ECC Plan, page 1-6, rev 1, dated 6/6/07 2007 Restoration Plan Review –BUCC Sign in Sheet BECC Test Report dated 7/30/07 AEC demonstrated compliance with R1. AEC currently registered as a BA, TO, TSP, TOP, TP, RP, GO, GOP, LSE, PSE, and PA has provided evidence as cited that support a recommended finding of compliance. This recommendation is the unanimous position of the audit team.</p>	Compliant
EOP-009-0	<p>R1 - Blackstart Record spreadsheet, section 1 AEC demonstrated compliance with R1. R2 - Blackstart Record spreadsheet section 1 2007 Compliance Rpt., SERC Portal spreadsheet EOP_009_0_RF, SERC Portal, 9/26/07 AEC demonstrated compliance with R1. AEC currently registered as a BA, TO, TSP, TOP, TP, RP, GO, GOP, LSE, PSE, and PA has provided evidence as cited that support a recommended finding of compliance. This recommendation is the unanimous position of the audit team.</p>	Compliant
FAC-003-1	Applies to AEC as registered, but not assessed during this Operating audit.	Not Assessed
FAC-008-1	Applies to AEC as registered, but not assessed during this Operating audit.	Not Assessed
FAC-009-1	Applies to AEC as registered, but not assessed during this Operating audit.	Not Assessed

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Reliability Standard	Auditor Notes	Finding
IRO-001-1	<p>R1 - Security Coordinator Operating Agreement (signature page 13), 10/24/97 N/A, AEC does not perform RRO function. R2 - N/A, AEC does not perform RC function. R3 - Addendum # 4, SC Authority, dated 2/23/01 RC Authority Procedure, rev 1, dated 2/26/07 Security Coordinator Formal Request (e-mail) dated 7/2/07 N/A, AEC does not perform RC function. R4 - N/A, AEC does not perform RC function. R5 - N/A, AEC does not perform RC function. R6 - N/A, AEC does not perform RC function. R7 - N/A, AEC does not perform RC function. R8 - Security Coordinator Formal Request (e-mail) from Chad Chandler, 7/2/07 AEC demonstrated compliance with R8. R9 - N/A, AEC does not perform RC function. AEC currently registered as a BA, TO, TSP, TOP, TP, RP, GO, GOP, LSE, PSE, and PA has provided evidence as cited that support a recommended finding of compliance. This recommendation is the unanimous position of the audit team.</p>	Compliant
IRO-004-1	<p>R1 - N/A, AEC does not perform RC function. R2 - N/A, AEC does not perform RC function. R3 - N/A, AEC does not perform RC function. R4 - NERC RC Questionnaire, page 2, # 8, 2007 Notification of RC & Neighboring Systems G&T Outages Procedure, rev 1, 2/26/07 ICCP Real-Time Data to transfer PSS/O system AEC demonstrated compliance with R4. R5 - Next Day Study Peak Case Sat 10/29/07 (e-mail) dated 10/28/07 N/A, AEC does not perform RC function. R6 - 230 kV line Outages (e-mail) dated 7/5/07 N/A, The RC did not issue any directives to AEC. R7 - 230 kV line Outages (e-mail) 7/05/07 11:49 am from Tim Hattaway, 7/5/07 AEC demonstrated compliance with R7. AEC currently registered as a BA, TO, TSP, TOP, TP, RP, GO, GOP, LSE, PSE, and PA has provided evidence as cited that support a recommended finding of compliance. This recommendation is the unanimous position of the audit team.</p>	Compliant
IRO-014-1	Not applicable – AEC is not a Reliability Coordinator.	N/A
IRO-015-1	Not applicable – AEC is not a Reliability Coordinator.	N/A
IRO-016-1	Not applicable – AEC is not a Reliability Coordinator.	N/A
PER-002-0	<p>R1 - Emergency Operations Training.doc, 4/10/07, approval not indicated, but by Training Coordinator, Bill Thigpen, indicates intent to provide training. 2007 Master Training.xls, file properties indicate created by Tim Hattaway on 11/28/07, shows training hours and types of training for each operator for 2007. AEC demonstrated compliance with R1. R2 - SysOper1 Job Description.pdf, SysOper2 Job Description.pdf and dated 7/20/07, indicate personnel required to meet training. All personnel have NERC Certifications, all of which are at the RC level of certification. Certification Certificates provided.</p>	Compliant

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Reliability Standard	Auditor Notes	Finding
	<p>AEC Training Objectives.doc, 9/4/07 Black Start Drill Report 1/17/07, OES-NA, slide 2. AEC demonstrated compliance with R2. R3 - AEC Training Objectives.doc, 9/4/07, identifies training objectives. Energy Control Operator Training Overview, Rev 2, 3/30/07, provides an overview of training program. Black Start Drill Report 1/17/07 OES-NA, slide 2 2007 Restoration Plan Review, Sign-In Sheet, 5/7/07 Introduction to Training Manual Cont Education, Rev 2.0.doc, 9/4/07 Mr. Thigpen has an electrical engineering degree, 18 years of operation experience, attended SERC and NERC Train-the-Trainer. Not identified as instructor in training program proper, but is identified in job description. Brief Bio provided. Job Description provided. Selected PPT slides describing Internal Restoration Plan Training NERC Continuing Education Program, Individual Learning Application for AEC System Restoration Review, 10/30/07, provided objectives for internal system restoration training. AEC demonstrated compliance with R3. R4 - 2007 Master Training Rev 0.xls identifies simulation training and all other training requirements. AEC demonstrated compliance with R4.</p>	
PER-003-0	<p>R1 - System Operator NERC Certificates System Operator Schedule 2007 AEC demonstrated compliance with R1.</p>	Compliant
PER-004-1	Not applicable – AEC is not a Reliability Coordinator.	N/A
PRC-004-1	Applies to AEC as registered, but not assessed during this Operating audit.	Not Assessed
PRC-005-1	Applies to AEC as registered, but not assessed during this Operating audit.	Not Assessed
PRC-008-0	Applies to AEC as registered, but not assessed during this Operating audit.	Not Assessed
PRC-010-0	Applies to AEC as registered, but not assessed during this Operating audit.	Not Assessed
PRC-011-0	Applies to AEC as registered, but not assessed during this Operating audit.	Not Assessed
PRC-016-0	Applies to AEC as registered, but not assessed during this Operating audit.	Not Assessed
PRC-017-0	Applies to AEC as registered, but not assessed during this Operating audit.	Not Assessed
PRC-021-1	Applies to AEC as registered, but not assessed during this Operating audit.	Not Assessed

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Reliability Standard	Auditor Notes	Finding
TOP-003-0	<p>R1 - Procedure: Notification of Reliability Coordinator & Neighboring Systems Transmission & Generation Outages, Rev 1, 2/26/07 E-mail Corbin/Hattaway 8/06/07 Outage, 2/6/07 outage, 2/7/07, outage, and 3/7/06 outage Generator Outage Schedule 1/25/07 Log entries for 7/1/07, 7/4/07 and 7/5/07, of unit outages. AEC demonstrated compliance with R1. R2 - Procedure: Notification of Reliability Coordinator & Neighboring Systems Transmission & Generation Outages, establishes notification requirements. AEC Outage Coordination Procedure (page 3) establishes notification procedures. AEC Voltage Schedule, Rev 1.1, 10/12/07, page 2, Documentation Requirements, Item 2 Log entries for 7/19/01, verifies coordination of voltage regulation. AEC demonstrated compliance with R2. R3 - AEC Narrative and Flowchart.doc provides description of coordination. Letter to Johnny Mack, dated 8/15/07, from Kenneth Legg, coordinating meter tests. Letter from South Mississippi Electric, to Johnny Mack, dated 1/8/07, coordinating meter testing. AEC Outage Coordination Procedure, rev 0, 3/14/07 Scheduled Outages SSSC Notification Form to Security Coordinator of next-day transmission outages, dated 9/12/07 AEC demonstrated compliance with R3. R4 - AEC is not a Reliability Coordinator – Not applicable.</p>	Compliant

Reliability Standard	Auditor Notes	Finding
TOP-004-1	<p>R1 - Letter from Steve Corbin, RC, 9/18/07, to Tim Hattaway, acknowledges no potential IROL/SOL violations identified. AEC demonstrated compliance with R1.</p> <p>R2 - Transmission System Stability Study, pg 2-3, 4/06, Executive Summary, page i, provides AEC's contingency analysis. Most sever single contingency is Gantt-OPP 230 kV, oscillations. AEC demonstrated compliance with R2.</p> <p>R3 - Transmission System Stability Study, pg 2-3, 4/06, 2007 Contingency Analysis, 7/07, and Joint Policies and Coordination, 2/26/07 provide operating plan/procedures. Annual review of Analysis. AEC demonstrated compliance with R3.</p> <p>R4 – No events. Procedure: Load Flow/Contingency Studies identify policies and coordination procedures for operators. Item 6 identifies requirement to return to acceptable level within 30 minutes. AEC demonstrated compliance with R4.</p> <p>R5 – No events. Memo of System Operator Authority, from Ken Skroback, to System Operators, dated 1/4/07, providing authority to do whatever is necessary to maintain system stability, including separation from the interconnections. AEC demonstrated compliance with R5.</p> <p>R6 - Joint Policies and Coordination, 2/26/07. E-mails from Darrell Pace, dated 4/14/07 at 8:51AM to Keith Kliebert; from Darrell Pace to Keith Kliebert, dated 6/19/07 at 8:18 AM; from Robert Pierce to C. Calhoon, dated 8/31/07 at 7:51 AM, and a zip file "AEC_LTSG_Cases_Pass0.zip were sent to Mike Green (former AEC employee) to document AEC's participation in LTSG/VSTE. AEC demonstrated compliance with R6.</p>	Compliant
TOP-005-1	<p>R1 - Reliability Coordinator's, Steve Corbin, SERC Response to Reliability Coordinator Questionnaire for AEC.doc, page. 2 ICCP Data Link to SCS / SMEPA – Export Points Load forecasts provided hourly on FTP. Southern request for AEP Point Request. AEC demonstrated compliance with R1.</p> <p>R2 - Do not receive ISN data. Not Assessed.</p> <p>R3 - ICCP Data Link to SCS / SMEPA – Export Points Load forecasts provided hourly on FTP. Southern request for AEP Point Request. AEC demonstrated compliance with R3.</p> <p>R4 - PSE, BA & TOP are one and the same. AEC demonstrated compliance with R4.</p>	Compliant

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Reliability Standard	Auditor Notes	Finding
TOP-007-0	<p>R1 - Letter from RC, Steve Corbin, to Tim Hattaway, re: IROL/SOL, dated 9/18/07. Joint Policies/Coordination R1, 2/26/07, item 6 describes intent to comply. R2 – No events. Joint Policies/Coordination R1, 2/26/07, item 6 describes intent to comply. R3 – No events. Memo from Ken Skroback to System Operators, dated 1/4/07 describing System Operator Authority to take corrective actions necessary to return system to stable condition from an SOL. R4 - AEC is not a Reliability Coordinator. Not assessed.</p>	Compliant
TPL-001-0	Applies to AEC as registered, but not assessed during this Operating audit.	Not Assessed
TPL-002-0	Applies to AEC as registered, but not assessed during this Operating audit.	Not Assessed
TPL-003-0	Applies to AEC as registered, but not assessed during this Operating audit.	Not Assessed
TPL-004-0	Applies to AEC as registered, but not assessed during this Operating audit.	Not Assessed
VAR-001-1	<p>R1 - AEC Voltage Schedule, Rev 1.1, dated 10/4/07, Attachment 1 – Voltage Schedule SMEPA Interconnection Agreement dated 10/12/83, Sec 4.04 pg 4 APCo Interconnection Agreement, 5/5/80, Sec 6.06 pg 49 SSSC Notification Form for Scheduled Outages, dated 4/5/07 confirms performance of outage scheduling. AEC demonstrated compliance with R1. R2 - 2007 Contingency Analysis, 7/07, and Transmission System Stability Study, 2006, focused on voltage, resulted in projects and reactive power capability testing to ensure sufficient reactive resources to maintain voltage levels. 2007 Contingency Analysis, 7/07, sections 2.0 and 2.1, page 6, Base Case AEC demonstrated compliance with R2. R3 - AEC Voltage Schedule (Appendix A) pg 3, Rev 1.1, 10/12/07 and e-mail from Damon Morgan to Tim Hattaway, Re: AEC Voltage Schedule. AEC demonstrated compliance with R3. R4 - AEC Voltage Schedule (Appendix A) pg 3, Rev 1.1, 10/12/07, and e-mail from Damon Morgan to Tim Hattaway, Re: AEC Voltage Schedule. AEC demonstrated compliance with R4. R5 - AEC Voltage Schedule, 10/12/07 – TSP and PSE are one and the same, satisfying their own requirements for reactive resources. AEC demonstrated compliance with R5. R6 - EMS Screenshot Voltage Displays – AEC MVar Reserve Summary, demonstrates monitoring and indication of when capacitor banks are placed in service. No voltage regulators, reactors or power system stabilizers. AEC Voltage Schedule, 10/12/07, pages 1, 2 and 3 – Documentation Requirements, requires notification to system operator when AVR is out of service at generating facility.</p>	Compliant

Reliability Standard	Auditor Notes	Finding
	<p>AEC demonstrated compliance with R6. R7 - Screenshot of EMS Bus Voltage/Capacitor Log – Page 2, showing actual screen from which capacitor banks can be switched into or out of service. Screenshot of voltage overview indicates status of all reactive devices and system voltages. AEC demonstrated compliance with R7. R8 - Screenshot of EMS Bus Voltage/Capacitor Log – Page 2, shows actual screen from which capacitor banks can be switched into or out of service. Screenshot of voltage overview indicates status of all reactive devices and system voltages. E-mail from Damon Morgan to Tim Hattaway, Re: AEC Voltage Schedule. AEC demonstrated compliance with R8. R9 - Screenshot Voltage Displays System Peak Hour Voltage Schedule reviewed, 9/19/07 Screenshot of EMS Bus Voltage/Capacitor Log – Page 2, shows actual screen from which capacitor banks can be switched into or out of service. Screenshot of voltage overview indicates status of all reactive devices and system voltages. 2007 Contingency Analysis, beginning page 7, section 3.1. System Map identifying location of capacitor banks. AEC demonstrated compliance with R9. R10 - No IROL or SOL violations have occurred. E-mail from Damon Morgan to Tim Hattaway, Re: AEC Voltage Schedule Indicates intention. AEC demonstrated compliance with R10. R11 – No setting changes requested by AEC. AEC Voltage Schedule, 10/12/07, page 2, sections 3, 4 and 5 AEC demonstrated compliance with R11. R12 - No Events. E-mail from Damon Morgan to Tim Hattaway, Re: AEC Voltage Schedule Indicates intention. AEC demonstrated compliance with R12.</p>	

Conclusions

Alabama Electric Cooperative, Inc was audited on 19 monitored operating standards identified as being applicable to AEC as a Balancing Authority, Transmission Owner, Transmission Service Provider, Transmission Operator, Transmission Planner, Resource Planner, Generator Owner, Generator Operator, Load-Serving Entity, Purchasing and Selling Entity and Planning Authority. The Audit Team determined that AEC is in compliance with all of the audited standards.

SUMMARY OF AEC RESPONSE TO THE AUDIT FINDINGS

E-mail from Tim Hattaway to James Harrell, Samuel Stryker and Bob Goss, dated December 21, 2007 at 2:51 PM, stated: “AEC agrees with the findings noted in the report.”

APPENDIX 1 — APPLICABLE RELIABILITY STANDARDS

Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to AEC? 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.	Yes
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.	Yes
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.	Yes

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Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to AEC? 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.	Yes
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.	Yes
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.	Yes
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.	Yes

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Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to AEC? Yes or No
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	Yes
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.	Yes
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.	No
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.	Yes
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.	Yes

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Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to AEC? Yes or No
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.	Yes
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.	Yes
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.	Yes

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Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to AEC? Yes or No
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.	Yes
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.	Yes
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.	No

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Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to AEC? Yes or No
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.	No
IRO-016-1	All	Coordination of Real-time Activities 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	Rolling 12 months of information provided on request.	No
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.	Yes
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.	Yes
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.	No

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Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to AEC? 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.	Yes
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.	Yes
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.	Yes
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.	Yes
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.	Yes

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Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to AEC? Yes or No
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.	Yes
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.	Yes
PRC-021-1	All	Under-Voltage Load Shedding Program Data	DP, TO	DOCUMENTATION of undervoltage load shedding program	By request – latest UVLS data.	Yes
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.	Yes
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.	Yes
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.	Yes

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Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to AEC? Yes or No
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.	Yes
TPL-001-0	All	System Performance Under Normal (No Contingency) Conditions	PA, TPL	System performance under normal conditions	By request – latest annual assessment.	Yes
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.	Yes
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.	Yes
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.	Yes

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Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to AEC? Yes or No
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.	Yes