

# NYSRC Installed Capacity Subcommittee

Meeting #138

August 1st, 2012

9:30 a.m. – 3:00 p.m.

Meeting Minutes

## Attendees

	Present	Tel
Members / Alternates:		
Mr. Curt Dahl (LIPA) .....	<input type="checkbox"/>	<input type="checkbox"/>
Ms. Polina Adelson (LIPA) .....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Mr. Yuri Fishman (LIPA) .....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ms. Kathune Zannat (LIPA) .....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ms. Erin Plasse (CHG&E).....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Mr. Rich Wright (CHG&E).....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Luting Pan (Con Edison).....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mr. Gregory Chu (Con Edison), <b>Secretary</b> .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mr. Syed Ahmed (National Grid) .....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Bart Franey (National Grid).....	<input type="checkbox"/>	<input type="checkbox"/>
Mrs. Patricia Caletka (NYSEG-RGE) .....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Edward Gilroy (NYSEG-RGE) .....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Mr. John Tigue (NYSEG-RGE) .....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Mr. Robert Boyle (NYPA), <b>Chairman</b> .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mr. Andrea Fossa (NYPA) .....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Bradley Kranz (NRG Energy, Inc.).....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Chris LaRoe (IPPNY).....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Mark Younger (Slater Consulting - Generation Owners) .....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Mark Cordeiro (Municipal Power Agency).....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Michael Mager (Couch White, LLP), <b>EC Chairman</b> .....	<input type="checkbox"/>	<input type="checkbox"/>
Advisers/Non-member Participants:		
Mr. John Adams (NYISO) .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mr. Peter Carney (NYISO) .....	<input type="checkbox"/>	<input type="checkbox"/>

Mr. Frank Ciani (NYISO).....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mr. Dave Lawrence (NYISO) .....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Greg Drake (NYISO).....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mr. Bill Lamanna (NYISO) .....	<input type="checkbox"/>	<input type="checkbox"/>
Mrs. Kathy Whitaker (NYISO) .....	<input type="checkbox"/>	<input type="checkbox"/>
Ms. Mariann Wilczek (NYISO) .....	<input type="checkbox"/>	<input type="checkbox"/>
Ms. Erin Hogan (NYSERDA) .....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Ed Schrom (NYPSC) .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mr. Al Adamson (Consultant).....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Frank Vitale (Consultant) .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mr. Arthur Maniaci (NYISO) .....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Scott Leuthauser (Consultant for H.Q. Services) .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mr. Henry Chao (NYISO).....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mr. Howard Tarler (NYISO) .....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Wes Yeomans (NYISO).....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Paul Gioia (NYSRC) .....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Dana Walters (NYISO) .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ms. Donna Pratt (NYISO) .....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. David Allen (NYISO).....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mr. Mark Walling (GE) .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mr. Gary Jordan (GE) .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Guests Present:

Mr. Charlie Shafer (AES).....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Dean Ellis (Dynergy).....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Jim D'andrea (Transcanada) .....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Alan Ackerman (Customized Energy Solutions).....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Dr. Roy Shanker .....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Phil Fedora (NPCC).....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Mr. Arvind Jaggi (NYISO) .....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Frank Francis (Brookfield).....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Tom Patrit (EPS) .....	<input type="checkbox"/>	<input type="checkbox"/>
Mr. Ruben Brown (The E Cubed Co.) .....	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Mr. John Dalwin.....	<input type="checkbox"/>	.....	<input type="checkbox"/>
Mr. Richard Quimby.....	<input type="checkbox"/>	.....	<input type="checkbox"/>
Mr. Randy Wyett (NYISO).....	<input type="checkbox"/>	.....	<input type="checkbox"/>
Mr. John Dowling (Luthin Associates).....	<input type="checkbox"/>	.....	<input type="checkbox"/>
Mr. Glenn Haake (Haake Energy Consulting LLC).....	<input checked="" type="checkbox"/>	.....	<input type="checkbox"/>
Mr. Matt Renninger (Energy Curtailment Specialist) .....	<input type="checkbox"/>	.....	<input type="checkbox"/>
Ms. Kathy Slusher (SUNY) .....	<input type="checkbox"/>	.....	<input type="checkbox"/>
Mr. Nicholas Occhionero (NYPSC) .....	<input type="checkbox"/>	.....	<input checked="" type="checkbox"/>
Mr. Timothy G. Lundin (Customized Energy Solutions).....	<input type="checkbox"/>	.....	<input checked="" type="checkbox"/>
Mr. Norman Mah (Con Edison) .....	<input type="checkbox"/>	.....	<input checked="" type="checkbox"/>

### 1. New MARS Model

Mark Walling (GE) was present to discuss the new features in MARS version 3.16. One of the most significant changes is the new ability to input multiple load shapes by load level. There were also additional masking functions and EL 2 scheduling logic enhancements, along with additional debugging outputs.

Gregory Drake (NYISO) was interested in the random renewable profile modeling, and Mr. Walling described the change as a new ability to specify a 10-day window that the profile would follow to generate a random wind shape. The old version of MARS only allowed a monthly window to be specified.

Frank Ciani (NYISO) asked about the additional data masking functions and Mr. Walling said that this is an enhancement to the old model, the area capacity and flow output data in particular.

Chairman Bob Boyle (NYPA) asked if the masking enhancement will meet the NYISO legal requirement for OT09 submission to participants. Mr. Drake said that there will be no change from the normal submission process.

Mr. Walling went into more details about the multiple load shapes and the effects this function has on the load forecast uncertainty modeling. The current way involved a single load shape defined by user, and the per unit load multiplier will

adjust the ENTIRE shape by the input multiplier values at different level of probabilities (7 bin levels). The new version of MARS allows the user to input a different shape for each of the multiplier bin levels. There is a limit of 10 load levels per area for which a shape can be defined, but each year can have a different shape for each of the 10 load levels.

Gary Jordan (GE) stated that the new method will provide variations on the load shape due to economic and/or weather uncertainties. This method can introduce variations that per unit multipliers cannot provide in the previous MARS version.

Mr. Drake asked if the external area load shape needs to be weighted the same way with multiple shapes. Mr. Jordan recommended that New York should have the multiple shapes introduced first. Chairman Boyle believed that we would need to know the probability of shapes used for external areas. Scott Leuthauser (HQUS) agreed that it may be necessary to avoid getting a resultant shape that reflected, for example, a hot New York but a cold New England model. John Adams (NYISO) mentioned that Arthur Maniaci has already looked at the probabilities for multiple shapes and he has some preliminary results.

Chairman Boyle wondered if these changes will delay the model runs. Mr. Drake said that the changes in time duration needed to complete a model run will be negligible. The difficult part, as explained by Mr. Drake, will be what probabilities to assign to the load shapes for input.

Mr. Ciani asked where they can confirm from the output that the shape load level input was done correctly. Mr. Walling said that the load section in the output file that the NYISO used in the past will provide that information.

Chairman Boyle asked about the multiple shapes' effect on the current method of Load Forecast Uncertainty (LFU). Mr. Jordan stated that the same method should continue to be utilized in the model. Mr. Adams said that we used to use a single shape for each of the bins, whereas the new method requires us to figure out which shape to use for each of the bins. Chairman Boyle thus suggested that LFU can then be decoupled to be used for economic variation, since multiple shapes accounted for the weather already.

## 2. GE/NYISO Quality Assurance Review Status

Mr. Drake presented the letter of findings from GE that detailed all the different items GE identified through its quality assurance process performed on the MARS base case.

Mr. Walling pointed out the plots that showed the forced outage rate from the units had very little change when compared with the last year's base case. Unfortunately, Mr. Ciani mentioned that the model GE received has not yet incorporated the APA method and thus the comparison was invalid.

Mr. Walling said that GE used the assumption matrix and verified all the parameters when compared to the base case.

Mr. Walling mentioned that the transfer limits were not the same between what is shown in the matrix versus the case. Mr. Ciani replied that the transfer limit values were from the RNA study.

Mr. Ciani will verify the EOP values for GE, as they have identified a difference between the model and matrix values.

Glenn Haake (Haake Energy Consulting) had a question about the SCR numbers presented on the screen. The NYISO will check and ensure that the correct SCR numbers will be used in the model.

Gregory Chu (Con Edison) asked if the TOs (in particular Con Edison and LIPA) will receive the MIF for quality assurance as well. Mr. Drake confirmed that a masked version of the database will be sent to the TOs, but the exact timing is not known at this time. **(AI 138-1)**

### **3. Executive Committee Meeting Summary**

Chairman Boyle mentioned that the Executive Committee (EC) approved the APA method for inclusion in this year's study, with the caveat that the NYISO would continue with the study to identify deviations between market and APA EFORd. They suggested that if the method resulted in some unforeseen results, the ICS should stop and reconsider the methodology. The EC also suggested that Con Edison continue their conversation with the APA code programmer Ron Fluegge to work out any outstanding issues so that Con Edison would be comfortable with the program.

The EC also agreed on using 2002 load shape for this base case since the new version of MARS will incorporate multiple load shapes, and thus by going to a 2007 shape this year, there will be another change next year to the multiple shape model. The EC decided to keep stability for this year's model, and a sensitivity run for the multiple shape will provide an insight into the result of the load shape change. Furthermore, a sensitivity run on the "typical" shape, which was deemed to be the 2007 shape, will also provide additional observations on a model using a different shape.

Mr. Ciani asked if the EC wanted a tangent 45 curve for the 2007 shape sensitivity run. Chairman Boyle said that the EC would like the curve performed on 2007 shape. The ICS would have to address the necessity of a tangent 45 curve on major model changes in the future.

Mr. Haake asked if the EC discussed the proper SCR derating method. Chairman Boyle said that the committee members were more interested in the ACL/CBL comparison study performed by the NYISO.

### **4. Assumptions Matrix**

Mr. Drake mentioned that there isn't any new information to update the ICS committee on the Assumption Matrix, other than the topology would need an update to reflect the new limits listed in the RNA study findings.

Chairman Boyle wondered if the NYISO will include the charts comparing market and APA generated EFORD based on unit sizes in the assumption matrix as background material. Mr. Drake mentioned that the NYISO will perform additional testing with the APA software.

Mr. Chu asked for a clarification on the Dunkirk units as they do not appear in the matrix as retired units, even though the notice of intent was previously filed. Mr. Chu was confused by the NYISO's email response about Dunkirk units are needed for reliability purposes (voltage concerns) and "a solution has been found" was the reason that the units are still in the base case. Mr. Drake clarified that Dunkirk 3 and 4 can shutdown without reliability issues but units 1 and 2 will need a solution before they can shutdown. In other word, a solution has "not" yet been identified and therefore Dunkirk units were not on the retired units list within the matrix. Mr. Adams said that the transmission owner is responsible for providing a solution.

Chairman Boyle suggested that a sensitivity run should be performed on a base case that would exclude all the proposed retiring/mothball units. The ICS agreed.

## **5. Parametric Study**

Mr. Drake said that each of the parameters in the assumption matrix was implemented, non-cumulatively, to last year's base case for the parametric study as usual. The downstate retirements were mostly poor performers (high forced outage rates) and as a result, the NYISO expected the IRM to decrease. Interestingly, the IRM increased instead. Mr. Drake explained that as the downstate units were retired, the LOLE went above 0.1 and resulted in a more constrained system. The next step is to add capacity to all zones to bring the system back to LOLE of 0.1. However, the added upstate capacity aren't as effective as downstate capacity at driving down the LOLE, the system now required more added capacity to maintain the LOLE at 0.1. Thus, the reserve margin looked to be higher than the tangent 45 results. The true effect of this

parameter on the IRM is distorted because of the methodology used to conduct the sensitivity. This is similar to the wind study distortion on the IRM.

The NYISO recommended that the retired units would be replaced by a generic unit with the average outage rate of the other similar units in the same area first; afterwards one can add the remaining capacity statewide to bring the system back to LOLE of 0.1.

Chairman Boyle asked if Policy 5 describes the proper method to mitigate this problem and Mr. Drake said that it does not. Chairman Boyle said that if we are to perform the NYISO recommended method, we would need some sort of a write-up to describe the methodology in detail.

Mr. Drake said that he does not understand why a higher load forecast would cause a decrease in the IRM. Mr. Adams stated that typically when the load is increased in zones J and K, the IRM tend to increase, not decrease. One theory Mr. Adam presented is that as more capacity is added to all zones to counteract the increase in load, the new capacity dilutes the impact of the upstate wind capacity and caused the IRM to decrease. In other words, adding generic capacity helped the fleet availability.

The DMNC ratings were also modified to the gold book values and the IRM decreased due to a lack of wind capacity that never materialized from last year's case. This reinforced Mr. Adam's theory from the load forecast.

Mr. Leuthauser asked how HTP is modeled in the case. Mr. Drake mentioned that it is modeled just like the Neptune line. Mr. Leuthauser wondered if the HTP should be modeled as 330 MW, instead of 660 MW. He was under the impression that PJM could only send 330 MW through this line. Dana Walters (NYISO) mentioned that he believed if the system needed 660 MW, there will be enough emergency assistance to flow 660 MW from PJM to NYCA. David Allen (NYISO) said that the NYISO believe HTP can support 660 MW but they will confirm.

Cross Sound Cable modeling has been changed based on GE discovery. Instead of returning excess capacity to CT, the capacity would be returned to Western Massachusetts. Chairman Boyle wondered about the impact. Mr. Drake said that it does not affect NYCA as much as New England.

Mr. Drake said that due to a wider upper band (larger upper band multiplier value) in the load forecast uncertainty table, the IRM should increase and it did.

The new units that were added were mostly upstate wind units. These units should increase the IRM due to their low availability characteristic and the IRM did increase when this parameter was introduced into the base case.

The lower SCR registration values decreased the IRM because less SCR meant less poor performing capacity. Furthermore, this was coupled by the fact that the SCR has been corrected so that the SCR would no longer be affected by the load levels, as discovered in the last year's base case when SCRs were represented as a percentage of the area load.

A drop in EDRP registration led to an increase in IRM, which was expected.

Non-SCR/Non-EDRP had an unexplained result on the IRM. The NYISO will need to investigate further. **(AI 138-2)**

Mr. Drake stated that cable forced outage rates should increase due to long outages on some of the interface ties. The IRM did increase as expected. Mr. Drake also mentioned that Con Edison sent a revised version of the cable EFORD table that did not work when entered into the model. Mr. Chu will check and rectify the issues. **(AI 138-3)**

APA transition rates caused the IRM to decrease as expected.

Mr. Drake said external control areas will be providing more support (particularly PJM) and a decrease in IRM was observed and expected.

Mr. Drake suggested that a tangent 45 be performed after the parametric changes. The ICS agreed with the suggestion. **(AI 138-4)**

## **6. Additional EFORd/APA model testing**

Mr. Drake stated that he did satisfy Con Edison's request to group the units in MW ranges for EFORd comparison. The units were classified into 3 separate MW groups. 0-50MW, 51-150MW, 151+MW, and they were presented in both sorted and non-sorted graphs for analysis, with standard deviation of 3.4, 2.7, and 2.6 for each of the respective MW ranges.

Mr. Chu mentioned that Con Edison received and reviewed the charts. Con Edison still finds the deviations from units in the 151+MW range troublesome. Dr. Kelvin Chu still has reservation about whether the code is ready for use due to these variations. Dr. Chu has been in contact with Ron Fluegge regarding using the New England code's output for comparison. Mr. Drake thought the code Mr. Fluegge originally referred to was a filtering code that would pick up erroneous input. He mentioned that the NYISO is looking to implement this filtering code and this code may not be helpful in the EFORd comparison.

## **7. Proposed Sensitivity Cases**

Chairman Boyle said Al Adamson (NYSRC) put together the list of sensitivity cases. Cases 1 through 12 are typical sensitivity cases that are performed annually. Cases 13 through 17 are new proposed cases for this year's study.

Chairman Boyle mentioned that either case 13 (2007 load shape) or 14 (multiple load shape) will probably need a tangent 45, but not both.

Mr. Chu suggested 2 cases (cases 18 and 19) to be added. Mr. Chu recommended that the ICS look at the possibility of excluding HTP altogether from the base case to see its effect on the IRM, due to the recent discussion and disagreement on the project in-service date, not to mention possible unforeseen factors like construction delays that may push the project past the summer

months. Chairman Boyle suggested that HTP to be in service at October 1<sup>st</sup> instead for the sensitivity case, as it is unlikely that HTP will be delayed indefinitely.

Mr. Chu also recommended that we should study the effect of modeling HTP as full emergency assistance, as compared to assigning a UDR amount and modeling the remaining MW as full emergency assistance. Chairman Boyle agreed. Mr. Drake mentioned he's more inclined to see a sensitivity case done on a "limited" flow on the HTP, as Mr. Leuthauser previously mentioned about HTP being incapable of sending the full 660 MW. Mr. Leuthauser and Mr. Chu both stated that if the NYISO studied the line and determined that there is indeed a "limitation" on the HTP flow, the new limited flow capability would probably need to go into the base case directly. Mr. Drake has a concern about accidentally disclosing non-public information by performing the lack of UDR case. He will discuss with the other NYISO staff members.

Norman Mah (Con Edison) said on the phone that PJM interconnect states that HTP will have 320 MW firm withdrawal rights, and 350 MW non-firm withdrawal rights. Mr. Leuthauser is fine with this discovery and the assignment of full 660MW to the line.

Case 20 will be a sensitivity case on excluding any questionable retirement/mothball units from the base case.

## **8. August Actions**

Mr. Drake said that OT09 files will be shared with the TO members who have signed the confidentiality agreement. Mr. Chu said he recalled more than just the OT09 file was provided last year. Polina Adelson (LIPA) requested OT07 to be submitted to the TOs. Mr. Ciani said that OT07 will need further masking as the confidential transition rates are readily visible on this output file. **(AI 138-5)**

Secretary: Gregory Chu

*(Con Edison)*

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Next meetings:

Meeting 139, Wednesday, September 5<sup>th</sup> at NYISO HQ

Meeting 140, Wednesday, October 3<sup>rd</sup> at NYISO HQ

Meeting 141, Tuesday, October 30<sup>th</sup> at NYISO HQ

Meeting 142, Tuesday, November 27<sup>th</sup> at NYISO HQ

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