

Minutes
New York State Reliability Council, LLC (NYSRC)
Executive Committee (EC) Meeting No. 240
April 11, 2019
Wolferts Roost Country Club
120 Van Rensselaer Blvd, Albany, NY 12204

Members and Alternates in Attendance:

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| Roger Clayton, P.E. | Unaffiliated Member – EC Chair, RRS Chair, RCMS Chair |
| Mayer Sasson | Consolidated Edison Co. of NY, Inc – Member – Vice Chair |
| George Loehr | Unaffiliated Member – Phone |
| Bruce Ellsworth, P.E. | Unaffiliated Member |
| George Smith, P.E. | Unaffiliated Member |
| Frank Pace | Central Hudson Gas & Electric – Member |
| Mark Domino, P.E. | National Grid, USA – Alternate Member |
| Tim Lynch | NYSEG and RG&E - Member |
| Bruce Fardanesh | New York Power Authority- Member |
| Curt Dahl, P.E. | PSEG-LI– Member |
| Matt Schwall | Independent Power Producers of NY- Wholesale Sellers Sector– Member |
| Mike Mager | Couch White - Large Consumer Sector – Member |
| Chris Wentlent | Municipal & Electric Cooperative Sector – Member |

Other Attendees:

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| Paul Gioia, Esq. | Whiteman, Osterman & Hanna, LLP – NYSRC Counsel |
| Al Adamson | NYSRC Treasurer and Consultant - Phone |
| Howard Kosel | Consolidated Edison Co. of NY, Inc. – ICS Chair |
| Phil Fedora | Northeast Power Coordinating Council, Inc. |
| Commissioner Burman | NYS Public Service Commission* |
| Leka Gjonaj | NYS Department of Public Service |
| Carl Patka | New York Independent System Operator (NYISO) |
| Wes Yeomans | New York Independent System Operator (NYISO) |
| Josh Boles | New York Independent System Operator (NYISO) - Phone |
| Rana Mukerji | New York Independent System Operator (NYISO) |
| Herb Schrayshuen | Power Advisors, LLC – EC Secretary |
| Cori Tackman | Power Advisors, LLC |
| Rich Bolbrock, P.E. | |
| Yuri Fishman | PSEG-LI |
| Mariann Wilczek | PSEG-LI-Phone |
| Khattune Zannet | PSEG-LI-Phone |

*” Denotes part-time participation in the meeting

1. **Introduction** – R. Clayton, EC Chair called the NYSRC Executive Committee Meeting No. 240 to order at 9:31 a.m. on April 11, 2019. A quorum of 13 Members and Alternate Members of the NYSRC EC was established.
 - 1.1. **Identification of visitors** – The attendees on the phone and visitors were identified.
 - 1.2. **Requests for Additional Open Session Agenda Items** – R. Clayton stated that under section 3.5, Other Organizational Issues, he would discuss the Conceptual Budget and the NERC Balloting Process. A. Adamson proposed to add the 2018 NYSRC Audit Report as an agenda item.
 - 1.3. **Request for Executive Session Agenda Items** – An executive session was planned to discuss the status of the search of a new unaffiliated EC Member. No additional executive session items were requested.
 - 1.4. **Declarations of Potential “Conflict of Interest”** – There were no declarations of new potential conflicts identified.

2. **Meeting Minutes/Action Items List – H Schrayshuen**
 - 2.1. **Approval of Minutes for Meeting No. 239 (March 2019) – Attachment #2.1**
H. Schrayshuen introduced the revised draft minutes of the March 8, 2019 meeting, which included all comments received as of 4/9/2019. H Schrayshuen noted that some editorial changes were submitted by Phil Fedora on 4/10/2019. C. Wentlent made a motion to approve the minutes of Meeting #239 including the suggested changes. The motion was seconded by G. Smith and unanimously approved by the EC members in attendance (13 - 0). The EC Secretary will arrange to have the final minutes for EC Meeting #239 posted on the NYSRC website.
 - 2.2. **Review of Outstanding Action Items List – Attachment #2.2** - H. Schrayshuen reviewed and updated Attachment #2.2 based on the EC member comments.

3. **Organizational Issues**
 - 3.1. **Summary of Receipts & Disbursements**
 - 3.1.1. **Statement of Cash Receipts and Disbursements – A. Adamson - Attachment #3.1.1** - A. Adamson presented Attachment #3.1.1 – Statement of Cash Receipts and Disbursements for March 2019, noting the end of month balance of \$143,989.86. A. Adamson noted that the Cash in Bank balance included a pre-payment from one member.
 - 3.2. **Final Report on NYSRC Code of Conduct Acknowledgement Form Receipts – H. Schrayshuen** – H. Schrayshuen reported that all Code of Conduct forms have been completed and received for 2019.
 - 3.3. **Glossary Definition (Transmission Owner) – P. Gioia** –P. Gioia updated the EC regarding his conclusion relative to the need to modify the definition of the term “Transmission Owner.” After further review it has been determined that a glossary change would have to be approved by FERC. Due to the fact that it is clear that a Transco does not meet the same load serving obligations requirements of a traditional transmission owner because they do not have a service territory, and do not meet the definition of Transmission Owner, there is no need to update the existing definition of Transmission Owner in the NYSRC governance documents.
 - 3.4. **Directors and Officers Liability Policy Renewal – P. Gioia** – P Gioia stated that the Directors and Officers Liability insurance policy has been renewed.

3.5. Other Organizational Issues –

- 3.5.1. 2018 Audit Report – A. Adamson –** Audit Report- A. Adamson noted that the NYSRC 2018 Financial Audit Report was provided at the EC meeting for those in attendance and that those members not in attendance would receive a copy by mail. A. Adamson thanked Colleen Campoli, the TOs and P. Gioia for providing the needed information to the auditing firm. A. Adamson noted that the audit found no concerns with the 2018 accounting entries and processes.
- 3.5.2. Conceptual Budget – R. Clayton –** R Clayton discussed the conceptual budget and process stating that the 2020 budget is scheduled to be approved in July. There was further discussion on how the TOs want the EC to address the contingency. A concern was raised that if the actual expenditures are higher than the budget (due to the proposed reduction in budget for certain line items) that the \$50,000.00 contingency might have to be used. The question arose whether the contingency fund could be replenished if the following year, or would it have to be replenished in the current year with an additional call for funds? The answer was that it could be replenished in the following year. This information will be taken into consideration in the final proposal.
- 3.5.3. NERC Balloting Process – R. Clayton –** R Clayton stated that they are still in discussion with the wording for a process.

4. Installed Capacity Subcommittee (ICS) Status Report/Issues – H. Kosel, ICS Chair

- 4.1. ICS Chair Report – Attachment #4.1 –** H. Kosel reviewed attachment #4.1 – Summary of ICS meeting #218 on April 11, 2019. He reported that at the ICS meeting, there was a presentation on evaluating alternative methods to update the external area model and ensure that each control area meets their installed reserve margin and the LOLE criterion. The ICS will be looking to bring the recommendation of the External Area Model to the EC for approval for the May 10, 2019 meeting. There will be a recommendation from the NYISO on how to handle the HQ Wheel Modeling and Cedars Upgrade. If the recommendation is to include them in the model, a Policy 5 revision might be required. The NYISO presented some historical data on the Load Shape Selection data. The current plan is to continue to review load shape related items throughout the year. If any changes are being considered, the plan is to run them as sensitivity for the 2021 IRM, with possible implementation for the 2022 IRM. PSEG-LI presented their supporting document for how they determined their 80 MW of public appeals. There was a presentation from the NYISO on how to model energy limited resources in the 2020 IRM. There were expected to be two modelling options, but due to an issue with the GE MARS model software release delay, the paper focused on the simplified peak shaving logic. Once the software is released there will be a comparison between the two methods. The software will not be released in time for the 2020 IRM. The NYISO reviewed topology changes for the 2020 IRM. Changes made were due to the addition of Cricket Valley, the expected deactivation of Indian Point in 2020 and 2021 the addition of the Rainey-Corona 345/138kV PAR. No issues or concerns were raised with the topology. The next step for the ICS, once the Gold Book is released, to complete the assumption's matrix for the 2020 IRM study.
- 4.2. Other ICS Issues –** C. Wentlent asked if the NYISO is in the process of negotiating

to sell capacity in the Ontario market. Josh Boles reported that Ontario has approached the NYISO. A few years ago a Memorandum of Understanding was put in place so the Ontario resources could sell capacity to New York. Ontario is now looking to develop a type of forward capacity market. To make it robust and fair there is discussion to allow New York resources to sell into Ontario. Ontario is planning to have their first auction late 2020. It looks like there will be a cap on how much New York resources will be permitted to export into Ontario. R. Clayton asked if Indian Point is definitely shutting down. It was mentioned that all of the studies have shown that Indian Point is not needed to ensure reliability, unless something unforeseeable occurs. The owner has stated that the Indian Point units will shut down in 2020 and 2021.

5. Reliability Rules Subcommittee (RRS) Status Report/Issues –R. Clayton, RRS Chair

- 5.1. RRS Status Report Discussion Issues – Attachment #5.1-** R. Clayton reported on attachment #5.1 providing a summary of the April 4, 2019 RSS meeting. There are currently 3 PRRs under development. PRR 128 is tabled pending the NPCC A-10 revision completion. PRR 142 was originally developed for two reasons. One was to encompass within the NYSRC rules a definition for Special Protection Systems/Remedial Action Schemes (SPS/RAS) and the second item was to introduce some new testing of SPS/RAS into the Transmission Assessment for NYCA. The test would employ an N-1-1 methodology. After discussion it was determined that NPCC is addressing the RAS/SPS definition issue. RRS will still continue development of the N-1-1 testing concept and monitor the NPCC SPS/RAS definition process. PRR 143 Loss of Gas Supply has been tabled until the NYISO has its 2024 Fuel and Energy Security Study underway. The study is due during the second quarter of 2019. RRS decided to table this PRR until after that study is completed. There are no PRRs open for comment. The comment period for PRR 144 period is closed. No comments were received. There are currently two topics open for discussion. The first topic is that RRS will continue to monitor ICS activity concerning the impact of ELRs on NYCA reliability to determine if a rule is needed. The second topic concerns the TO Public Appeals estimates for the IRM calculations. R. Clayton discussed the potential PRR for Public Appeals estimates for IRM calculation. PSEG-LI presented a whitepaper supporting their 80 MW public appeals estimate. Based on this whitepaper, the EC agreed that ICS should continue to assume 80 MW of load relief from public appeals in the 2020 IRM Study for Long Island, subject to confirmation by the RRS. RRS will examine whether other TOs should review their IRM public appeals assumptions. R. Clayton directed the ICS to continue on the same basis as in previous years IRM studies to include the 80MWs public appeals load reduction assumption in the current IRM study until a resolution by the RRS is recommended to the EC.
- 5.2. List of Potential Reliability Rule Changes – Attachment #5.2 –** R. Clayton stated that the table will be updated to show recent changes.
- 5.3. PRRs for Final Approval – (PRR 144-C.3 Outage Coordination) Attachment #5.3 –** R. Clayton discussed PRR144 and stated RRS is seeking approval from the EC fore PRR 144. No comments were received during the comment period. After a brief discussion M. Sasson made a motion to approve PRR 144. The motion was seconded

by B. Ellsworth and unanimously approved by the EC Members in attendance. (13-0). H. Schrayshuen will arrange to post the final rule on the website as a new rule. A. Adamson will start to prepare a new revision of the NYSRC Reliability Rules and Compliance Manual.

5.4. Other RRS Issues –

5.4.1. Transmission Owner Member Reports on Public Appeals Methods – Transmission Owners – Yuri Fishman, PE, spoke on behalf of PSEG-LI and discussed how their estimated public appeals load reduction assumption was determined and how the public appeals process on Long Island works. M. Sasson spoke on behalf of ConEdison and stated that even though they are confident there would be a reduction in load if a public appeal request was made via television, radio, and social media, they have determined that the amount of load reduction cannot be quantified nor should it be used for planning purposes. There was further discussion regarding whether the TOs, other than PSEH-LI, could and should attempt to quantify a public appeals number. After the discussion, the TOs were asked to come back to RRS and explain why PSEG-LI's public appeals approach cannot or should not be used in their own service areas. RRS will bring their findings to the next EC meeting.

6. Reliability Compliance Monitoring Subcommittee (RCMS) Status Report/Issues –R. Clayton, RCMS Chair

- 6.1. RCMS Status Report – Attachment #6.1** - R. Clayton reported on attachment #6.1, a summary of the RCMS Meeting #230 on April 4, 2019. R. Clayton reported that RCMS found the NYISO in full compliance for Real Time Operations of the NYS BPS (C8: R1) for February 2019. RCMS also found the NYISO in full compliance for February in reference to the 2019 Locational Capacity Requirements (A.1:R1).
- 6.2. 2019 Reliability Compliance Program** – Attachment #6.2 – R. Clayton stated that the scorecard is up to date.
- 6.3. NYISO 3/28/19 Letter on the optimized LCR process** – Attachment #6.3 – R. Clayton reported that RCMS requested that the NYISO give a presentation with details on the optimized LCR process. The NYISO is using a linear program to determine the cost in each zone. The resulting information is input to the MARS model to determine the LCRs. This method is expected to be more accurate and will provide a cost savings throughout NYCA. A. Adamson noted that he had submitted some questions to the NYISO beforehand and they were all answered. He thanked the NYISO for their effort.
- 6.4. Other RCMS Issues** – None.

7. NYISO Status Reports/Issues

- 7.1. NYISO Comprehensive System Planning Process – C. Patka – Attachment #7.1** – C. Patka presented on behalf of Z. Smith. The Comprehensive Reliability Plan is in process, and draft plan showed there were no Reliability Needs for 2019-2028. This was consistent with the Reliability Needs Assessment. Utilizing a posted draft of the DEC NOx emissions rule, the NYISO determined that up to 3,300 MW of peaking capacity that could be impacted by the rule and could deactivate. The NYISO together with Con Edison and PSEG-LI conducted a scenario analysis that showed that if the

deactivations occurred without replacement capacity both transmission security and resource adequacy needs would result on a NYCA-wide basis and in Zones J and K. The 2020-2021 Reliability Planning Process base case analysis will determine the exact scope of the reliability needs and potential market-based and regulator backstop solutions. A complete Comprehensive Reliability Plan draft report including the proposed peaker rule scenario will be discussed at the April 12, 2019 ESPWG/TPAS meeting. H. Schrayshuen will distribute the link for the Comprehensive Reliability Plan. (AI-240-1). C. Patka stated that NYISO will begin to start the CARIS process for 2020. NextEra continues to work on the Western NY Public Policy Transmission need project. C. Patka also stated that the NYISO Board has approved the T027 NAT/NYPA project in Central New York for Segment A, and the T019 National Grid and Transco project in the Hudson Valley for Segment B. He said that the NYISO will start to work on development of agreements with the developers of these for these projects, with a projected in-service date in December 2023.

7.2. NYISO Markets Report – R. Mukerji - Attachment #7.2 – R. Mukerji discussed attachment #7.2, stating that the NYISO is considering a broad spectrum of market product and structural changes over the next few years to adapt to the more aggressive New York renewable energy generation goals and the DERs coming onto the system. One market design change that has been approved is separating Zone J into its own reserves market at the stakeholder’s request. The NYISO is planning to implement Zone J reserve requirement by summer 2019. The NYISO is working on a whitepaper which looks at a comprehensive markets, reliability and planning view. It will focus on any gaps in reliability and what market changes might be needed to close those gaps. The outline of the paper was previously shared with stakeholders and the draft whitepaper will be completed in May. The NYISO will present the paper in June. The NYISO has been developing some comprehensive market rules governing inclusion of DER in the wholesale market. This will be coming up for a stakeholder vote at the Business Issue Committee meeting on April 17, 2019. There was discussion on dual participation in both the retail and wholesale markets. R. Mukerji stated that dual participation is being allowed but there are guidelines that need to be met to participate in both markets and more rules will be developed when needed. H. Schrayshuen brought to the EC attention that the ISO-NE is changing their electric forward market to a multi-day approach to be more supportive of generators procuring firm gas. He asked NYISO if they saw this change as perhaps impacting reliability in New York by potentially drawing gas resources away from New York. R. Mukerji stated the NYISO is aware of the changes in ISO-NE and that the NYISO Fuel Assurance Study would identify whether there would be a reliability concern in New York. W. Yeomans stated that currently the pipelines are at capacity so even if a generator wanted to sell more ISO-NE they wouldn’t be able to increase their sales due to pipeline capacity constraints. R. Mukerji said that the NYISO has made a compliance filing to the FERC on electricity storage. The implementation schedule is for the tariff changes to be effective October 1, 2019, for implementing storage projects mid- 2020.

7.3. NYISO Monthly Operations Report – W. Yeomans - Attachment #7.3 – W. Yeomans presented Attachment #7.3. For the month of March there was a Peak Load of 22,257MW on March 6, 2019. There was 2:37 hours of Thunder Storm

Alerts and 0 hours of NERC TLR level 3 curtailment. There is a lot of transmission maintenance this time of year.

7.3.1. NYISO Winter 2018-2019 Cold Weather Operations – W. Yeomans

Attachment #7.3.1 – W. Yeomans stated that when compared to winter of 2017-2018 there were more cold days in 2018-2019 but no long cold snaps that lasted many days. There were two noteworthy periods of cold 1/19/19-1/22/19 and 1/30/19-2/2/19. The actual Winter Peak was 24,728MW. The market systems worked well. There was no need for statewide supplemental Capacity Commitments, Demand Response, Emergency Actions, or Emergency Purchases. The Transmission infrastructure performance was good. The gas pipelines remained in-service. There were a lot of Operational Flow Orders (OFO) for the cold days. NYISO has noticed a trend with a higher number OFOs at higher ambient temperatures as compared to the past. Northeast Gateway Deepwater liquefied natural gas terminal hit a record peak send-out flow of over 800,000 MMBtu/day on 2/1/2019.

- 8. Distributed Energy Resources (DER) – G. Smith** – G. Smith discussed attachment #8.1 - The NERC SPIDER group is working on the Interconnection – Wide Case Creation – MOD-032. There is concern with the DER_A Model and the interface with other model systems. The New York Interconnection Technical working Group (ITWG) is working with industry on Appendix K. R. Clayton mentioned there is a Power Modeling Conference sponsored by NERC in June 2019. R. Clayton asked if anyone from the TOs were attending the event. H. Schrayshuen will assist in coordinating participant feedback. (AI-240-2)

8.1. Other DER Issues – None to report

- 9. Environmental Status Report/Issues – C. Wentlent** – C. Wentlent stated that there will be three public hearings on the proposed NYS DEC Peaker Rule in May 2019. C. Wentlent will be attending the hearing on May 6, 2019 in Albany. The next NYSRC/DEC call is on May 9, 2019. In late March there was an Energy Storage Deployment Program Conference at the NYPSC. The Joint Utilities presented their energy storage plans. There is a projected commercial operation date of December 2022. On April 1, 2019 the Joint Utilities submitted their commercial usage Heat Pump Filing with the PSC with a projected start of the Heat Pump program in 2020.

- 10. NERC/NPCC Standards Tracking – A. Adamson – Attachment #10.1** – A. Adamson stated that there was one balloting session this past month on 18 requirements proposed for retirement. NYSRC voted yes for 15 standards modifications and abstained on three. As of the meeting date there were no upcoming NERC standards ballots.

- 10.1. NYSRC NERC standards ballot process – R Clayton** – R. Clayton stated this was covered in section 3.5 – wording is being developed.

11. Reliability Initiative – G. Smith, G. Loehr –

- 11.1. Report on the status of the MDMS2 Project - Attachment #11.1** – G. Smith reviewed attachment #11.1. At the March 7, 2019 project meeting it was confirmed that the MDMS1 algorithm, which used a Taylor-series based three point approach, is not suitable for continuous running on a pre-contingency basis as it is prone to major prediction errors relating

to the angle discontinuities that arise in fault situations. Quanta updated to a standard Kalman filter predictor which appears to work. Various PMU locations were tested spreading further apart to see if the method could provide more lead time in predictions. PMU data are being used for angle information and for voltage, looking at depression of voltage one moves away from the fault. Quanta suggested reducing the signal threshold from 5.7 degrees to 1.14 degrees based on amount likely source being due to harmonics generated by inverters connected to the BPS. Controlled System Separation (CSS) of the Total East Interface (TEI), using the 2015 model of MDMS1, was performed to establish a basis for comparison to validate the implementation on the PSS/E version used by Quanta with good results. Further testing was performed using the 2022 NY model with inverter based resources (IBR) and heavy loading of the Central East Interface (CEI). Tripping of various combinations of generation in the Oswego area was explored as potential mitigation measures revealing that post contingency stability could be achieved by tripping 9M PT2 generator. Also tested with this model was CSS of TEI. Here if IBR were not tripped as a result of low voltage in their area, stability of the system could not be achieved. However, tripping those resources that may go off line due to low voltage, stability could be achieved. Also tested as a mitigation measure was modulation of HVDC power output revealing a positive impact on stability.

There was a discussion regarding high penetration of solar DER on feeders designated for UFLS. P. Fedora stated that NPCC is working on this issue and identified difficulties with modelling the details of DER penetration.

The MSMS2 project may be completed in May.

12. State/NPCC/Federal Activities – P. Fedora

12.1. NPCC Report – P. Fedora stated that the NPCC CP-11 Working Group is drafting a revision of document A-10 to present to the NPCC Task Force on Coordination of Planning in the middle of April for review. The NPCC Board of Directors meeting is May 1, 2019. They will be finalizing policy input requested by the NERC Board of trustees including the recommendations of the NERC Staff Supply Chain report. H Schrayshuen will look at the request for policy input to see what may apply to the EC for input (AI-240-3). Other agenda items for the NPCC Board meeting include presentations of the draft 2020 NPCC Business Plan and Budget, and 2019 NPCC Summer Reliability Assessment.

12.1.1. Report on Special Protection System Activity at NPCC – Attachment #12.2.2

– P Fedora reported that the NPCC Task Force on Coordination of Planning (TFCP) is continue to work on the SPS/RAS issue as it relates to SPS in NPCC. This will be discussed at the May 14 -15 TFCP meeting.

12.2. NERC Report – P Fedora - H Schrayshuen – H Schrayshuen noted that there is a link in the package to a video from Jim Robb, President and CEO of NERC, to help identify some residual reliability risks. P Fedora reported that on June 27 there is a FERC Technical Conference where NERC will present its annual State of Reliability Report.

12.2.1. Report on NERC Reliability Leadership Summit and Reliability Issues

Steering Committee Meeting – H Schrayshuen – Attachment #12.2.1 – H Schrayshuen noted there is a lot of focus on physical security, especially with

NYSRC Exec. Comm. Meeting No. 240

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drone usage. One take way is that resource adequacy cannot solely be modeled as it was in the past. DOE is sponsoring a lot of development and modelling work on resilience. There was also discussion that coordination with inverter-based resources coming on line may not be sufficient.

12.2.2. NERC CEO Testimony at FERC Security Technical Conference – H Schrayshuen – Attachment #12.2.3 – NERC is getting ready for the next round of reports on residual reliability risks. There was a survey prepared to rank some of the reliability risks. The survey results will be available in August and will provide input into the next Reliability Risk Report by NERC.

13. NAESB Activities – B. Ellsworth – B. Ellsworth reported that NAESB met April 11, 2019.

14. Visitor Comments – It was noted that the meeting marked the 20 anniversary of the NYSRC.

15. Adjournment of the EC Open Meeting

The Executive Committee Meeting #240 was adjourned at 1:45 PM

16. Future Meeting Schedule

| Meeting | Date | Location | Time |
|----------------|--------------|---|-------------|
| #241 | May 10, 2019 | Wolferts Roost Country Club 120 Van Rensselaer Blvd. Albany, NY 12204 | 9:30 AM |