

Summary Report of the
Spring 2009
System Operator Training Seminars
(SOTS)

Restoration Related Excerpts

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III. Participant Breakdown

The number of attendees from the operating authorities is shown below;

Spring 2009 SOTS Participation

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Totals
NYISO	6	6	6	6	10	7	41
Cent. Hud.	0	2	2	2	2	4	12
Con Ed	5	3	0	8	5	8	29
LIPA	4	4	2	3	1	1	15
NYPA	3	3	3	5	3	1	18
NYSEG	1	2	1	1	1	2	8
N. Grid	3	3	4	3	4	1	18
O&R	5	4	3	0	0	3	15
RGE	1	1	1	1	2	1	7
Weekly totals	28	28	22	29	28	28	
							Program total
							163

Attendees were primarily system operators.

Restoration Practices

At the conclusion of this lesson, the participant shall be able to discuss the general steps to be taken in order to effectively recover from a major shutdown of the system and identify some of the challenges facing operators during restoration.

1. Identify resources on generic restoration concepts and guidelines that are freely accessible to the general public
2. Identify the five guiding principles outlined by NERC for system restoration.
3. State the need for restoration planning and target participants in the restoration action.
4. Briefly summarize the conditions which may lead to a blackout.
5. Summarize the actions required to determine the extent of a blackout.
6. List the key factors in evaluating transmission system status
7. Discuss the major approaches to preparing for transmission system restoration.
8. Discuss the major approaches to preparing for transmission system restoration.
9. Discuss the major operational concerns in restoring the transmission system.
10. Discuss the major concerns in restoring generation.
11. Discuss the major concerns in restoring load.
12. Describe the function of the Reliability Coordinator during restoration.

NYISO Restoration Plan and Simulation

At the conclusion of this lesson, the participant shall be able to using the Dispatcher Training Simulator (DTS), successfully restore the New York bulk power system backbone following the NYISO restoration plan. Satisfactory completion will result in the participant being able to:

1. Identify the NYISO blackstart generators.
2. Synchronize parts of the NYISO system.
3. Restore load for voltage control.
4. Adjust generation to match load.
5. Demonstrate proper three part communications
6. Coordinate activities with neighboring transmission owners.

VI. Participant Evaluations

Included with each participant notebook was an evaluation sheet that invited the attendee to rate each presentation on a scale of 1(worst) to 4(best) in each of six categories:

- Instructor Knowledge of the Topic
- Course Organization
- Applicability to your job
- Content of the presentation
- Responsiveness to the audience
- Ability to hold your attention

There was also an Overall Rating for the Presentation and a space for comments.

The numeric evaluation results of the Overall Ratings are listed and plotted below.

2008 Spring SOTS Evaluations

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Avg.
Backup Ops/ICO	3.33	3.59	3.50	3.57	3.59	3.56	3.52
Environmental							
Update	2.91	3.25	3.25	3.57	3.65	3.36	3.33
NYISO Update	3.43	3.33	3.43	3.60	3.76	3.63	3.53
Op Issues	3.63	3.63	3.53	3.67	3.80	3.61	3.64
Recent Events	3.59	3.58	3.65	3.60	3.79	3.70	3.65
Restoration Plan	3.47	3.58	3.62	3.75	3.75	3.61	3.63
Restoration Sim	3.61	3.52	3.75	3.77	3.75	3.88	3.71
Restoration							
Practices	3.47	3.61	3.62	3.82	3.80	3.58	3.65
SOP Part 1	3.40	3.27	3.37	3.31	3.50	3.57	3.40
Avg.	3.63	3.48	3.52	3.63	3.71	3.61	

Program Average **3.59**

VII. Individual Topic Feedback

Restoration Plan

- Keith does another stupendous job. Good flow, good prep and informative. No quiz – high marks.

Restoration Simulation

- Found the background noise to be excessive. Need better placement of companies and get O&R more involved! Give thought to a restoration with something abnormal such as Gilboa not available due to no water in future simulations.
- Restoration – Does it really have to take so long? What about a simulation that involves load shed? Voltage reduction? Go through steps of hot resource limited day, implementing emergency procedures up through load shed.
- More phone lines needed with direct ringdown capability, more time needed
- A brief at the beginning to explain initial conditions to include some variables would be beneficial
- Despite not actively having a part in backbone restoration, the ability to model my area by the simulator engineer allowed me to restore my system prior to reconnecting to the backbone – impressive. Watching the state blackstart, rebuild – equally impressive. This was great (despite my locking up the sim computer w/my personal restoration).
- Simulation needs headsets for more than one operator
- Thought the exercise was very good this year, new phone system worked well.
- Some notes on changes on the step guideline handout, some missed preps at Rainey CB's 1E, 9E, 8E and voltages at Rainey through Goethals after energization of FDR 62
- The simulator has the potential to be the “best of the SOTS week”, but is not yet ready for prime time. Once everyone was seated, there was a huge difference in work load & participation between the desks. The desks with no tasks had difficulty following progress. We need to seat some company/areas with others more involved.
- Another winner of a session. This is really a great program, The entire staff should be congratulated. Have a plan that has an RC connected (ISONE)

Restoration Practices

- Keith moved along through a topic which can become slow & dragged out. As always Keith delivered his lesson with a light demeanor; keeping the audience attentive. Using my wayback machine, I have found Keith to be consistently terrific as a trainer/presenter. Go Keith
- Raced through slides. If we don't need all info, don't put on slides. If we try to read slides, get left behind

SOTS course content: Likes

- The simulator, it was very interesting to watch other utilities procedures
- Simulator
- Restoration simulation
- Simulation, ICO
- Simulation
- Actual sim for restoration was good
- Restoration drills, various system updates
- Simulator has progressed nicely
- Simulation
- Restoration simulation
- Restoration simulation

SOTS course content: Dislikes

- I would like to be able to do my company's restoration in concurrence with the NYISO's during the simulator
- If possible, try and incorporate TO ability to step thru their own plan
- Using phones during simulation leaves a lot of people disengaged from the exercise
- Restoration drills, busy phones and slow simulator
- Still have issues w/restoration exercise not indicative of freq swings that would typically occur. Still thinking more load needs to be added in parallel w/backbone restoration to stabilize system
- Need a synch check visual display

What other topics would you like to see in future SOTS Programs

- Would like to see an expansion of restoration exercise to include some of the actions CHG&E would be undertaking on their own working in conjunction w/the backbone plan. Also Leeds SVC will not work w/o feed from N. Catskill via islanded jets

Other Comments

- Way too much restoration coverage – need to focus more on how to prevent restoration state (day to day PSO).
- Simulation is a great addition to training. Nice if you could label the loads with how much each one is, or label screen same as paper some hard to differentiate.
- Bob has done great job with simulator.
- During the restoration simulator, more of an effort to include all utilities in the restoration process should be made. One way to do this would be to have all calls go through the PA system so everyone can hear what is going on in all systems. This may also make for a more orderly restoration process.

- On the restoration plan for Rochester operation RG020 possibly should be 2 operations. First energize STA 80 345/115 kv bank then go to RG 021. Then a new operation to energize to Pannell Rd 345/115kv bank. Also on RG&E scheme on simulator might want to add in new line 929 from Quaker Rd Sta to STA 230 with LOAD that can be picked up then on to new STA 135 then to Ginna. Just a thought! I thought this exercise went very well & I personally got a lot out of it.
- Regarding the restoration drill, there is no reason to actually wait 1 -2 hours for St. Lawrence and Niagara to blackstart,. These should be simulated using and “accelerated clock” i.e. after 20 min assume a blackstart unit is available, another 20 min the next unit is available. This would make for a more realistic simulation (i.e. we are very unlikely to be able to extend the backbone deep into ConEd w/o upstate being significantly restored). And it will allow time for TOs to simulate some of their plan.
- Nial C. was especially helpful this session
- Special kudos to the simulator staff for modeling state & local areas. Great Job!
- Progress of restoration drill was great please keep improvements coming. Bob has done a fantastic job! Should add a sync. Scope to those entities responsible for island ties. Possibly move NYISO group to another room w/phone for realism, but present venue does work as well.
- Excellent work by Bob & all other NYISO Training group in the simulation room w/restoration exercise.