

National Grid LTP Update for 2012 RNA Needs

Joseph J. Hipius

Manager, Transmission Planning-NY

October 24, 2012

2012 RNA Transmission Security Violations

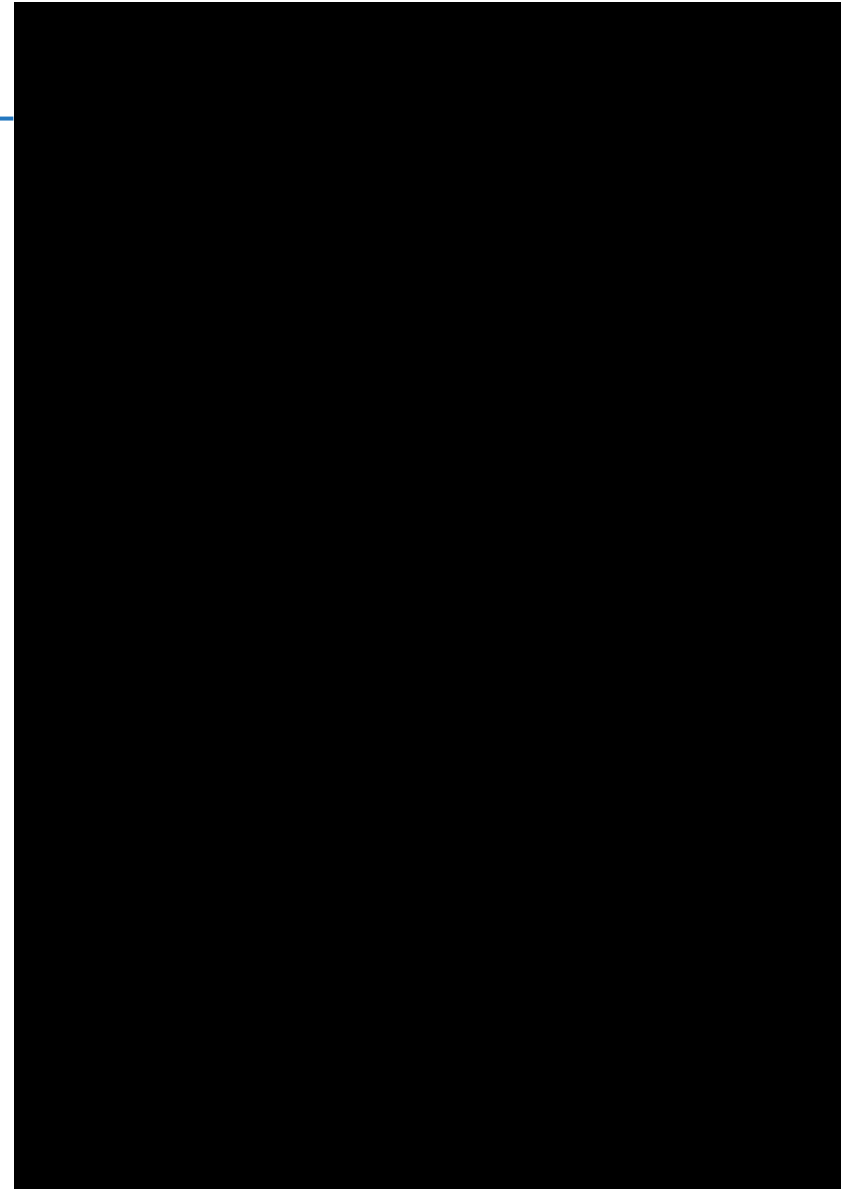
- Two involve National Grid facilities

Table 4-1: 2012 RNA Transmission Security Violations

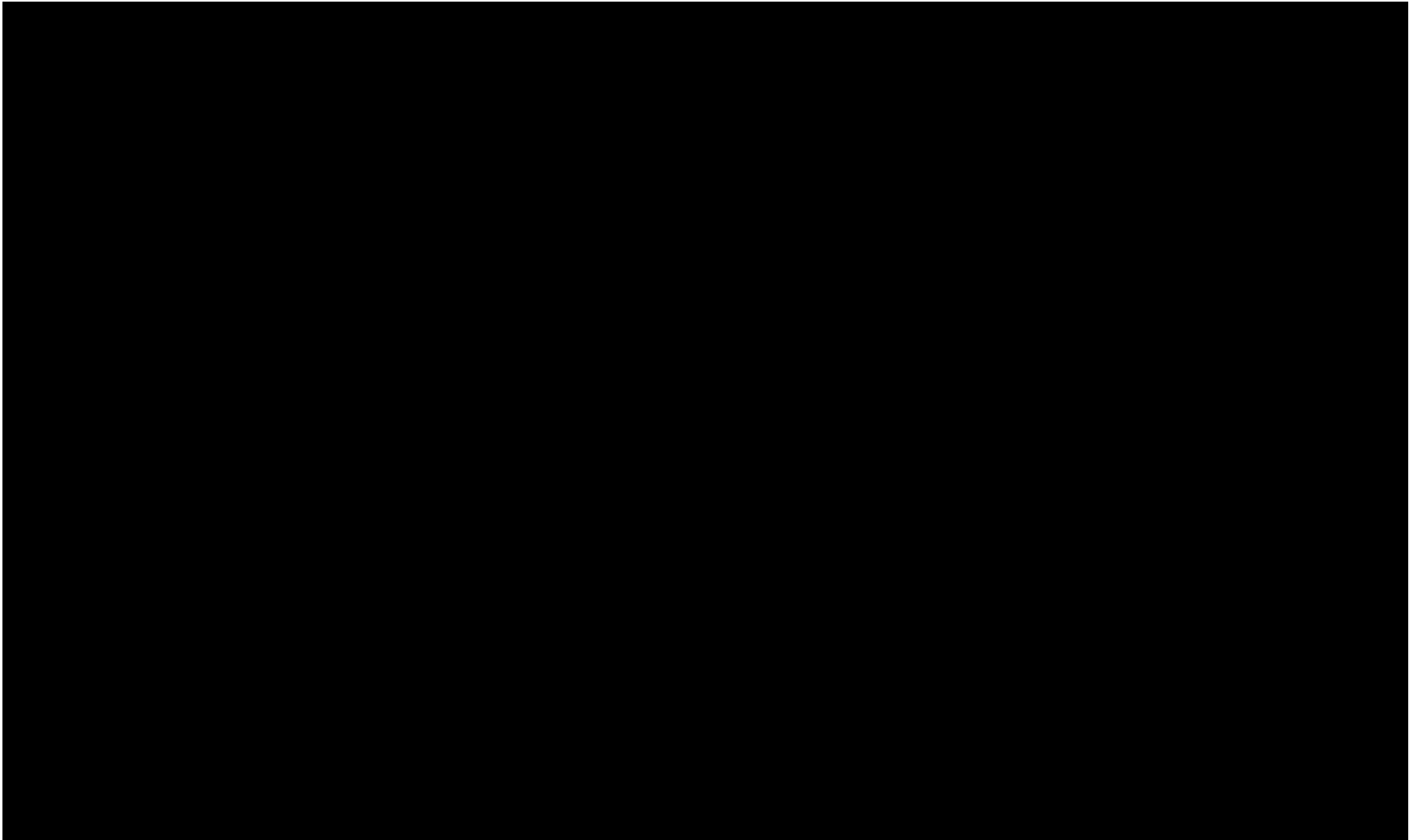
<i>Zone</i>	<i>Owner</i>	<i>Monitored Facility</i>	<i>LTE Rating (MVA)</i>	<i>STE Rating (MVA)</i>	<i>2013 MVA Flow</i>	<i>2017 MVA Flow</i>	<i>2022 MVA Flow</i>	<i>1st Contingency</i>	<i>2nd Contingency</i>
B	RG&E	Sta.80 345/115 #T1	276	300	365	346	353	L/O Sta.80 Transformer	Sta.80 stuck breaker
B	RG&E	Sta.80 345/115 #T3	276	300	357	343	350	L/O Sta.80 Transformer	Sta.80 stuck breaker
B	RG&E	Pannell 345/115 #T3	265	275	284	280	274	L/O Ginna	Sta.80 stuck breaker
C	NatGrid	Clay-Teall 115 #10							
F	NatGrid	Leeds-PV 345							
F	NatGrid	Athens-PV 345							
G	O&R	Ramapo 345/138 #1300	607	688	806	825	872	L/O CoopCorner-Mid-RockTav 345	Ramapo stuck breaker
G	O&R	Ramapo 345/138 #1300	607	688	664	676	727	L/O W.Haverstraw 345/138	Ramapo stuck breaker
G	O&R	Ramapo 345/138 #1300	607	688	659	650	704	L/O CoopCorner-Mid-RockTav 345	Tower 67/68
G	O&R	Ramapo 345/138 #2300	607	688	806	825	872	L/O CoopCorner-Mid-RockTav 345	Ramapo stuck breaker
G	O&R	Ramapo 345/138 #2300	607	688	664	676	727	L/O W.Haverstraw 345/138	Ramapo stuck breaker
G	O&R	Ramapo 345/138 #2300	607	688	659	650	704	L/O CoopCorner-Mid-RockTav 345	Tower 67/68

Syracuse area sources

- [REDACTED]
- [REDACTED]
- N-1-1 contingencies involving these stations stress the 115 kV system.
- Line loadings are affected by Oswego generation levels.



Oswego contingency



Clay-Teall #10 Long Term Solution

- The issue on Clay – Teall #10 will be resolved by replacing 12.8 miles of 4/0 Cu conductor on the line with a larger sized conductor (795 ACSR).
- The expected in-service date for the new conductor is December of 2016.

Clay-Teall #10 Interim Solution

- Until the reconductoring is completed, these measures will solve the problem:
 - [REDACTED]
 - If needed, additional relief during N-1 conditions can be provided [REDACTED]
 - If needed, distribution load normally served from line #10 can be switched during periods of at-risk loading to reduce the flow on the #10 line.

Leeds/Athens – Pleasant Valley

- RNA shows an N-1-1 issue in 2022.
- Studies are in progress to examine possible future system reinforcements.
- National Grid's LTP does not include a solution to this issue.

Southwest area; Dunkirk mothballing

- RNA shows two 250 MW blocks (500 MW total) of generic generation facilities in Zone A as compensatory additions to address the potential mothballing of the Dunkirk plant.
- National Grid is providing its plans, to the extent known, for dealing with the mothballing of Dunkirk.
- Three periods of interest:
 - Now through May 2013
 - June 2013 through May 2015
 - June 2015 and beyond
- Some projects were already planned and would have been needed even if mothballing of Dunkirk was not announced, but the need has become more critical if Dunkirk is not available.



Location of facilities where projects are planned

Southwest area – now through May 2013

- Dunkirk units 1 & 2 remain on line under contract.
- These projects are being implemented immediately, to be in service by May of 2013:
 - Four 75 Mvar 115 kV capacitor banks at Gardenville
 - One 75 Mvar 115 kV capacitor bank at Huntley
 - Connect a 52.5 Mvar 115 kV mobile capacitor bank at Dunkirk
 - One 26 Mvar 115 kV capacitor bank at Homer Hill (in addition to existing capacitor bank there)
 - Tap four distribution substations into different 115 kV lines to relieve line loadings
 - Install second (series) 230 kV bus tie breakers at Huntley and Packard
- Together these will reduce potential dependency on Dunkirk generation in 2013 from two units to one unit.

Southwest area – June 2013 until May 2015

- National Grid is issuing an RFP for resources for this two-year period.
 - Generation resources will be considered.
 - Demand-side resources also will be considered.
 - How this period will be addressed will depend on the responses to the RFP.

Southwest area – June 2015 and beyond

- The following are planned to be in service by June 2015:
 - Five Mile Rd. 345-115 kV substation
 - Two permanent 33.3 Mvar 115 kV capacitor banks at Dunkirk (one will replace the mobile)
 - One 75 Mvar 115 kV capacitor bank at Huntley (in addition to the one that will be there in 2013)

Southwest area – June 2015 and beyond

- The following are also planned but the completion dates are approximate and may be later than 2015:
 - Reconductoring of the Five Mile Rd.-Homer Hill 115 kV lines (2015), 8 miles
 - Reconductoring of Falconer-Warren #171 115 kV line (2015-2016 time frame), 6 miles in NY, 11.5 miles in PA to be done by FirstEnergy
 - Install second (series) 115 kV bus tie breaker at Dunkirk (2018)
 - Gardenville station rebuild, to include replacement of two 125 MVA 230-115 kV transformers with 333 MVA banks (2017)
- Studies are ongoing to determine whether additional projects may be needed in the post-2015 period.
- Completion of the work described should eliminate dependence of the transmission system on Dunkirk generation.