



## Federal Energy Regulatory Commission



## FACT SHEET

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### Major Findings and Recommendations: Southwest Power Outage, September 8, 2011

The Joint Inquiry found weaknesses in two broad areas: operations planning and real-time situational awareness.

#### **Finding - Failure to Update External Networks in Next-Day Study Models**

When conducting next-day studies, some affected transmission operators use models for external networks that are not updated to reflect next-day operating conditions external to their systems.

**Recommendation:** Transmission operators and balancing authorities should ensure that their next-day studies are updated to reflect next-day operating conditions external to their systems. The reliability coordinator, transmission operators and balancing authorities should take the necessary steps, such as executing nondisclosure agreements, to allow the free exchange of next-day operations data.

#### **Finding - Lack of Real-Time External Visibility**

Affected transmission operators have limited real-time visibility outside their systems, causing a lack of adequate situational awareness.

**Recommendation:** Transmission operators should engage in more real-time data sharing to increase their visibility and situational awareness of external contingencies that could impact the reliability of their systems.

#### **Finding - Impact of Sub-100 kV Facilities on BPS Reliability**

WECC reliability coordinator and affected transmission operators and balancing authorities do not consistently recognize the adverse impact sub-100 kV facilities can have on bulk power system reliability.

**Recommendation:** WECC, transmission operators and balancing authorities should ensure that all facilities that can adversely impact bulk power system reliability are either designated as part of the BES or otherwise incorporated into planning and operations studies.

#### **Finding - Failure to Recognize Interconnection Reliability Operating Limits and Establish Valid System Operating Limits**

The cascading nature of the September 8th event indicates that an Interconnection Reliability Operating Limit (IROL) was violated, even though WECC did not recognize any in effect on that day, and that System Operating Limits (SOL) on Path 44 and Hassayampa-North Gila were not valid for the system on September 8, 2011

**Recommendation:** WECC should recognize that IROLs do exist on its system and therefore study them in the day-ahead timeframe and monitor potential situations where IROLs would be exceeded in real-time. WECC should specifically consider whether Path 44 and Hassayampa-North Gila are IROLs since cascading occurred while they were being operated well within their SOLs.

**Finding - Failure to Study and Coordinate Special Protection Systems**

Several transmission operators failed to properly coordinate Special Protection Systems with other protection schemes, resulting in undesirable impacts on system reliability. At the time of the event, WECC did not require two of the System Protection Systems operating on September 8 to be studied.

**Recommendation:** Transmission owners and operators, generation owners and operators, and reliability coordinators should study and coordinate Special Protection Systems and Remedial Action Schemes, evaluate whether such systems are still effective or necessary, and determine if such systems have adverse or unintended effects on reliability.