BEFORE THE
PUBLIC SERVICE COMMISSION
STATE OF NEW YORK

Proceeding on Motion of the Commission to Examine Repowering Alternatives to Utility Transmission Reinforcements	))))	Case No. 12-E-0577

COMMENTS OF THE SIERRA CLUB REGARDING CAYUGA REPOWERING AND TRANSMISSION ALTERNATIVES

I. Introduction

The Sierra Club respectfully submits the following comments regarding the transmission and repowering proposals for the Cayuga generating station located in East Lansing, New York. For the reasons set forth below and as supported by the accompanying report from Pinewood Power Solutions LLC and PSM Consulting, Inc., the Sierra Club recommends that the Public Service Commission ("Commission") approve the transmission upgrades recommended by NYSEG and reject the repowering alternatives proposed by Cayuga. The Sierra Club also recommends that the Commission require NYSEG to evaluate and implement, to the extent practicable, demand response and energy efficiency programs to alleviate potential operational or reliability concerns associated with Cayuga's retirement during the time period before completion of the proposed transmission projects (mid-2017). In particular, consistent with the consultants' analysis, Sierra Club urges the Commission to consider whether demand response can obviate the need for ongoing ratepayer subsidization of the near term operation of one of the two Cayuga units.

The Commission, through Docket Nos. 12-E-0400[1] and 12-E-0577,[2] is currently engaged in reviewing and evaluating solutions to address reliability issues created by the proposed mothballing of the Cayuga coal plant ("Cayuga"). As a party in these proceedings, the Sierra Club retained Pinewood Power Solutions LLC and PSM Consulting, Inc. ("the Consultants") to review the materials submitted in both dockets and provide technical recommendations on the proposed repowering alternatives and transmission upgrades. The following comments are informed by the technical review and analysis provided by the Consultants.

II. Background

A. Parties

[1] Petition of Cayuga Operating Company, LLC to Mothball Generating Units 1 and 2, Case No. 12-E-0400 (July 20, 2012).
[2] Proceeding on Motion of the Commission to Examine Repowering Alternatives to Utility Transmission Reinforcements, Case No. 12-E-0577 (Jan. 18, 2013).

The Sierra Club is a nonprofit environmental organization with over 600,000 members nationally, including more than 35,000 members in New York State. The Sierra Club's mission is to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives. The Sierra Club's membership includes individuals and electric ratepayers who reside in the vicinity of the Cayuga plant who have a financial and public health stake in the future of the plant.

Mr. David J. Lawrence, Pinewood Power Solutions LLC's principal consultant, has been active in the electric power industry for 36 years, beginning with 24 years at Power Technologies, Inc. (now Siemens PTI) in various operational scheduling, transmission, distribution and control/monitoring equipment roles, followed by 11 years at the New York Independent System Operator ("NYISO") serving in various demand response program and capacity market positions, and most recently as President of PPS, providing consulting services related to wholesale electricity markets. He received his B.S. and M. Eng. degrees in Electric Power Engineering from Rensselaer Polytechnic Institute.

Dr. Ricardo J. Galarza, President of PSM Consulting, Inc., has worked in the electric power industry for over 20 years in various positions, gaining extensive experience in power system engineering and the electricity markets. After obtaining his B.S. degree, Dr. Galarza worked 6 years for an electric utility in various capacities. Following completion of his Ph.D., Dr. Galarza spent 5 years with Power Technologies, Inc. in various transmission and system planning roles. He joined the NYISO in 2001, where he worked in the Market Monitoring and Performance unit. Dr. Galarza founded PSM Consulting, Inc. in September of 2003, where he has been active in a number of independent consulting projects. He obtained his B.S. from Northeastern National University, Argentina, and his M.S. and Ph.D. in Electric Power Engineering from Rensselaer Polytechnic Institute.

B. Proceeding

On July 20, 2012, Cayuga Operating Company, LLC ("Cayuga Operating Company"), the owner of Cayuga, filed notice with the Commission of its intent to indefinitely mothball Cayuga no later than January 16, 2013. In support of its decision, Cayuga Operating Company argued that "current and forecasted wholesale electric prices in New York are inadequate for the Cayuga Facility to operate economically…"[3] On December 17, 2012, the Commission approved a Reliability Support Services Agreement ("RSSA") between Cayuga and NYSEG through which NYSEG agreed to compensate the Cayuga Operating Company in exchange for keeping the Cayuga facility online.[4]

On a separate but parallel track, on January 18, 2013, the Commission issued an Order Instituting Proceeding and Requiring Evaluation of Generation Repowering ("January 18 Order") in the above-captioned proceeding. In the January 18 Order, the Commission directed

[3] Notice of Intent to Mothball Cayuga Units 1 and 2, Case No. 12-E-0400 (July 20, 2012).
[4] Order Deciding Reliability Issues and Addressing Cost Allocation and Recovery, Case No. 12-E-0400 (Dec. 17, 2012).

the Cayuga Operating Company and NYSEG to compare the costs and benefits of two options: repowering Cayuga at its existing site or investing in long-term alternative transmission upgrades.[5] The Commission added that "[t]he benefits to be evaluated must include, but may not be limited to, the reliability, environmental, and customer impacts associated with the repowering and transmission solutions."[6]

On February 19, 2013, NYSEG submitted a list of two transmission projects to correct the reliability concerns raised long-term by the shutdown of Cayuga. The two projects are:

- Constructing a new 14.5 mile, 115 kV line from National Grid's Elbridge Substation to NYSEG's State Street Substation
- Rebuilding the existing 14.5 mile, 115 kV line from National Grid's Elbridge Substation to NYSEG's State Street Substation

NYSEG has indicated that the two projects would be in service by mid-2017 and that after completion, "no electric generation will be required at the Cayuga Generating Facility to support the reliability needs of either NYSEG or National Grid."[7]

On March 26, 2013, Cayuga submitted its Repowering Proposal with four distinct repowering options. The options were as follows[8]:

- Option 1—repower the existing Cayuga units with natural gas for maximum combined output of 300 MW;
- Option 2—repower the facility with simple cycle combustion turbine generators firing only natural gas with a maximum combined output of 294 MW;
- Option 3—repower Unit 1 with natural gas and Unit 2 with a combined cycle combustion turbine generator, a heat recovery steam generator ("HRSG") and a condensing cycle steam turbine generator; and
- Option 4—repower the facility with a combined cycle combustion turbine generator, HRSG and a condensing cycle steam turbine generator.

On May 17, 2013, NYSEG submitted its Report on Cayuga Repowering Analysis. The May 17 Report recommends that the Commission support implementation of the Transmission Upgrades solution rather than any of the repowering options identified by Cayuga.

III. Comments

Based upon the filings to date in Docket Nos. 12-E-0400 and 12-E-0577 and the analyses conducted by Sierra Club's Consultants, Sierra Club offers the following observations and recommendations:

[5] Order Instituting Proceeding and Requiring Evaluation of Generation Repowering, Case No. 12-E-0577 (Jan 18, 2013).
[6] *Id.*, 3.
[7] NYSEG Repowering Analysis Submission (May 17, 2013).
[8] *Id.*, 8-12.

1. The Sierra Club supports NYSEG's two identified transmission projects and upgrades as the best long-term solutions to address long-term reliability issues associated with Cayuga's retirement for several reasons:
    a. Unlike Cayuga Operating Company's repowering options, which present a number of reliability risks and, even if approved, would need to include the proposed transmission upgrades to address the identified overload issues, NYSEG's transmission projects would fully and finally resolve reliability issues;
    b. NYSEG's transmission projects are the lowest risk in terms of cost, and, unlike the repowering options, do not depend on assumed revenues and market stability in order to be economically viable; and
    c. Keeping additional capacity on-line through out-of-market subsidies does not promote efficient markets.

2. By limiting the required evaluation of reliability solutions to only repowering alternatives and transmission upgrades, the Commission's January 18 Order was unduly narrow. The Sierra Club urges the Commission to order NYSEG, to the extent practicable, to implement demand response and/or energy efficiency programs to alleviate potential operational or reliability concerns associated with Cayuga's retirement during the time period before completion of the proposed transmission projects (mid-2017). As illustrated by the Consultants' report, implementing a demand response program to alleviate the need for one of the two Cayuga units is a viable and cost-effective alternative to the current RSSA.

The following sections expand upon each of the above points.

A. <u>The Sierra Club Supports NYSEG's Two Identified Transmission Projects as the Best Long-Term Solutions to Address Potential Future Reliability Issues in the Most Cost-Effective Manner for New York's Ratepayers</u>

1. Repowering Cayuga Will Not Address All of The Reliability Concerns Associated with Cayuga's Retirement

In the January 18 Order, the Commission placed a clear emphasis on the need to alleviate reliability issues first, specifically delineating reliability solutions from all "other impacts."[9] Due to the primacy of reliability concerns, the Commission should heed NYSEG's warning that repowering presents a number of reliability risks, including the risk that a repowering option will not achieve the proper financing and permitting necessary for the plant to be operational. As NYSEG stated in its May 17 Report, "[t]he Company's customers cannot wait for three years for a repowering project to be completed, only to find out that Cayuga (or another developer) cannot or will not be able to bring on line the generation necessary for reliability."[10]

Furthermore, as noted by the Consultants, even if a repowering option is approved, "the State St-Elbridge #972 line will continue to be the weakest portion of the transmission system in

[9] Jan. 18 Order, 3.
[10] NYSEG Repowering Analysis Submission, 22.

the Auburn area and is subject to overload in the future."[11] NYSEG's proposed transmission upgrades are "standard utility planning procedure" and will "significantly increase the thermal capability of that portion of the transmission system feeding the Auburn area."[12] The Commission itself recently emphasized the need for transmission upgrades to remove current constraints on the system, stating that these upgrades "will enhance system reliability and supply diversity, and will provide significant economic and environmental benefits by permitting excess power from upstate sources, including renewable energy facilities, to reach the downstate areas of greatest need and reduce downstate emissions."[13]

2. NYSEG's Transmission Upgrades Are the Simplest and Most Cost-Effective Solution to Address Reliability Concerns Associated with Cayuga's Retirement

NYSEG also identified a number of market risks presented by Cayuga Operating Company's repowering proposals. Of particular concern is that Cayuga Operating Company's costs for its repowering proposals are offset by an assumed revenue stream from market operations "based upon the energy and natural gas market price forecast used by Cayuga in its dispatch model."[14] NYSEG's own studies on Repowering Option 1 produced a lower amount of market revenue and a lower capacity price forecast than that reported by Cayuga Operating Company's analysis. Applying these results, NYSEG concluded that "[i]f the market risk is removed and no market revenues are assumed…the transmission cost is the least cost option."[15] The Sierra Club agrees with NYSEG that "the transmission option would have a lower risk level for ratepayers than the Cayuga repowering options,"[16] and thus, to protect New York ratepayers and to ensure grid reliability, the Commission should require implementation of the two transmission projects proposed by NYSEG as the most cost-effective long-term solution to the identified reliability issues.

B. <u>The Sierra Club Urges the Commission to Require NYSEG to Evaluate and Implement a Demand Response Program to Address Short-Term Reliability Concerns Associated with Cayuga's Retirement</u>

1. The Commission Has Required NYSEG to Examine All Alternatives to the Current RSSA That Would Alleviate Short-Term Reliability Concerns More Cost-Effectively than the Current RSSA

As stated above, the Sierra Club agrees with NYSEG's recommendation that "the Company's transmission reinforcement alternative be adopted as the best available option."[17] However, because the transmission projects will not be completed until mid-2017, NYSEG determined that "the Cayuga Generating Facility will need to remain capable of operating and

[11] Review of Cayuga Repowering Options, 2-3.
[12] *Id.*, 3.
[13] Press Release-Next Steps Taken on Energy Highway, Case No. 12-G-0297 (Apr. 18, 2013).
[14] NYSEG Repowering Analysis Submission, 18.
[15] *Id.*
[16] *Id.*
[17] *Id.*, 1.

available for commitment in order to maintain system reliability on an interim basis."[18] Accordingly, NYSEG and Cayuga Operating Company negotiated an RSSA through January 15, 2014, that was approved by the Commission in December 2012.[19] However, in its approval order, the Commission directed NYSEG "to identify any alternatives that may satisfy the identified reliability needs more cost-effectively and efficiently than either continued reliance on the Cayuga Facility or the system reinforcements identified by NYSEG."[20] Consequently, the Sierra Club urges the Commission to order NYSEG to evaluate and implement a demand response program as a viable alternative to satisfy the reliability needs associated with Cayuga's retirement more cost-effectively.

2. Implementing a Demand Response Program While Continuing to Operate One Cayuga Unit is a Technically Viable Alternative to the Current RSSA that Requires Both Units to Operate

Using load flow data obtained from NYSEG and NYISO, the Consultants constructed a load-duration curve for the Auburn load area for the period July 1-September 1, scaled to NYSEG's 2017 summer peak load. Based upon this curve, the Consultants' Report concluded that there was a reasonable demand response potential of 25 MW.[21] Based on this figure, the Consultants modeled the load on the Auburn area buses such that the total load reduction in the Auburn area equaled 25 MW.

As Table 1 of the Consultant's Report illustrates, while overloads are predicted to occur on the State St-Elbridge #972 line with both Cayuga units offline, these overloads can be satisfactorily addressed with only a single Cayuga unit in operation through implementation of realistic levels of demand response. Specifically, the Consultants' powerflow modeling demonstrated that, with Cayuga Unit 2 dispatched up to its maximum capacity and with 25 MW of demand response, there were no overload conditions in the base case or with the loss of either Sleigh-S121#B2 or Clntcorn-State.[22]

In summary, as demonstrated by the Consultants' Report, utilizing one of the Cayuga units and 25 MW of demand response eliminates overloads on the State St – Elbridge #972 line and is a viable "alternative" to the current RSSA. Furthermore, the Consultants concluded that other corrective actions such as redispatching other generators on the system would fail to address the overload issues, since "not enough generation could be found either within or outside of the area of study to eliminate the overload under contingency situations."[23]

[18] *Id.*, 2.
[19] Order Deciding Reliability Issues and Addressing Cost Allocation and Recovery, Case 12-E-0400 - Petition of Cayuga Operating Company, LLC to Mothball Generating Units 1 and 2 (Dec. 17,2012).
[20] *Id.*, 16. Responding to this order, NYSEG issued an RFP schedule on January 16, 2013, but it is currently unclear whether this process is moving forward as required by the Commission.
[21] Review of Cayuga Repowering Options, Pinewood Power Solutions, LLC (June 25, 2013), 3-4.
[22] *Id.*, 5.
[23] *Id.*

3. NYSEG Should Implement a Demand Response Program Because It Is a More Cost-Effective Solution than the Current RSSA

In its December 2012 order approving the RSSA, the Commission placed specific emphasis on the need to "minimize RSS costs imposed on ratepayers" and to ensure that ratepayers "pay no more than necessary to preserve reliability…."[24] As shown above, a combination of demand response and one operating unit at Cayuga is a technically viable solution to address Auburn area overload issues for the interim period between 2014 and mid-2017 when the proposed transmission solutions are in place. Such a combination is also more cost-effective than the RSSA currently in place which expires on Jan. 15, 2014.

Based on an analysis of the current RSSA, the Consultants concluded that the cost of the current RSSA contract is estimated to be $5.15/kW-month.[25] To compare this cost to a potential demand response program, the Consultants used publicly-filed annual demand response reports made to the Commission by Con Edison, available under Docket No. 09-E-0115.[26] Specifically, the Consultants analyzed twelve-month 2012 costs for Con Edison's Distribution Load Relief Program ("DLRP") and Commercial System Relief Program ("CSRP"). DLRP is a contingency program that is activated by Con Edison in system critical situations; CSRP is activated when the day-ahead forecast is 96% or greater of the forecasted summer system peak load. In both programs, customers are paid a reservation payment and an energy payment for verified load reduction. The DLRP program was estimated to cost $5.13/kW-month, while the CSRP program was estimated to cost $6.95/kW-month.[27]

Comparing these results, it is clear that the per-kW-month cost of administering a demand response program ($5.13 to $6.95 per kW-month from the examples provided) is competitive with that of the current RSS agreement between Cayuga and NYSEG ($5.15 per kW-month). In total dollars, based upon the total MW needed to solve the reliability issues identified in the Auburn area, a demand response solution would be far cheaper. For a 6-month summer demand response program (covering the period of reliability need) targeted at 25 MW, projected costs (excluding metering and using the average of the Con Edison program costs in Attachment D) would be approximately $10.5 MM/year, while extending the current RSSA will be almost twice as expensive, costing upwards of $19 MM/year, including payments for annual capital expenses.[28]

4. Other Existing Demand Response Programs Can Serve as Good Models for NYSEG's Demand Response Program

[24] Cayuga Operating Company, LLC to Mothball Generating Units 1and 2. Order Deciding Reliability Issues and Addressing Cost Allocation and Recovery (Dec. 17, 2012), 16.
[25] Review of Cayuga Repowering Options, Attachment C.
[26] Consolidated Edison Company Of New York, Inc. Evaluation Of Program Performance And Cost Effectiveness Of Demand Response Programs, Dec. 14, 2012, available at http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=09-e-0115&submit=Search+by+Case+Number
[27] Review of Cayuga Repowering Options, Attachment D.
[28] *Id*., Attachment E.

The Sierra Club notes that existing demand response programs, including NYISO's Special Case Resource and Emergency Demand Response Programs[29] and Con Edison's Distribution Load Relief Program[30] and Commercial System Relief Program,[31] provide good models for a similar NYSEG program to address the reliability issues associated with Cayuga's retirement. All of these programs use demand response solutions to address specific bulk power system, distribution system, and local network problems in ways that provide meaningful relief and reasonable compensation to participants.

The Commission has also previously adopted similar strategies to ensure that statewide reliability was maintained through the use of demand response programs. In Commission Docket No. 00-E-2054, on Dec. 20, 2000, among other rulings, the Commission ordered New York electric utilities to "file proposed tariffs to implement the NYISO's emergency price responsive program."[32] At that time, the Commission noted that "[t]he critical need to ensure an adequate and reliable supply of electricity, particularly in the downstate area, warrants prompt implementation of targeted demand reduction initiatives by the electric utilities."[33] The Sierra Club sees a parallel opportunity at this time to provide a similar charge to NYSEG to cover any potential reliability issues associated with Cayuga's retirement before completion of the transmission projects in 2017. This would also help ensure compliance with FERC Order 1000, which requires the consideration of non-transmission alternatives in transmission planning processes.[34]

IV. Conclusion

For the reasons set forth above, the Sierra Club recommends that the Commission approve the two transmission projects and upgrades identified by NYSEG as the best long-term solution for the reliability issues raised by the mothballing of Cayuga and reject the repowering proposals by the Cayuga Operating Company. In addition, Sierra Club recommends that the Commission order NYSEG to implement a 25 MW demand response program along with operating one Cayuga unit to address the overload concerns associated with Cayuga's retirement during the time period before completion of the proposed set of transmission projects (mid-2017).

Dated: June 26, 2013

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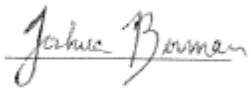
[29] New York Independent System Operator demand response programs, located at http://www.nyiso.com/public/markets_operations/market_data/demand_response/index.jsp.
[30] Con Edison DLRP program description, located at http://www.coned.com/energyefficiency/dist_load_relief.asp.
[31] Con Edison CSRP program description, located at http://www.coned.com/energyefficiency/commercial_relief.asp.
[32] Order Requiring Filings and Reports on Utility Demand Response Programs, Case No. 00-E-2054 (Dec. 20, 2000), at 7.
[33] *Id*., 5.
[34] *See generally* Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, Dkt. No. RM10-23-000, 136 FERC ¶ 61,051 (July 21, 2011) (FERC Order No. 1000); *see also* Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, Dkt. No. RM10-23-001, 139 FERC ¶ 61,132 (May 17, 2012) (FERC Order No. 1000-A); Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, Dkt. No. RM10-23-002, 141 FERC ¶ 61,044 (Oct. 18, 2012) (FERC Order No. 1000-B).

Respectfully submitted,



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