Defensive Strategies Report

EC Meeting 0f 7/8/16

GS

As of 7/1/16 a successful operation of the fully automated controlled separation scheme was achieved. The test involved on of the most difficult extreme contingencies internal to the New York system. The scheme used Kalman filter estimates of phase angle differences across the interface, combined with a prediction algorithm, to predict impending instability. Some features of the test are:

- One of 2 candidate separation interfaces was tested.
- Immediate tripping of lines (no delay due to breaker operation) was performed.
- An updated model of UFLS was employed and was successful in tripping some SENY load with no modification of the delay times or frequencies (CSSS required reducing the delay times).
- This result is for phase 1 of the testing which does not include the security provision where out of step relays are modeled to perform actual tripping in the simulation.

In process are setting up cases for the remainder of the verification tests totaling 7 additional extreme internal disturbances, 8 extreme external disturbances and 4 “normal” or within criteria disturbances. What needs to be finalized are items such as choice of the final controlled separation interface as well as incorporation of delays for signaling and breaker operation.

Any additional results obtained between now and the EC meeting will be reported verbally at the meeting.