Lessons Learned
EMS Database Corruption Causes Loss of AGC (Automatic Generation Control)

Primary Interest Groups
Balancing Authorities
Transmission Operators
Generation Operators
Generation Owners

Problem Statement: A utility’s vendor-provided procedure to correct a mismatch between the EMS real-time database and database configuration utility, combined with the testing process for Network Analysis (NA) software enhancement, caused a loss of AGC for over three hours.

Details: The EMS group had recently installed several Network Analysis (NA) enhancements provided by the vendor on only one of the EMS production servers so they could bring the other production server up in “Test Primary” mode. This process was used so the System Operations group could do comparisons between the old and the new NA software. The EMS group was waiting for System Operations to validate the new NA software before installing the NA enhancements on the “Hot Standby” system.

The vendor also provided procedures to correct the AGC data mismatch, which were successfully completed on both the test and quality servers prior to attempting the data correction on the primary system. The same procedure was performed on the EMS production server and resulted in the AGC records in the Realtime Database to be spared out and therefore no longer available to be used by the AGC software. As a result, the AGC was not available for over three hours.

Corrective Actions: Network enhancements will not be undertaken on the EMS production server without backup system availability. The utility will be reevaluating software installation and testing methods for potential improvements.

Lesson Learned:
- The hot standby system was unavailable at the time of the event and contributed to the length of the AGC control outage. Ensure that the backup production system is available prior to any major system change on the primary EMS system.
- The testing on the Test and Quality Servers did not identify a problem with the vendor-provided procedure to correct the AGC data mismatch. Be aware that Test and Quality Systems may not completely represent the production environment.
For more information please contact:

Alan Wahlstrom
Lead Engineer
Event Analysis and Reliability Assessments
awahlstrom.re@spp.org
501-688-1624