NYISO RESTORATION DRILL
04/29/2009

The annual test of the NYISO Restoration Plan was conducted in accordance with Emergency Testing Procedures 9.1.4 on April 29, 2009. Mike Egan, Ken Litzke, Steve Singer, Pat Shawver, Lacy Skinner, Tara Fischer, Jon Sawyer, Bernie Mignacci, Keith Harris and Bob Trottier ran the test. TO participants were Tom Waye (from Long Island), Ed Cook (Con Edison), Todd Poynton (Orange & Rockland), Thomas Bixby and Darryl Roller (Power Authority), Jim McCloskey (Central Hudson), Jerry O'Conner (Rochester Gas & Electric), Alonzo Labar (New York State Electric & Gas), Pete Reap (National Grid.) NYSEG and RGE were running their drill from their simulator. National Grid ran it's drill from their ACC. The following summarizes the test.

Current Line/Bank Outages
BP76 Beck-Packard 230KV
Chateauguay DC Pole #1
East Garden City BK #1 345/138KV
70 S. Mahwah – Ramapo 345KV
Massena BK #2 765/230KV
MMS2 Moses Massena 230KV
UC2-41 Marcy Coopers Corners 345kv
Edic BK #3E 345/115KV
W78 Eastview - Sprainbrook 345KV
W85 Millwood - Eastview 345KV
BK1 Watercure. 345KV

Current CB Outages

Niagara	2022, 3022
Moses	2108
Pleasant Valley	RS3

Reactive resources unavailable
All Available

Note- Gilboa Unit #3 unavailable due to scheduled maintenance.

09:30	Hot Line call, start of Restoration Drill. Requested all TOs isolate buses.
10:01	All TOs have reported all buses isolated
10:46	NYPA reports Gilboa black start procedure completed.

10:57	NYPA reports St. Lawrence black start procedure completed.
11:19	NYPA reports Niagara black start procedure completed.
12:13	Energized the 71 Oakdale-Watercure due to BK1 outage at Watercure. Connected through 115kv bus at Oakdale via BK 3 and BK 1
12:39	Synchronized Northern and Western 230KV system at Porter (step NG100)
12:56	Synchronized Western 345KV with the East 345KV (step PA125.)
14:11	Tied 345KV and 230KV system at Watercure (step NY150.) NYISO used 71 Watercure-Oakdale 230KV via the Oakdale 115KV Banks
14:15	NYISO restoration drill terminated

SIMULATOR OBSERVATIONS:

There were some discrepancies between NYISO and NYSEG/RGE simulators due to the assumed values for Niagara generation and MVAR output. Simulation went quickly and did not hold up progress. More simulation involvement from the other TOs would improve the quality of the annual drills.

The restoration plan waited until RP1 Rochester-Pannell 345KV was energized before adding load at Station 80. We added load at Station 80 prior to energizing the line to maintain a working voltage profile. The procedure did not require any load pick up any load at Pannell. We added 140 MWs of load at Station 80 then closed into Pannell and added an additional 35 MWs to keep voltage at 333KV. Generally, more load is needed than indicated in the restoration plan steps.

WebEx was used to display key system data for all to track the progression of the restoration. This was helpful for all the participants to see the Restoration Drill progress along as the system was restored.

It was very helpful to have the NYISO simulator available to monitor voltages, load and frequency. It also added to the realism of the drill to be aware of voltages and system conditions. Several of the TO's also had their simulators running and the simulator operators frequently compared notes to verify their systems accuracy. The simulator was very useful and reliable during the entire Restoration Drill.

OBSERVATIONS:

TO control rooms didn't all pass the Hot Line message to their respective drill locations requiring second calls from the drill Shift Supervisor to repeat the message at the drill locations.

NYSEG and National Grid Operators questioning how long NYPA is taking to complete their initial Black Start steps.

National Grid operator insisted he would do steps NG035 – NG055 per SOAS agreement. NYISO request only steps NG035 – NG040 be done. The NYISO understanding is that multiple steps could be done only if both parties are in agreement.

Even with the current outage that modified the planned synchronization point, and took away some reactive capability, the restoration proceeded smoothly without delay.

NYISO used 71 Oakdale-Watercure 230KV to parallel the 345/230KV Western System due to Watercure BK1 345outage. It was decided not to synchronize the 345KV and 230KV system at Watercure first due to using Oakdale 115KV banks to tie the 345KV to the 230KV.

The current version of the Restoration Procedure now extends into the Con Ed territory all the way to Fresh Kills. No problems were experienced with the additional steps that were added.

NYSEG and RG participated by using computer simulation.

All other TOs participated using a tabletop simulation.

RECOMENDATION:

Consider restoring load before energizing the Rochester-Pannell #1 and Pannell-Clay #1 line (see Observation section.)