

Lesson Learned

Capacity Awareness During an Energy Emergency Event

Primary Interest Groups

Transmission Owners (TO)	Transmission Operators (TOP)
Reliability Coordinator (RC)	Generator Owners (GO)
Generator Operators (GOP)	Balancing Authority (BA)
Interchange Authority (IA)	Purchase-Selling Entity (PSE)

Problem Statement

During a severe winter weather storm, an Energy Emergency Alert 3 (EEA 3) lasted longer than it should have because the BA, TOP and the RC did not have situational awareness of the generation capacity available.

Details

In a BA area, a winter storm with near zero temperatures was affecting the operation of many generators causing some to trip due to icing problems and as well as others being delayed in coming online. The rapidly changing status of the BA's generation fleet made it difficult to plan for meeting the load. Compounding the problem was the sudden loss of the BA's largest generation plant which placed the BA into a capacity and energy deficiency. The inability to start additional generation and to import power into the balancing area due to transmission congestion outside the balancing area caused the RC to call an EEA 3. After the EEA 3 was called, transmission interface capability improved allowing room for purchased energy to be obtained. Although power purchases were made, the BA, TOP or RC did not know they had been obtained and therefore did not include them in their planning. As a result, the EEA3 continued for six hours longer than necessary. The entity was able to meet the load and reserve requirements without implementing load sheds.

Corrective Actions

Communication procedures between the BA, the IA and the PSE were reviewed addressing the communication issue which occurred. Also, the entities developed a real time calculation tool for their System Operators to keep them informed of the BA capacity resources on a real time basis thus allowing them to maintain system awareness of the generation capacity used and available.

Lesson Learned

System Operators must have situation awareness of the BA's generation, power purchases and sales and transmission capacity available for importing power at all times.

- In an operation where various functions are split between entities, in order to maintain situational awareness by the operators, operators must have:
 - Procedures and tools in place to be able to communicate under extreme time pressure situations
 - An understanding of the critical nature of the information they must communicate for other entities to do the jobs properly

- The necessary training to ensure all entities communicate to each other the information needed for each entity to perform their function. Training should also include scenarios, under time pressure, which require all entities to communicate in order to solve the problem. Scenario simulation training involving all entities to solve problems requiring information from each other is a must in effective training.
- System operators must have tools which provide them up-to-date information on all generation resources available to the BA to allow them to plan to meet the load requirements. This information includes forecasts of hour by hour schedules of generation resources which will allow them not only to meet the minute to minute load but to plan for the load in future hours.

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For more Information please contact:

[NERC – Lessons Learned](#) (via email)

[Alan Wahlstrom](#) (via email) or (501) 688-1624

Source of Lesson Learned:

Southwest Power Pool

Lesson Learned #:

20120904

Date Published:

September 12, 2012

Category:

Bulk Power System Operations

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