

# **EXHIBIT A**

to

**SUPPLEMENTAL TESTIMONY OF TIMOTHY F. LASKOWSKI  
AND ROGER C. ZAKLUKIEWICZ**

**CONCERNING THE NEED FOR  
THE INTERSTATE RELIABILITY PROJECT**

# New England East-West Solution (NEEWS) 2012 Follow-Up Study Needs and Solutions

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*Planning Advisory Committee Meeting*



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# Purpose

- This presentation details the results of a follow-up needs assessment study which takes into account updates in load forecast and forecasted energy efficiency. The follow-up needs assessment study confirms the reliability needs identified in the April 2011 updated needs assessment
- This presentation details the results of a follow-up solutions study. The follow-up solutions study confirms that the preferred solution from the February 2012 solution study still meets the identified reliability needs

# Background

- See Appendix for recap of all previous presentations related to NEEWS
- Follow-up needs addendum posted to PAC website on July 9, 2012 for 30 day comment period
  - [http://www.iso-ne.com/committees/comm\\_wkgrps/prtcpts\\_comm/pac/reports/2012/index.html](http://www.iso-ne.com/committees/comm_wkgrps/prtcpts_comm/pac/reports/2012/index.html)
- Follow-up solution study addendum will be posted to PAC website in the near future for 30-day comment period

# 2012 FOLLOW-UP STUDY

*Needs Assessment*

# Updated Assumptions

- 2012 CELT Report
  - Last study used 2010 CELT Report
- Year of Study – 2022
  - Last study modeled 2020
- Forward Capacity Auction #6 Results
  - Last study used FCA #4 results
- Forecasted Energy Efficiency through 2022
  - Last study did not model any forecasted energy efficiency



# Updated Assumptions, *cont.*

- May 2012 Revised NEEWS Greater Springfield and Rhode Island Reliability Projects assumed in network model
- Advanced NEEWS projects assumed in network model
  - 336 line (West Medway to NEA Bellingham) reconductor
  - 1410 line (Montville to Buddington) sag elimination
  - Additional series West Medway 106 breaker
- Lake Road generating station in service for all stresses
  - Last study units were assumed out of service for East → West stresses
- Pumped storage units kept at 50% of their output for all dispatches
  - Last study allowed them to go to 100% of their output when in exporting area



## Updated Assumptions, *cont.*

- Wind Power Output – On-shore 5% nameplate in the import area, 100% nameplate in the export area
  - Last study used Qualified Capacity values for all dispatches
- Hydro Power Output – Updated based on ongoing VT/NH, Pittsfield/Greenfield, and GHCC studies
  - Last study used QC values for all dispatches
- Salem Harbor, AES Thames, Bridgeport Harbor 2, Somerset 6, Somerset Jet 2, Holyoke 6&8, Potter Diesel, and Ansonia assumed out of service due to multiple delist bids / retirements / interconnection queue withdrawals
  - Last study all units were available



# Scope of Work

- Same dispatches as last study
  - E→W stress: Millstone 2 & 3 OOS, Berkshire Power OOS
  - W→E stress: Phase II & Seabrook OOS, NB Import 700 MW
  - RI stress: RISE & Manchester 09 OOS
- Two sensitivities run
  - E→W sensitivity: Millstone 2 & 3 OOS, West Springfield 3 OOS, and Berkshire Power In Service (new from last study)
  - W→E sensitivity: Phase II & Seabrook OOS, NB Import 0 MW (same as last study)
- Same N-0, N-1, and N-1-1 thermal and voltage analysis as done in last study. Transfer capability testing was not done as part of the follow-up study

# N-0 Thermal and Voltage Summary

- No voltage or thermal criteria violations



# N-1 Thermal and Voltage Summary

- West → East
  - 328 line (Sherman Rd. to West Farnum) overloads for NB Import 0 MW sensitivity
  - 115 kV path from CT to RI along shoreline overloads for both NB Import 700 and 0 MW cases
- East → West
  - No thermal or voltage violations
- Rhode Island
  - No thermal or voltage violations
- Connecticut
  - No thermal or voltage violations



# N-1-1 Thermal and Voltage Summary

- West → East
  - 345 kV thermal violations in MA and RI up to 126% of LTE rating
  - 115 kV thermal violations in MA, RI, and CT up to 152% of LTE rating
  - 115 kV voltage violations along CT to RI shoreline path
  - Voltage collapse seen in NB Import 0 MW sensitivity
- East → West
  - 345 kV thermal violations in MA up to 105% of LTE rating
  - 115 kV thermal violations along RI to CT shoreline path up to 108% of LTE rating
- Rhode Island
  - Voltage collapse seen in Rhode Island after loss of two 345 kV sources into area, without sufficient local generation, the 115 kV network cannot supply the load
- Connecticut
  - 115 kV thermal violations in CT up to 102% of LTE rating



# Needs Follow-Up Summary

- Confirmed there continues to be a reliability need within the 10-year planning horizon
- Updated assumptions reduced some loadings seen in last study but did not eliminate criteria violations
- Voltage collapse under certain conditions due to loss of 345 kV network in area indicates a strong reliability need for additional support in the Rhode Island area



# 2012 FOLLOW-UP STUDY

*Solutions Study*

# NEEWS Interstate Project Description

- Preferred solution A-1 from February 2012 solutions study
  - New 345 kV 366 line (Millbury to West Farnum)
  - New 345 kV 341 line (West Farnum to Lake Road)
  - New 345 kV 3271 line (Lake Road to Card Street)
  - Rebuild Sherman Rd substation to 2-bay AIS with double series breakers
  - Reconductor 345 kV 328 line (Sherman Road to West Farnum)



# Follow-Up Solution Study Summary

- Current preferred solution presented in February 2012 report continues to meet the identified needs
- All parts of preferred solution still needed within the 10-year planning horizon
- Expected in-service date of project: December 2015





# Questions



# APPENDIX

*Recap of Prior NEEWS Presentations*

# Recap of Prior Presentations

- May 4, 2005 PAC Presentation

[http://www.iso-ne.com/trans/sys\\_studies/rsp\\_docs/pres/2005/transmission\\_study\\_updates.ppt](http://www.iso-ne.com/trans/sys_studies/rsp_docs/pres/2005/transmission_study_updates.ppt)

- Preliminary problem statements

- March 15, 2006 PAC Presentation

[http://www.iso-ne.com/committees/comm\\_wkgrps/prtcpnts\\_comm/pac/mtrls/2006/mar152006/transmission\\_planning\\_update.pdf](http://www.iso-ne.com/committees/comm_wkgrps/prtcpnts_comm/pac/mtrls/2006/mar152006/transmission_planning_update.pdf)

- Interdependencies / expanded analysis
- Better defined problem statements
- Study method and schedule
- Preliminary alternatives

- July 27, 2006 RC Presentation

[http://www.iso-ne.com/committees/comm\\_wkgrps/trans\\_comm/tariff\\_comm/mtrls/2006/jul27282006/a4\\_southern\\_ne.ppt](http://www.iso-ne.com/committees/comm_wkgrps/trans_comm/tariff_comm/mtrls/2006/jul27282006/a4_southern_ne.ppt)

- Detailed problem statements



# Recap of Prior Presentations, *cont.*

- December 15, 2006 PAC Presentation
  - ISO discussed the alternative development process  
[http://www.iso-ne.com/trans/sys\\_studies/rsp\\_docs/pres/2006/southern\\_new\\_england\\_transmission\\_reinforcement\\_presentation\\_for\\_december\\_15\\_2006\\_rc-pac\\_meeting.ppt](http://www.iso-ne.com/trans/sys_studies/rsp_docs/pres/2006/southern_new_england_transmission_reinforcement_presentation_for_december_15_2006_rc-pac_meeting.ppt)
  - Northeast Utilities & National Grid presented their “tentative” preferred alternatives  
[http://www.iso-ne.com/trans/sys\\_studies/rsp\\_docs/pres/2006/review\\_of\\_project\\_solutions\\_by\\_the\\_national\\_grid\\_and\\_northeast\\_utilities\\_project\\_team.pdf](http://www.iso-ne.com/trans/sys_studies/rsp_docs/pres/2006/review_of_project_solutions_by_the_national_grid_and_northeast_utilities_project_team.pdf)
- December 3, 2007 PAC Presentation
  - Focused on advanced portions of Springfield & Rhode Island
  - Briefly reviewed the “needs”
    - Northeast Utilities discussed Springfield projects’ progression  
[http://www.iso-ne.com/trans/sys\\_studies/rsp\\_docs/pres/2007/springfield\\_area\\_solution.pdf](http://www.iso-ne.com/trans/sys_studies/rsp_docs/pres/2007/springfield_area_solution.pdf)
    - National Grid discussed Rhode Island projects’ progression  
[http://www.iso-ne.com/trans/sys\\_studies/rsp\\_docs/pres/2007/rhode\\_island\\_reliability.pdf](http://www.iso-ne.com/trans/sys_studies/rsp_docs/pres/2007/rhode_island_reliability.pdf)



# Recap of Prior Presentations, *cont.*

- May 19, 2008 PAC Presentation
  - ISO presented expanded needs and solutions discussion  
[http://www.iso-ne.com/trans/sys\\_studies/rsp\\_docs/pres/2008/a\\_snetr-neews\\_5-19-08.pdf](http://www.iso-ne.com/trans/sys_studies/rsp_docs/pres/2008/a_snetr-neews_5-19-08.pdf)
  - Northeast Utilities & National Grid presented additional background and proposed project details  
[http://www.iso-ne.com/committees/comm\\_wkgrps/prtcpnts\\_comm/pac/ceii/mtrls/2008/may192008/grid-nu\\_neews.pdf](http://www.iso-ne.com/committees/comm_wkgrps/prtcpnts_comm/pac/ceii/mtrls/2008/may192008/grid-nu_neews.pdf)
- June 17, 2009 PAC Presentation  
[http://www.iso-ne.com/committees/comm\\_wkgrps/prtcpnts\\_comm/pac/ceii/mtrls/2009/jun172009/neews.pdf](http://www.iso-ne.com/committees/comm_wkgrps/prtcpnts_comm/pac/ceii/mtrls/2009/jun172009/neews.pdf)
  - Focused on GSRP & RIRP updated needs assessments
  - These assessments showed continuing need
  - Updated assessments were in progress for Interstate and CCRP

# Recap of Prior Presentations, *cont.*

- August 12, 2010 PAC Presentation

[http://www.iso-ne.com/committees/comm\\_wkgrps/prtcpnts\\_comm/pac/ceii/mtrls/2010/aug122010/neews\\_interstate.pdf](http://www.iso-ne.com/committees/comm_wkgrps/prtcpnts_comm/pac/ceii/mtrls/2010/aug122010/neews_interstate.pdf)

- ISO presented the updated needs assessment results (long version) for the Interstate component

- November 16, 2010 PAC Presentation

[http://www.iso-ne.com/committees/comm\\_wkgrps/prtcpnts\\_comm/pac/ceii/mtrls/2010/nov162010/neews.pdf](http://www.iso-ne.com/committees/comm_wkgrps/prtcpnts_comm/pac/ceii/mtrls/2010/nov162010/neews.pdf)

- ISO presented the updated needs assessment results (short version) for the Interstate component

# Recap of Prior Presentations, *cont.*

- November 30, 2010 PAC Presentation
  - ISO again presented the updated needs assessment results (short version) for the Interstate component  
[http://www.iso-ne.com/committees/comm\\_wkgrps/prtcnts\\_comm/pac/ceii/mtrls/2010/nov302010/news\\_irp.pdf](http://www.iso-ne.com/committees/comm_wkgrps/prtcnts_comm/pac/ceii/mtrls/2010/nov302010/news_irp.pdf)
  - Northeast Utilities & National Grid presented the preferred Interstate solution  
[http://www.iso-ne.com/committees/comm\\_wkgrps/prtcnts\\_comm/pac/ceii/mtrls/2010/nov302010/news\\_irp\\_nu\\_ngrid.pdf](http://www.iso-ne.com/committees/comm_wkgrps/prtcnts_comm/pac/ceii/mtrls/2010/nov302010/news_irp_nu_ngrid.pdf)
- September 21, 2011 PAC Presentation
  - National Grid presented the revised Sherman Road Switching Station plan (part of Interstate solution)  
[http://www.iso-ne.com/committees/comm\\_wkgrps/prtcnts\\_comm/pac/ceii/mtrls/2011/sep212011/sherman\\_road\\_pres.pdf](http://www.iso-ne.com/committees/comm_wkgrps/prtcnts_comm/pac/ceii/mtrls/2011/sep212011/sherman_road_pres.pdf)



# Recap of Prior Presentations, *cont.*

- March 13, 2012 RC Presentation

[http://www.iso-ne.com/committees/comm\\_wkgrps/relbty\\_comm/relbty/ceii/ceii\\_mtrls/2012/mar132012/a3\\_3\\_news\\_interstate.pdf](http://www.iso-ne.com/committees/comm_wkgrps/relbty_comm/relbty/ceii/ceii_mtrls/2012/mar132012/a3_3_news_interstate.pdf)

- Northeast Utilities & National Grid presented status updates for all 4 components of NEEWS as they are seeking an updated Proposed Plan Application approval (based on modifications since the 2008 approval)

- April 17, 2012 RC Meeting

[http://www.iso-ne.com/committees/comm\\_wkgrps/relbty\\_comm/relbty/ceii/ceii\\_mtrls/2012/apr172012/a3\\_1\\_news\\_lvl3\\_ppas.zip](http://www.iso-ne.com/committees/comm_wkgrps/relbty_comm/relbty/ceii/ceii_mtrls/2012/apr172012/a3_1_news_lvl3_ppas.zip)

- NEPOOL Reliability Committee scheduled to vote on PPA recommendation

- April 18, 2012 PAC Meeting

[http://smd.iso-ne.com/committees/comm\\_wkgrps/prtcpts\\_comm/pac/ceii/mtrls/2012/apr182012/iso\\_news\\_update.pdf](http://smd.iso-ne.com/committees/comm_wkgrps/prtcpts_comm/pac/ceii/mtrls/2012/apr182012/iso_news_update.pdf)

- ISO presented update on all changes associated with NEEWS since original 2008 version of project