Joint Meeting of the
New York State Reliability Council, L.L.C. (NYSRC)
Reliability Rules Subcommittee (RRS) /
Reliability Compliance Monitoring Subcommittee (RCMS)
Thursday, June 30, 2016

Minutes of RRS Meeting No. 203

RRS Members and Alternates:
Roger Clayton, Electric Power Resources (Chairman)
Larry Hochberg, NYPA (Vice Chairman) (Phone)
Martin Paszek, Con Edison (Secretary) (Phone)
Matilda Duli, Con Edison (Phone)
Zoraini Rodriguez, PSEG_LI/LIPA (Phone)
Roy Pfleiderer, National Grid (Phone)
Erin Doane, Central Hudson

Non-Voting Participants:
Al Adamson, Consultant
Jim Grant, NYISO

Guests:
Dan Head, Con Edison (Phone)
Brian Shanahan, National Grid
Chris Sharp, NYISO
Paul Gioia, Counsel
David Johnson, Read & Laniado, LLP
Wes Yeomans, NYISO (Partial)
Liam Baker, Eastern Power Generating Company (Phone) (Partial)

RRS Meeting # 203 was called to order by Mr. Clayton at 9:30 am.

1. Introduction

1.1 Executive Session

None requested.

1.2 Requests for additional Agenda Items

Mr. Clayton requested the following Agenda Item:

3.2.2 NYSRC Rule C.4 and NERC EOP-010 GMD Comparison

2. Approval of Minutes / Action Items

2.1 Approval of RRS Minutes #202

RRS reviewed the Minutes from the last RRS meeting. On page 4, Mr. Hochberg asked what the following statement "*Mr. Yeomans stated that to a degree that any unit would that trips real time*" meant. Mr. Paszek stated that this sentence was an answer to a question that Mr. Gioia asked in a prior sentence (as documented in the Meeting Minutes #202). Mr. Yeomans confirmed and stated that the NYISO counts on these units for system reliability. In addition, Mr. Yeomans stated that the NYISO is counting on all units for system reliability that sell capacity in the day-ahead market (and then the NYISO selects a subset of units, based on cost, to be run the next day). Mr. Clayton stated that the context of that question was 'those' units (i.e. dual fuel capable). Mr. Yeomans restated that the NYISO counts on all units for system reliability. Mr. Gioia asked if the NYISO is counting on 'these' units that would be called upon to swap fuels; for system reliability. Mr. Johnson second Mr. Gioia. Mr. Johnson asked if 'these' units, that were identified as 'dual fuel' capable in the fall survey, were not able to swap fuel when required would there be a system reliability violation. Mr. Yeomans stated that this issue would only happen on very cold days when there is a gas shortage. Mr. Yeomans also stated that there would be a reliability concern if a unit presents itself as a dual fuel unit, but cannot perform as such. Mr. Clayton suggested stopping the discussion, as there is a separate Agenda Item (Agenda Item 3.1.1) that will deal with this issue, and suggested a revision to the original sentence. The statement in question was replaced with "*Mr. Yeomans stated that the NYISO is counting on these units in the annual fall survey*".

Additional minor comments were provided to the Minutes and with these changes, Minutes are considered as final.

2.2 RRS 202 Status Report to EC

Mr. Clayton presented to the RRS a copy of the 'RRS 202 Status Report to EC', which he develops for the purpose of summarizing at the next NYSRC Executive Committee meeting, what RRS has done at its prior meeting.

2.2 RRS Action Items List

Action Item 202-1: On agenda today and status is changed to 'Completed'.
Action Item 202-2: On agenda today and status is changed to 'Completed'.

Action Item 202-3: Mr. Adamson stated that the review of the NYSRC RR&CM Glossary Section has been completed and all references to a NYISO Manual 'section' or to a NYISO OATT 'section' were removed (broad references to a NYISO Manual or to a NYISO OATT were kept). Mr. Adamson stated that the next revision of the NYSRC RR&CM – revision 37 – has those changes included. The status is changed to 'Completed'.

Action Item 202-4: On agenda today and status is changed to 'Completed'.
Action Item 202-5: On agenda today and status is changed to 'Completed'.
Action Item 202-6: Due Date changed to 8/4/2016.

Action Item 201-7: The status is changed to 'Completed'.

Action Item 197-8: On-going.
Action Item 191-2: On-going.
Action Item 141-1: On-going.
Action Item 139-1: On-going.
Action Item 87-5: On-going.
Action Item 83-8: On-going.

3. NYSRC Reliability Rules Development

3.1 Outstanding PRR List

PRR 128 is tabled pending NPCC A-10 revision.

PRR 130 was approved by the NYSRC Executive Committee as final and will be included in the next revision of the NYSRC RR&CM – revision 37.

PRR 132 was approved by the NYSRC Executive Committee to post for comments. **Action Item 203-1:** Request posting of PRR 132 for Public Comment (on the NYSRC web site).

PRR 131 and 133 are on the table for today's discussion.

3.1.1 PRR 131 I.6 Modeling & Data (Dual fuel Generating Unit Testing)

Mr. Clayton provided a short summary of the last meeting's discussion on this subject where the NYISO described its procedures in describing dual fuel units (i.e. NYISO Gold Book & Annual Fall Survey). Mr. Clayton stated that the units that fall under the Annual Fall Survey would be subject to this PRR. Mr. Clayton also stated that these units made themselves 'voluntarily' available to the NYISO (based on their perceived economic benefits; ex. running on oil when gas is curtailed). Mr. Yeomans agreed; with the exception of dual fuel units in Zone J and K (where local NYSRC Reliability Rules may require certain units to run on oil, or be prepared to swap from gas to oil).

Mr. Yeomans presented the *2015-2016 Winter Capacity Assessment & Winter Preparedness* presentation. The copy of the presentation was forwarded to the group by Mr. Grant during the RRS meeting.

Mr. Yeomans stated that in late August / early September the NYISO performs Winter Capacity Assessment / Winter Preparedness. The NYISO has been doing this for about 4 years.

Mr. Yeomans described on a very high level the NYISO's Annual Fall Survey and the typical questions the NYISO asks. Mr. Clayton asked Mr. Yeomans if the NYISO asks (the Generator Owners) when a most recent swap from Gas to Oil was attempted. Mr. Yeomans stated that he does not believe the NYISO asks this question. Mr. Gioia asked if the NYISO would know, through other channels, that a unit attempted a fuel swap. Mr. Yeomans stated that the NYISO through its MMA (**M**arket **M**itigation and **A**nalysis Department) would ask these kind of questions, but that would occur in the May timeframe. Mr. Johnson asked Mr. Yeomans if there is a similar Summer Capacity Assessment. Mr. Yeomans answered that, from a practical perspective, gas shortage may occur in the winter time due to retail customers having the priority for gas to heat their homes, thus the NYISO does not do a similar survey for the summer capability period. However, Mr. Yeomans reminded the group that due to Zone J and K Minimum Oil Burn (MOB) Reliability Rules, certain downstate units will be asked either to run on oil or be able to swap from gas to oil. Mr. Johnson also asked Mr. Yeomans if the NYISO is assuming all dual fuel units, which have identified themselves as dual fuel units in the NYISO's Annual Fall Survey, would perform as required, or is there a discount; based on prior winter experiences. Mr. Yeomans stated that the NYISO assumes that all these units will be capable (there is no de-rate factor).

Mr. Yeomans described the calculation as shown on page 4 of the provided presentation for both the Baseline and 90% forecast. Mr. Yeomans stated that based on this calculation the capacity margin is a comfortable ~9,000 MW (Baseline forecast) and ~7,500 MW (90 forecast). This is the starting point of the Winter Capacity Assessment. However, Mr. Yeomans stated that this does not mean that day-to-day the NYISO commits all available resources. The NYISO commits resources to cover the projected load plus reserves and if dual fuel units, which are committed as part of a day ahead mix, cannot perform as required (due to gas shortage) this could result in a reliability issue. Mr. Yeomans then proceeded to describe the calculation as shown on page 5 of the provided presentation for both the Baseline and 90% forecast. Mr. Yeomans stated that all lines up to line 7a are the same as in the table on page 4. In order to stress the system, line 7a subtracts all Gas Only units (line 7a; 6,540MW is a sum of 'truly' gas only units and units that, although listed as dual fuel in the NYISO Gold Book, are not capable to perform as a dual fuel unit(s) per the NYISO's Annual Fall Survey). Line 7 presents stressed case capacity margins which are less 'comfortable' ~2,500 MW (Baseline forecast) and ~950 MW (90% forecast). The NYISO then adds units that have FIRM Gas contracts which increases the margins (line 8) to more 'comfortable' capacity margin of ~5,400 MW (Baseline forecast) and ~3,800 MW (90% forecast).

Mr. Yeomans reiterated that these calculations are Capacity resource calculations and in real-time these margins are much tighter.

Mr. Clayton stated that this may be too optimistic. Mr. Yeomans agreed stating that the NYISO does not commit all available resources in real time. Mr. Clayton then asked why not perform this analysis in real time. Mr. Yeomans stated that the NYISO could, but it is not doing that because the key for the NYISO is the day-head.

Mr. Johnson asked why the rule is needed for upstate dual fuel units if the 'need' and the recorded failures are downstate.

Mr. Clayton stated that it appears that RRS needs to put in a statement into the PRR that would make this PRR applicable only to the dual fuel units identified in the NYISO's Annual Fall Survey.

Mr. Johnson asked if the NYISO has any documentation that a failure of upstate dual fuel swap from gas to oil (the unit tripped) created a reliability concern. Mr. Yeomans stated that he does not recall. Mr. Yeomans stated that the NYISO is aware of the downstate issues with units tripping while attempting a fuel swap from gas to oil and that these units are already being tested. Mr. Gioia then asked why we need this rule if the downstate units already test. Mr. Paszek stated that there are no reliability rules that require the MOB units to test; and that they are not being tested.

Mr. Baker stated that this rule started as a response to real time failures of combined cycle units attempting dual fuel swap from gas to oil. Mr. Baker also stated that his Company's Astoria 3 and 5 steam electric units have been providing MOB service since the beginning of MOB and that the service has been exemplary. Mr. Baker stated that we do not need new rules to practice what they have been doing for decades. Mr. Gioia asked Mr. Baker if Astoria 3 and Astoria 5 units are tested. Mr. Baker responded that no, as 'we' are providing an on-going service and that the technology is completely different from combined cycle units. Mr. Baker stated that there is nothing 'unusual' having a steam electric unit running on 100% oil, 25%, etc. Mr. Gioia asked Mr. Baker if testing is necessary. Mr. Baker stated that testing is not necessary as steam electric can burn a mix of fuels while a combined cycle cannot.

Mr. Yeomans agreed with Mr. Baker that the issue is with certain combined cycle units, and also stated that this group reviewed a performance record that showed ~10% failure rate of fuel swaps from gas to oil.

M. Clayton asked Mr. Baker if the RRS understood Mr. Baker's claim that there is no need to test the steam electric unit's transition from 100% (16 guns) to 25% (4 guns). Mr. Baker stated yes, there is no need to test.

Mr. Gioia asked if the noted ~10% failure rate of fuel swaps from gas to oil were observed on combined cycle units. Mr. Grant stated yes.

Mr. Clayton stated that based on all the input so far, RRS should do what has been done in the Black Start reliability rules addition, and focus on the issue at hand; to look at the combined cycle units in Zone J and develop a reliability rule on that basis.

Mr. Paszek stated that Con Edison would agree with this course of action as MOB program is a very important reliability program for Con Edison. Mr. Paszek proposed that the new requirements should be part of NYSRC Local Reliability Rule G.2 and that they should only be applicable to units that are part of the MOB program.

Ms. Rodriguez stated that Zone K MOB program does not rely on combined cycle units.

Action Item 203-2: Modify PRR 132 to be applicable to combined cycle units that are part of the MOB program (Zone J only).

Mr. Johnson asked if the ~10% failure rate was with one unit or multiple units. Mr. Sharp stated that it was more than one asset owner.

3.1.2 PRR 133 F System Restoration (F.1 revision / F.2 retirement)

In accordance with Action Item 202-3 Mr. Adamson reviewed F1 NYCA System Restoration Plan Requirement 1.5 and Requirement 3 as it relates to NERC and NPCC Black Start testing requirements. Mr. Adamson stated the that posted PRR 133 retires section F.2 *System Restoration Training and Simulation Programs* and adds a new requirement R1.14 that addresses training requirements under F.1. However, the posted PRR 133 does not propose to remove or adjust F.1 Requirements 1.5 and/or 3.

Mr. Adamson provided a handout that compared NERC EOP-005-2, NPCC Directory 8 and the NYSRC Reliability Rules as it relates to Black Start testing and gave a brief overview of the information included within that document. Mr. Adamson then stated that certain~~the~~ NYSRC Reliability Rule~~s~~F.1 requirements are more stringent or specific ~~(not stringent)~~ than NPCC and NERC requirements, while some NERC and NPCC requirements are more stringent than NYSRC requirements. Mr. Clayton agreed ~~agreed on the specificity, but stated~~ that certain~~the~~ NYSRC Reliability Rule~~s~~ requirements are less stringent than NPCC requirements. Case example: the NYSRC Reliability Rules require the steam electric units to be tested every 3 years versus NERC and NPCC require an annual test. Mr. Adamson stated that 'we' assume that an abbreviated (intervene) test can be counted as a full test and that this test is consistent with the annual test requirements. Mr. Paszek disagreed with this assumption. Mr. Grant stated that steam electric units do not fit the definition of a Black Start resource, and should have been defined differently. Mr. Grant also stated that the steam electric units, that are part of the Con Edison System Restoration Plan, are not subject to NPCC Directory 8, and that the NYISO has no compliance obligation for the steam electric units.

Mr. Clayton asked Mr. Grant why the steam electric unit(s) abbreviated (interven~~inge~~) year Black Start test passes NPCC Directory 8 requirements. Mr. Grant stated that NPCC Directory 8 does not recognize steam electric units as Black Start units.

Mr. Clayton asked Mr. Adamson should RRS remove or adjust F.1 Requirements 1.5 and/or 3. Mr. Adamson stated that certain~~the~~ NYSRC Reliability Rules are more stringent and specific and thus no change is required. Mr. Paszek disagreed with that conclusion.

Mr. Paszek stated that NERC-005-2 requires, among other requirements, a Black Start unit to have the ability to energize a bus and requires a minimum duration of each required test. Mr. Paszek stated that the NYSRC Reliability Rules do not even come close to being that stringent or specific. Mr. Adamson disagreed. Mr. Paszek asked Mr. Adamson where the NYSRC Reliability Rules require the ability to energize a bus and a minimum duration of each required test. Mr. Clayton stated that the solution is not to remove Requirement 1.5 but to add into the NYSRC Reliability Rules these additional requirements. Mr. Paszek stated that we have two choices: (1) remove Requirements 1.5 and 3, or (2) modify Requirements 1.5 and 3.

Mr. Gioia stated that this may not be correct. Mr. Gioia stated that the NYSRC may have reliability rules on the same subject but the NYSRC does not have to address all aspects of a reliability issue. Mr. Gioia stated that the NYSRC cannot undercut a NPCC rule, but the NYSRC does not have to address it. Mr. Paszek agreed with the principle but stated that in this case the rules toward a Black Start test as written in the NYSRC Reliability Rules and are less stringent and specific (and contradictory) than NERC and NPCC reliability rules. For example, steam electric units are part of the Con Edison System Restoration Plan and as such need to obey the applicable reliability rules. Whereas the NYSRC Reliability Rules would require a steam electric unit to start up and synchronize to a live system, NERC reliability rules would require any Black Start unit to start up, idle, and pick up a dead bus.

Mr. Adamson asked if the NYISO is meeting this requirement. Mr. Grant stated that because Con Edison will be a NERC registered TOP (6/1/2016) the EOP-005 requirements will be applicable to the Con Edison System Restoration Plan. As of today (6/30/2016) the steam electric units are not subject to NERC EOP-005. Mr. Grant stated that he believes the steam electric cannot do what NERC EOP-005 requires the Black Start resources to do. Mr. Grant stated that the steam electric units should be called 'system restoration units' in order to avoid confusion with Black Start units.

Ms. Rodriguez stated that PSEG_LI/LIPA does not assume that steam electric can energize a dead bus; gas turbines are utilized for this purpose.

Mr. Clayton asked whether~~how is~~ the NYISO is currently in compliance with the applicable NERC and NPCC reliability rules for the steam electric units. Mr. Grant stated that the NYISO system restoration plan is subject to NERC and NPCC reliability rules; the Transmission Owner's system restoration plan(s) currently are not. Due to the fact that the NYISO system restoration plan does not utilize steam electric units, they are not subject to the applicable NERC and NPCC reliability rules.

The group th~~e~~an reviewed the NYSRC and NERC definitions of the Black Start Facility / Resource.

Mr. Paszek stated that the group should not only concentrate on the NYSRC Reliability Rules affecting steam electric units, but also take into account the fact that the NYSRC Reliability Rules requirements related totoward gas turbines, combined cycles and hydro units do not require the ability to energize a bus and do not require a minimum duration of each required test.

Mr. Paszek stated that we have two choices: (1) remove Requirements 1.5 and 3, or (2) modify Requirements 1.5 and 3. Mr. Clayton agreed with option 2; modify Requirements 1.5 and 3 in order to align these Requirements with more stringent NERC EOP-005 and NPCC Directory 8 requirements. RRS members approved Mr. Clayton's recommendation that Option 2 be pursued, and requested Mr. Paszek to modify PRR 133 accordingly.

Action Item 203-3: Modify PRR 133 to align NYSRC Reliability Rules toward Black Start test requirements with NERC EOP-005 and NPCC Directory 8 requirements.

3.2. Discussion Items

3.2.1 NERC, NPCC Black Start Testing Requirements

See Agenda Item 3.1.2.

3.2.2 NYSRC Rule C.4 and NERC EOP-010 GMD Comparison

Mr. Clayton stated that this is yet another instance where there is a mismatch between the NERC EOP-010 Standard and its requirements and the NYSRC Reliability Rules C.4(R2) GMD requirements. Mr. Grant gave a brief overview of the information included within the posted material on this subject and concluded that the NYSRC Reliability Rules C.4(R2) GMD requirements are less stringent and less specific than NERC EOP-010.

Action Item 203-4: Mr. Adamson to review "NERC-NYSRC GMD Comparison" documentation to ascertain if the NYSRC Reliability Rules are lessas stringent and less as specific thanas NERC EOP-010 (in order to decide whether to retire NYSRC Reliability Rule C.4 Requirement 2).

3.3 Bucket List

Mr. Clayton stated that RRS is progressing well on most of the items. Mr. Clayton asked Mr. Grant if he could address Item 22 *Review all Reliability Rules to determine whether NERC or NPCC Standards are more stringent*; Mr. Grant agreed. The status of item 22 was changes to 'Completed'.

Action Item 203-5: Mr. Grant to review all NERC / NPCC Requirements as they relate to NYSRC Reliability Rules.

4. NPCC Directories

There is nothing to report as it relates to RRS.

5. NERC SARS/Organization Standards

5.1 NERC Standard Tracking

Mr. Adamson highlighted to the RRS members that there is a project to provide a defined event for assessing system performance during a Geomagnetic Disturbance (GMD) event (TPL-007-1).

6. Additional Agenda Items

6.1 REV potential impact on NYS BPS reliability

Mr. Grant stated that today (6/30/2016) the NYISO released a study titled *Solar Impact on Grid Operations – An Initial Assessment*. The study conclusion is that the bulk power system can reliably manage – near term impacts – of the projected installation of solar PV; and recommends more studies to ascertain the detailed impacts to system operation, system planning, etc. Mr. Clayton asked if this study included power flow and stability analysis. Mr. Sharp stated that although this study was a pilot study he believes these were looked at.

Action Item 203-6: The NYISO will distribute the *Solar Impact on Grid Operations – An Initial Assessment* study to the group.

7. Reports

7.1 NYSRC EC Meeting Report

There is nothing additional to report.

7.2 NYSRC ICS Meeting Report

Mr. Adamson stated that ICS is preparing for the 2017 IRM study and all required models and assumptions have now been approved by ICS. ~~are under review; it~~This will require NYSRC Executive Committee approval; and then ICS will commence with the 2017 IRM study. A~~The~~ major issue under review is ~~the issues~~ related to the current~~of~~ Emergency Assistance model, which will not be changed for the 2017 IRM study, but may~~will~~ be revised for~~included in~~ the 2018 IRM study.

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Meeting ended at 1:45 PM.

Next Meeting #204

Thursday, August 4, 2016; 9:30 am @ NYSERDA, 17 Columbia Circle, Albany