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May 19, 2016

Kimberly Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Re: Blenheim-Gilboa Pumped Storage Power Project, FERC No. 2685-026; Filing of Response to Initial Study Report Comments

Dear Secretary Bose:

The New York Power Authority (Power Authority) is relicensing the Blenheim-Gilboa Pumped Storage Project (FERC No. 2685) (Project) using the Federal Energy Regulatory Commission's (Commission) Integrated Licensing Process (ILP). Pursuant to the ILP, on March 3, 2016, the Power Authority held a public meeting with resource agencies and stakeholders to discuss its Initial Study Report (ISR), as well as any proposals to modify the study plans in light of the Power Authority's progress in implementing the FERC-approved study plans and the data collected. The Power Authority filed a summary of the ISR meeting on March 18, 2016.

The Commission's ILP regulations provide an opportunity for comment following the submission of the ISR meeting summary for relicensing participants to request modifications to approved studies or propose new studies so the Commission can establish the scope of the second ILP study season. A number of letters were submitted in response to the Power Authority's ISR and meeting summary. Pursuant to section 5.15(c)(5) of the Commission's regulations, 18 C.F.R. § 5.15(c)(5), and in accordance with the ILP schedule issued by the Commission on September 18, 2014 as part of Scoping Document 2, the Power Authority hereby submits its response to these comments.

If you have any questions regarding the Power Authority's response to comments on the ISR, please direct them to me at (914) 681-6564 or Rob.Daly@NYPA.gov

Sincerely,

Robert Daly
Manager, Licensing

RESPONSE TO INITIAL STUDY REPORT COMMENTS

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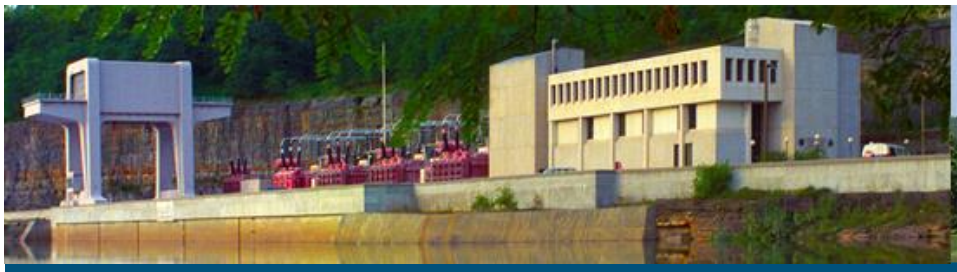
May 2016

BLENHEIM-GILBOA PUMPED STORAGE POWER PROJECT RELICENSING

FERC NO. 2685



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List of Abbreviations

ac-ft	Acre foot
AW	American Whitewater
B-G Project or Project	Blenheim-Gilboa Pumped Storage Project (FERC No. 2685)
Boating study	Recreation Boating Desktop Feasibility Assessment
cfs	cubic feet per second
Commission or FERC	Federal Energy Regulatory Commission
EIS	Environmental Impact Statement
ILP	Integrated Licensing Process
ISR	Initial Study Report
MW	Megawatts
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NY	New York
NYCDEP	New York City Department of Environmental Protection
NYISO	New York Independent System Operator
NYSDEC	New York State Department of Environmental Conservation
PAD	Pre-Application Document
PME	protection, mitigation, and enhancement
Power Authority	The Power Authority of the State of New York
PSP	Proposed Study Plan
RSP	Revised Study Plan
SD1	Scoping Document 1
SD2	Scoping Document 2
SPD	Study Plan Determination
USGS	U.S. Geological Survey
USR	Updated Study Report

1 Overview

1.1 Project Description

The Blenheim-Gilboa Pumped Storage Project (B-G Project) is located on Schoharie Creek, a tributary of the Mohawk River, about 40 miles southwest of Albany, New York, in the northern Catskill Mountains. The B-G Project is owned and operated by The Power Authority of the State of New York (Power Authority).

The principal features of the B-G Project include a 399-acre Upper Reservoir and dike, a 413-acre Lower Reservoir and dam, conduits connecting the two reservoirs, an underground powerhouse, a spillway, and related facilities. The Upper Reservoir is located at the top of Brown Mountain and was created by constructing a dike to retain water. The Lower Reservoir was formed by constructing a 1,800-foot-long dam on Schoharie Creek. The B-G Project's four pump turbine generator units have a generating capacity of 290 megawatts (MW) each.

The B-G Project is a closed cycle system because water is recycled between the reservoirs during operation. The Upper Reservoir serves as a large energy-storage device allowing the B-G Project to start generating electricity within minutes by releasing water from the Upper Reservoir through the reversible pump turbines. Generation can occur at any time but generally occurs during day time, when the demand for electricity is high and other power resources are more expensive. During periods of low electrical demand and lower electricity prices, the turbines are used to pump water from the Lower Reservoir into the Upper Reservoir.

1.2 Relicensing Background and Current Status

The original 50-year license for the B-G Project, issued in 1969 by the Federal Power Commission (predecessor to the Federal Energy Regulatory Commission (Commission or FERC)), expires on April 30, 2019. In 2014, the Power Authority began the public process for seeking a new license for the B-G Project. To prepare its relicensing application, the Power Authority is using FERC's Integrated Licensing Process (ILP) as outlined in 18 Code of Federal Regulations (C.F.R.) Part 5. In accordance with 18 C.F.R. § 5.5 and 5.6, the Power Authority filed its Notice of Intent (NOI) and Pre- Application Document (PAD) on April 10, 2014, which included the Power Authority's preliminary study plans for the B-G Project. The Commission issued its Scoping Document 1 (SD1) on June 4, 2014, and held scoping meetings on July 7, 2014 at the Gilboa-Conesville Central School in Gilboa, New York, and on July 9, 2014, at the Best Western Inn in Cobleskill, New York, where potential issues were identified by agencies, stakeholders, and the public. Following the scoping meetings, the Commission issued its Scoping Document 2 (SD2) on September 18, 2014.

Subsequently, the Power Authority received comments on the PAD and the study plans as well as requests for additional studies. The Power Authority reviewed these comments and study requests, and developed a Proposed Study Plan (PSP), which served to address and respond to all comments and requests received. The Power Authority filed the PSP with FERC on September 22, 2014. Subsequent to the PSP filing, the Power Authority held a PSP Meeting on October 16, 2014 at the Best Western Inn in Cobleskill, New York and PSP comments were due on December 21, 2014. The Power Authority filed a Revised Study Plan (RSP) on January 20, 2015 (NYPA, 2015). On February 19, 2015, FERC issued a Study Plan Determination (SPD) for the B-G Project. On August 19, 2015, within six months of the SPD, the Power Authority submitted a Study Progress Report to summarize the progress of each FERC-approved

relicensing study.

Following the first study season, FERC's regulations for the ILP require the Power Authority to "prepare and file with the Commission an initial study report describing its overall progress in implementing the study plan and schedule and the data collected, including an explanation of any variance from the study plan and schedule" (18 CFR 5.15(c)(1)). Accordingly, the Power Authority submitted for Commission review an Initial Study Report (ISR) for the B-G Project on February 19, 2016. This document described the overall progress with implementing FERC-approved study plans, schedules, and data collection, including explanations of variances, if any, from the approved study plans or schedules.

In accordance with 18 C.F.R § 5.15 (c)(2), the Power Authority held a public ISR Meeting with resource agencies and stakeholders to discuss the study results, as well as any proposals to modify the study plans in light of the Power Authority's progress in implementing the FERC-approved study plans and the data collected. The meeting was held on March 3, 2016 at the Inn at Cobleskill, Cobleskill, NY. In accordance with FERC regulations, the Power Authority filed with the Commission its summary of the ISR Meeting on March 18, 2016. In accordance with the ILP schedule issued by the Commission, disagreements on the meeting summary and requests for new or modified studies needed to be filed by April 19, 2016.

The purpose of this document is to provide the Power Authority's responses to any meeting summary disagreements and requests for new or modified studies that were submitted in accordance with Commission requirements under 18 C.F.R § 5.15 (d) and (e), as appropriate.

1.3 Next Steps

No later than 30 days after response comments are submitted (i.e., by June 16, 2016), the Commission will amend the approved study plan if needed.

Prior to filing the Final License Application due April 30, 2017, the Power Authority will file its preliminary licensing proposal (or draft license application) with the Commission by December 1, 2016. By February 18, 2017, the Power Authority will file its Updated Study Report (USR) with the Commission. The USR will describe the overall progress with implementing study plans, schedules, and data collection, including an explanation of variances from approved study plans or schedules per 18 C.F.R § 5.15 (f).

As reported in the ISR Meeting Summary, the Power Authority is on schedule to complete the reports for the Socioeconomic Study and the Recreation Use/User Comment Survey in the summer of 2016 and the report for the Effect of Project Operations on Downstream Flooding Study in the fourth quarter of 2016. The Power Authority will hold a public meeting(s) to present the results of these studies.

2 Response to Comments on ISR

A number of letters were submitted in response to the ISR meeting summary. These included:

- Gail S. Shaffer, Town of Blenheim, Blenheim Long Term Recovery Committee
- Anne Mattice-Strauch, Blenheim Town Council Member
- Michael Devlin, Fire/Emergency Medical Services Committee Member Schoharie County, NY
- Don Airey, Chairman Blenheim Long Term Community Recovery Committee
- Town of Fulton
- Bob Nasdor, American Whitewater
- Chet Keyser, Town of Blenheim Relicensing Committee
- Schoharie County Relicensing Committee
- Schoharie County Board of Supervisors

The purpose of the comment opportunity following the submission of the ISR meeting summary is for relicensing participants to request modifications to approved studies or propose new studies so the Commission can establish the scope of the second ILP study season. The Commission's regulations set a high bar for making such requests. Any proposal to modify an ongoing study must show "good cause" and demonstrate that the study: (1) was not conducted in accordance with the approved study plan, or (2) was conducted under anomalous environmental conditions or environmental conditions have materially changed. 18 C.F.R. § 5.15(d).

Any proposal for new information or study must similarly show good cause and in addition explain, as applicable: (1) a material change in law or regulations; (2) why the goals and objectives of an approved study could not be met with the approved study methodology; (3) why the request was not made earlier; (4) significant changes in the project proposal or significant new information; and (5) how the request satisfies FERC's ILP study criteria. 18 C.F.R. § 5.15(e). The ILP study criteria require the requester to:

- Describe the goals and objectives of the study proposal;
- Explain relevant resource management goals, if applicable;
- Explain relevant public interest considerations;
- Describe existing information and the need for additional information;
- Explain any nexus between Project operations and effects on the resource to be studied, and how study results would inform the development of license requirements;
- Explain how proposed study methodology is consistent with generally accepted practice in the scientific community; and

- Describe the level of effort and cost, and why alternative studies would not be sufficient to meet information needs. 18 C.F.R. § 5.9(b).

While the Power Authority appreciates the comments submitted in response to its ISR meeting summary, most were general in nature, or addressed issues that have been raised by licensing participants throughout this process—and addressed previously by the Power Authority. Other comments prematurely sought protection, mitigation, and enhancement (PME) measures for the new license term (e.g., requests for recreational boating releases) even before the Power Authority has completed the relicensing studies and developed its preliminary licensing proposal (or draft license application). Other comments relate to issues that are beyond the scope of the Commission's jurisdiction in a relicensing process (e.g., funding to train emergency management service providers). Some commenters even objected to the Commission's prior study plan determination in this ILP issued nearly a year ago (e.g., assertions that the geographic scope of the studies is too confined), and after the Power Authority has fully completed an entire year of implementing the Commission-approved plan. See Table 2.3.1-1, which identifies these type of ISR comment topics.

Because these comments are not relevant to the Commission's study plan determination for the second season of studies, and because the Power Authority has fully addressed most of the issues raised in these comments in prior filings in this ILP process, this document promotes efficiency and avoids redundancy by responding only to new issues raised in these general comments. The Power Authority's response to these new comments appears below. Its prior response to repeated general comments related to the B-G Project relicensing can be found in its Revised Study Plan, filed on January 20, 2015 (NYPA, 2015), and in the ISR Meeting Summary, filed March 18, 2016.

To assist the Commission in rendering its study plan determination for the second season of studies in this ILP, this document is focused on responding to the few requests for modification to existing studies and requests for new studies submitted by licensing participants in this process. As explained in the sections that follow, the Commission should not accept any of the proposed new or modified studies, and instead should issue a study plan determination consistent with the Power Authority's ISR.

2.1 Requests for Modifications to Existing Studies

2.1.1 Recreational Boating Desktop Feasibility Assessment

A number of stakeholders, including American Whitewater (AW) requested that the Power Authority modify the Recreation Boating Desktop Feasibility Assessment (Boating study) to assess how scheduled releases from the Project could enhance recreational boating in Schoharie Creek. The AW comment letter dated April 13, 2016, requested that the Power Authority modify the Boating study in four ways:

- AW requested that the Power Authority analyze the use of the Licensee's excess storage capacity in the Upper Reservoir for recreational boating releases under the Operations Model;
- AW requested that the Power Authority evaluate the suitability of formal and informal access points in each of the identified study areas for recreational boating usage and identify potential improvements to parking and boat launch facilities;
- AW requested that the Power Authority analyze the hydrology and create a gradient profile of Schoharie Creek between the Gilboa Dam and the Lower Dam; and

- AW requested that the Power Authority identify an appropriate portage route between Mine Kill State Park and Schoharie Creek below the Lower Dam.

The Commission should reject the request to modify the Boating study because the stakeholders, including AW, have not met the criteria for granting a request for modification to an existing study. They have not demonstrated how the results from a modified Boating study would inform the development of new license conditions for the Project.

The Power Authority's response to each of the four AW requests is provided below.

1) AW requested that the Power Authority analyze the use of the Licensee's excess storage capacity in the Upper Reservoir for recreational boating releases under the Operations Model.

FERC should deny the request to analyze the use of the Project's Upper Reservoir for recreational boating releases. The request overlooks that from a technical feasibility standpoint, there simply is insufficient water at this time to provide reliable enhancement flows for recreational boating. As discussed in the Boating study report, there is little to no water available from the Upper Reservoir to provide scheduled releases without jeopardizing the Project's ability to ensure minimum flows and to compensate for evaporation losses. The requirement to provide releases for evaporative losses and low flows from Schoharie Reservoir derives from the Commission's 1975 *Order Approving Settlement Agreement* (FPC, 1975). In order to account for evaporative losses and low flows (or no flows) from Schoharie Reservoir, the Power Authority releases water (< 10 cfs) from storage from the Upper Reservoir to result in flows comparable to those that would have occurred if the B-G Project had not been built. An approximate volume of 2,378 ac-ft is retained from the Upper Reservoir to provide for evaporation losses and low flow supplementation (i.e. providing excess water when inflow is less than minimum outflow requirements).

The following discussion estimates the volume of water required for evaporation losses and low flow augmentation. The discussion also estimates the volume of water that would be needed for potential boating releases.

Evaporation

Evaporation in the reservoirs must be accounted for in order to maintain a sufficient volume of water to release the minimum flow requirements and to replicate stream conditions as if the Project had not been built. The annual lake evaporation for the Upper and Lower Reservoirs is estimated to be 25.4 inches, based on information provided in Technical Report 33 (TR NWS 33) published in June 1982 (NOAA, 1982a) and its companion document Technical Report 34 (TR NWS 34) published in December 1982 (NOAA, 1982b), and the Climatic Atlas (ESSA-EDS, 1968).[1] The storage needed to compensate for evaporation was calculated by multiplying the annual evaporation amount of 25.4 inches by a combined surface area of 641 acres for the Upper and Lower Reservoirs, which is representative of the median water surface elevation for the FERC-allowable normal operating range for each reservoir (i.e., Elevation 1,980 feet for the Upper Reservoir and elevation 980 feet for the Lower Reservoir). The volume of water needed to

[1] Lake evaporation from May to October was calculated by multiplying the May to October pan evaporation measurements at Downesville Dam reported in TR NWS 34 (NOAA, 1982b) by a coefficient (0.76) reported in TR NWS 33 (NOAA, 1982a). Lake evaporation from May to October was converted to an annual amount using a coefficient (0.77) from the Climatic Atlas of the United States (ESSA-EDS, 1968).

compensate for evaporation in a typical year averages 1,350 ac-ft.

Low Flow Augmentation

In accordance with the 1975 *Order Approving Settlement Agreement*, the Power Authority is required to release 10 cfs from the B-G Project Lower Reservoir, however, if less than half the make-up volume is available, the Power Authority is required to release 7 cfs, until there is no make-up volume remaining at which time, the Power Authority can release less than 7 cfs.

The three gages measuring inflow to the Lower Reservoir are the Gilboa (01350101), Platter Kill (01350120), and Mine Kill (01350140) gages. A review of these gage records from water year 1976 (WY-1976) through WY-2015 indicates that inflow to the B-G Project is less than 5 cfs an average of 41 days each water year, is less than 7 cfs an average of 61 days each water year and is less than 10 cfs an average of 82 days each water year. Roughly 80 percent of these very low flows occur in the months of July, August, September, and October. This analysis indicates that augmentation flows are often required each year to maintain minimum flow requirements.

The table below provides the volume of water, which could be required from the make-up water to supplement low flows assuming 5 cfs of supplemental water for periods of 60 and 80 days.

Flow (cfs)	Days	Volume (ac-ft)
5	60	595
5	80	793

In a typical year with make-up water of 2,378 ac-ft, compensating for evaporation (1,350 ac-ft) leaves 1,028 ac-ft for other purposes such as flow augmentation. In a typical year, flow augmentation of 5 cfs for 60 days accounts for 595 ac-ft, which then leaves 433 ac-ft for other purposes assuming no factor of safety. It should be noted that the requirements for evaporation and low flow augmentation reflect long term conditions; there will be periods that are hotter (more evaporation) and/or drier (less inflow and more flow needed for augmentation) where the storage available for other uses would be less than 433 ac-ft.

Boating Releases

The table below provides the volume associated with a single six hour duration boating release of varying amounts. The Boating study assessed water depths at flows ranging from 10 cfs to 1,000 cfs over the 9.2 mile stretch of river below the Lower Dam. At flows of 350 cfs, the number of locations with less than 1.5 depth was 81% and at flows of 1,000 cfs, the number of locations with less than 1.5 feet of depth was 9%.

Boating Release (cfs)	Volume (ac-ft)
250	124
350	174
500	248
750	372
1000	496
1500	744
2000	992

As noted above, in a typical water year, 1,350 ac-ft is needed to make up for evaporation losses during the boating months and 595 ac-ft is needed to augment low flows by 5 cfs for 60 days. This accounts for 1,945 ac-ft of the 2,378 make-up storage or 82% of the make-up storage assuming no safety factor. A single 6-hour boating release of 1,000 cfs, would use 496 ac-ft of storage, which is more than the 428 ac-ft of remaining make-up storage. In a hot and/or dry year, more water may be needed than in a typical year to compensate for evaporation and to augment low flows.

The need to preserve the make-up water to supplement low inflows and evaporation losses is particularly apparent this year as there are indications that 2016 is going to be a dry year. The 2015-2016 snowfall was considerably less than a typical year, which has resulted in less snowpack and consequently less snowmelt during the spring freshet. Flows peaked this spring on February 25, 2016 which is considerably earlier than during a typical year when it peaks in the March to April time period. On February 25, 2016, the instantaneous streamflow in Schoharie Creek peaked at 8,710 cfs at the USGS gage 01350101 downstream of Gilboa Dam and 9,720 cfs at USGS gage 01350180 at North Blenheim just downstream of the B-G Project. Since then, Project inflows have subsided greatly. There was no spillage at Gilboa Dam between March 23, 2016 and May 7, 2016 and diminished flow from the intervening drainage area between Gilboa Dam and the Lower Dam. For instance on May 1st, the streamflow at the North Blenheim gage was 37cfs which is much less than the median daily flow of 563 cfs.

Several stakeholders, including AW, have commented that releases from NYCDEP's upstream Gilboa Dam will increase in the next several years. It is the Power Authority's understanding that the Dam Safety Permit issued for the Gilboa Dam requires the implementation of an approved conservation release plan six months after the completion of a low level outlet at the Gilboa Dam, which is estimated to occur sometime in 2020. The Power Authority's understanding also is that at this time there is no approved conservation release plan for the Gilboa Dam and the amount of releases, if any, is not yet certain.

Thus, even if NYCDEP increases releases to Schoharie Creek at some point in the future it is unknown at this time: (1) when NYCDEP will begin to release water; (2) the amount of water that will be released; and (3) whether additional releases from NYCDEP can support replenishment of storage at B-G if Upper Reservoir storage is used for recreational flows. The impact of these operational changes on the B-G Project operations or requirements for minimum flow releases is hypothetical and unclear. Until such time as there is more certainty regarding increased conservation releases from the Gilboa Dam, it is premature to assess whether any increased releases to the Lower Reservoir would allow for sufficient water to provide enhancement flows for recreational boating in the stretch of Schoharie Creek downstream of the Lower Dam. Under current conditions, however, as described above, there simply is insufficient water for the Power Authority to provide reliable enhancement flows for recreational boating downstream of the Lower Dam.

2) AW requested that the Power Authority evaluate the suitability of formal and informal access points in each of the identified study areas for recreational boating usage and identify potential improvements to parking and boat launch facilities.

Study criteria require that studies should have a nexus to the impacts of continued project operation and produce information that would lead to the need for PME measures associated with the Project. The AW request assumes, but provides no evidence, that there is a demand for new or improved access points. In addition, the Lower Reservoir is essentially operated as run-of-river (i.e. outflow equals inflow) and therefore

does not affect boating conditions downstream. There are no Project-related effects that the requested study would identify and therefore the study is not warranted.

Furthermore, Study Areas 2 and 3 are upstream of Lower Dam so they are not influenced by flows from Lower Dam and therefore are not relevant to the relicensing of the Blenheim-Gilboa Project. Study Area 4 is located approximately eight miles downstream of the Project boundary and extends for another 43 miles to its confluence with the Mohawk River. Numerous significant tributaries add to the flow of Schoharie Creek as it travels from Lower Dam to the Mohawk River (see Boating study report Table 3.2.1-2). While it is not appropriate to further evaluate the suitability of recreational boating access sites in Study Areas 2, 3, and 4, it should be noted that the literature review section of the Boating study identified and described, where information was available, recreational boating access sites in each of these study areas.

The results of the desktop analysis show that boating use of Study Area 1 (primary study area) is limited even though the Boating study identified six recreational boating access sites along the 9.2 mile Study Area 1. The access sites include two formal sites (the New York State Department of Environmental Conservation access site and the Max V. Shaul State Park) and four informal sites. The amenities of both formal sites are described in the Boating study report, which is included as Appendix D to the Initial Study Report (NYPA, 2016).

3) AW requested that the Power Authority analyze the hydrology and create a gradient profile of Schoharie Creek between the Gilboa Dam and the Lower Dam.

During the development of the PSP and the RSP, AW requested that the Power Authority analyze the boating potential of Schoharie Creek between the Gilboa Dam and the Lower Dam. In its SPD, FERC required that the Power Authority conduct a Phase I boating analysis of the reach BELOW the Lower Dam. FERC did not require a study of the reach above the Lower Dam. AW has presented no new information that would support modifying the boating analysis as initially required by FERC.

In essence, when AW is asking the Power Authority to assess whether there would be a suitable boating opportunity above the Lower Dam if the Lower Reservoir is drawn down, it is asking that the pre-Project condition be evaluated. FERC has made clear that the environmental baseline is the existing condition. The existing condition is a pumped storage project where the fundamental purpose of the Upper Reservoir is to store water for energy. Pumping water to the Upper Reservoir solely to enhance recreational boating in the Lower Reservoir would jeopardize the ability of the Project to operate as intended to respond to calls from NYISO to provide generation during periods of peak demand, or to provide black start capability, regulation reserve, and voltage support.

Furthermore, the Power Authority is not aware of any instance in which the Commission has required the licensee of a pumped storage project to modify operations or make releases from storage to provide recreational boating flows. Doing so would contravene the unique purpose of a pumped storage project. Even in the context of a run-of-river project, the Commission has found it “unreasonable” for a licensee to forego generation in addition to the generation lost through run-of-river operation, for the benefit of recreational boaters, *see, e.g.*, *Northeast Gen. Servs. Co.*, 107 FERC ¶ 61,305 (2004), and such a requirement would be unreasonable here. Consistent with this precedent and the core function of the B-G Project as a pumped storage facility, the Power Authority does not intend to modify Project operation to pump water at times when it typically does not pump (such as at periods of peak demand) to the Upper Reservoir to create more gradient in the Lower Reservoir to allow for recreational boating. FERC should

deny AW's request because it would not lead to a PME measure that has a nexus to the fundamental purpose of the Upper Reservoir (i.e., as an energy storage device).

Furthermore, this modification is not needed because the Power Authority has already presented information on the hydrology and the gradient profile of Schoharie Creek between the Gilboa Dam and the Lower Dam in the Boating study report. Figure 3.2.1-2 of the report shows the channel profile of Schoharie Creek from Gilboa Dam to the confluence with the Mohawk River including the 51/2 mile reach between Gilboa Dam and the Lower Dam. The hydrology of the reach between Gilboa Dam and Lower Dam is also discussed in Section 3.2 of the boating report. Of note is Table 3.2.1-1 that shows the frequency of different flows over the 40 year period of record at the USGS gage 01350101, Schoharie Creek just downstream of Gilboa Dam. Flows are less than 10 cfs for 60% of the year (220 days) and many of these days with very low flows are during the boating months of April through October (143 days). In addition to this table, flow hydrographs for the USGS gage downstream of Gilboa Dam for dry, wet, and typical years are shown on Figures 3.2.4-3 to 3.2.4.7. The reach between Gilboa Dam and the Lower Dam is characterized by low flows due to the diversion of 316 square miles of drainage by the NYCDEP water supply withdrawal from Schoharie Reservoir. Neither the Power Authority nor the Commission has control over the flow discharged from Gilboa Dam.

4) AW requested that the Power Authority identify an appropriate portage route between Mine Kill State Park and Schoharie Creek below the Lower Dam

Development of a portage route from the Lower Reservoir to below Lower Dam is impractical for a number of reasons and therefore a study to identify such a route would have no purpose. Due to the very low use of Schoharie Creek for recreational boating, moreover, a portage route is not warranted. It should be noted that while AW's request appears to assume that portage routes are warranted or required at all FERC-licensed dams, this is not the case. FERC has not required licensees to provide portage routes where—like at the B-G Project—it is infeasible, unsafe, impractical, and /or there is inadequate demand. *See, e.g.*, Hogansburg Hydroelectric Project, Determination on Requests for Modification to Approved Study Plan, Project No. 7518-012 (Jan. 7, 2013) (rejecting request for additional year of study to identify formal portage route); *S. Cal. Edison Co.*, 120 FERC ¶ 62,190 (2007) (not requiring portage where it proved to be both technically infeasible and raise safety concerns for boaters); *Ridgewood Maine Hydro Partner, LP*, 89 FERC ¶ 62,124 (1999) (not requiring portage due to safety concerns); *Mayo Hydro*, 87 FERC ¶ 62,027 (1999) (concluding portage not needed due to modest demand); *Appalachian Power Co.*, 70 FERC ¶ 62,071 (1995) (eliminating requirement to provide portage after it was found to be unsafe, unjustified, impractical, in light of the high cost and light use of the area).

A portage route between Mine Kill State Park and the Lower Dam is infeasible for many reasons. The shoreline embankments both above (on Lower Reservoir) and below Lower Dam (Schoharie Creek) are steep and/or heavily rip-rapped for erosion control purposes creating treacherous footing, especially when carrying a boat. AW itself, in its April 13, 2016 comments, pointed out the "…extreme difficulty of launching below the Lower Dam due to the steep and rocky embankment on river left…" These conditions, coupled with the close proximity of any potential upstream access site to the Lower Dam present significant safety issues. In addition, the length of a portage route would exceed 4,500 feet, including several hundred feet within the gated security area of the Project.

AW assumes that provision of canoe portage means that boaters will actually boat the Lower Reservoir,

portage around the Lower Dam, and then boat in the Creek immediately below the dam. But, the type of boating opportunities above and below the Lower Dam are very different. The Lower Reservoir provides flat-water boating conditions while the approximately 6,000 feet of Schoharie Creek immediately below the Lower Dam has a very different boating experience. At high flows, this reach can be very dangerous as the Creek flows through an extended area of shrubs and small trees creating strainers that can cause a boat to get pinned and difficult to escape from. The contrast in boating opportunities would likely greatly limit the number of boaters utilizing a portage route around the Lower Dam. Of the 14 respondents to the survey conducted as part of the structured interviews in the Recreational Boating Desktop Feasibility Assessment only one person indicated yes in response to the direct question about having boated the New York City's Gilboa Dam to Mine Kill, evidence that there is little demand or need for a portage around the Lower Dam. AW seems to have adopted a "if you build it they will come" position; an approach that was firmly rejected by the DC Circuit Court regarding fish passage at the Ellsworth Hydroelectric Project in Maine (*Bangor Hydro-Electric Company v. FERC*, 78 F.3rd 659 (D.C. Cir., 1996).

Therefore a portage route around the Lower Dam is not practical nor warranted and a study to identify such a route from Lower Reservoir to Schoharie Creek below Lower Dam is not an effort that would provide useful information to inform the development of license conditions.

2.1.2 Effect of Project Operations on Downstream Flooding Study

Many of the stakeholder comment letters reiterated comments made during the study scoping process, which have been previously addressed by the Power Authority or FERC and are addressed in Section 2.3. Stakeholders requested some modifications to the Flooding Study that are discussed below.

Study Objective

The stakeholders requested that the Power Authority modify the study to include a 1,000-year recurrence interval event, in addition to the 10-year, 50-year, 100-year, and 500-year recurrence interval events already being analyzed as part of the Revised Study Plan. These requests do not provide good cause or otherwise meet the criteria required by Commission regulations for modification of an approved study.

The methodology in the approved study plan to determine precipitation for different recurrence interval storms is estimated using the Northeast Regional Climate Center's Interactive Web Tool for Extreme Precipitation Analysis which does not report a value for the 1000-year event. Further, the method in the approved study plan for estimating flows downstream (Streamstats) does not support the estimation of a 1,000-year event either, as regional regression equations are not provided above a 500-year event.

Geographic Scope

The stakeholders requested that the total catchment of the B-G Project should be considered in the study, and that flood routing and HEC-RAS analysis of the upper reaches of the Schoharie Creek and Schoharie Reservoir should be conducted. These comments indicate confusion about the geographic scope of both the hydrologic and hydraulic models. The Power Authority would first like to address the extents and components of the hydrologic model.

The stakeholders expressed concern that since ISR Figure 2.5.3-1 does not show three flood control dams on the Batavia Kill that this portion of the Schoharie Creek watershed has been excluded from the study. This is not the case. The hydrologic portion of the study utilizing the HEC-HMS model (i.e. which converts

precipitation to flow in the river) considers the total catchment of the B-G Project including the Batavia Kill. Additionally, stakeholders questioned the exclusion of modeling the three flood control structures located in the upper portions of the Schoharie Creek Watershed. It should be noted that the HEC-HMS model disregards the storage provided by the flood control reservoirs, however the drainage area for these three structures is included in the hydrologic HEC-HMS model and represents 5% of the total B-G Project drainage area. It is conservative to exclude the storage provided by these flood control structures, with respect to the estimation of peak flood flows, as it produces a higher peak inflow to the Lower Reservoir. Further, the hydrologic model is being verified to data from Tropical Storm Irene, and initial model results indicate good agreement between predicted and observed flows at the USGS gages influenced by these flood control structures. Therefore, the flood routing of these structures as well as the total catchment of the B-G Project is considered by the HEC-HMS model.

With regards to the hydraulic HEC-RAS model, the stakeholders are concerned that flood routing of the upper reaches of the Schoharie Creek and Schoharie Reservoir are not considered. However, as explained above, flood routing of the areas upstream of the Gilboa Dam is considered within the HEC-HMS model. A HEC-RAS model is used to estimate water surface elevations, and the goal of the Flooding Study is to estimate the water surface elevation in the Schoharie watershed downstream of the B-G Project for various recurrence interval storms and Project operations. The upper portion of the Schoharie Creek watershed and Schoharie Reservoir are not included in the HEC-RAS model because 1) the B-G Project operations do not influence the water surface elevations upstream of the Gilboa Dam, and 2) including areas upstream of the Gilboa Dam in the HEC-RAS model would not provide supportive information for the goals of the Flooding Study.

In summary, the current geographic scope provided by the HEC-HMS and HEC-RAS models is sufficient to address the goals of the Flooding Study consistent with the Revised Study Plan (i.e. assess potential effect of the B-G Project on downstream flooding, if any, and provide information on potential operational measures that could alleviate downstream flooding).

2.1.3 Socioeconomic Study

Many of the stakeholders reiterated comments made during the study scoping process, which have been previously addressed by the Power Authority or FERC. These comments are addressed in Section 2.3 below. Stakeholders also requested that the Socioeconomic study be modified.

Geographic Scope

Stakeholders have requested that the geographic scope of the Socioeconomic Study be modified from the FERC-approved study plan to delete New York State from the assessment of the Project's socioeconomic impacts on the premise that including New York State would "homogenize any negative effects of the Project on the local, neighboring, and host communities." FERC should reject this request for modification because one objective of the study is to evaluate the socioeconomic effects on the local and neighboring communities, the region, and the state resulting from the operation of the Project. New York State is included because the power-related benefits of the Project accrue to the entire State, and not just to the local and neighboring communities. As noted above, due to its core function as a pumped storage project, the B-G Project has the ability to provide additional generation during times of peak demand, black start operation, regulation, and low voltage support at a moment's notice, when called upon by NYISO. These attributes benefit the entire State. Moreover, the inclusion of the State will not obscure the socioeconomic

effects of the Project on the local and neighboring communities because the effects will be itemized for each local and neighboring community. That is, the effects associated with jobs, income, gross regional product and population will be presented for each town, as well as for the school district, county, region, and state.

Methodology

One of the tasks in the socioeconomic study is to assess the effects of the tax-exempt status of the Power Authority. The ISR noted that the Power Authority used Schoharie County's valuations of the Project in assessing the impact of the Power Authority being a tax exempt entity. Stakeholders have requested that the valuation of the Project should be conducted by an independent professional appraiser, at the Power Authority's expense.

FERC should reject the request to have a third party appraiser conduct a valuation of the Project at the Power Authority's expense. First, using Schoharie County's own valuation of the Project is a reasonable approach because it provides sufficient, independent information for the Commission to assess the socioeconomic impacts of continued operation of the B-G Project.

Second, a Project-level appraisal is unnecessary for FERC to evaluate the socioeconomic impacts of the B-G Project. As the Power Authority pointed out previously in the RSP, because the assessment of non-power resources is generally conducted qualitatively, FERC has held that quantifiable information is not needed for socioeconomic evaluations. *See City of Tacoma*, 84 FERC ¶ 61,107, ¶ 61,572 n.164, *order on reh'g*, 84 FERC ¶ 61,317, *reh'g dismissed*, 85 FERC ¶ 61,209 (1998) (rejecting the idea that dollar values must be used to adequately assess project benefits and impacts) (citing *Joseph M. Keating, et al.*, 42 FERC ¶ 61,030 at p. 61,187 (1988); *City of Seattle*, 44 FERC ¶ 61,181 at p. 61,647 (1988)). The U.S. Court of Appeals for the D.C. Circuit has upheld FERC's findings in this regard, holding that "nothing in the [Federal Power Act] requires the Commission to place a dollar value on nonpower benefits." *Conservation Law Found. v. FERC*, 216 F.3d 41, 47 (D.C. Cir. 2000).

Third, it is apparent that the stakeholders' purpose in requesting a third party Project-level appraisal of the Project is to establish payments in lieu of taxes, which are beyond the scope of this relicensing process—and which FERC has made clear are outside of its jurisdiction to establish. The U.S. Court of Appeals for the Ninth Circuit recently upheld FERC's determinations in this regard. *See Cnty. Of Butte v. FERC*, 445 F. App'x 928 (9th Cir. 2011) (affirming FERC's determination that it was without authority to order payments in lieu of taxes). *See also New York Power Authority*, 120 FERC ¶ 61,266 at P33 (2007) (declining to establish payments in lieu of taxes); *City of Tacoma*, 84 FERC ¶ 61,037 at p. 61,142, *reh'g denied*, 85 FERC ¶ 61,020 (1998) (declining to require licensee to compensate county for lost tax revenues); *FPL Energy Maine Hydro, LLC*, 106 FERC ¶ 61,038 at P58 (2004) (rejecting request that local government be compensated for loss of future tax revenues upon cessation of operations of project). While FERC assesses the power and non-power impacts including socioeconomic impacts of continuing Project operation, as part of a relicensing proceeding, a third party appraisal of the Project's value will not inform the need for PME measures within FERC's jurisdiction, and is not necessary for an evaluation of socioeconomic benefits and impacts of the Project.

In sum, the stakeholders have not shown "good cause" as to why FERC should approve their requests to modify the Socioeconomic study plan nor have they demonstrated (or even contended) that the socioeconomic study hasn't been conducted as provided for in the FERC-approved study plan. See 18

C.F.R § 5.15(d). Moreover, the stakeholders have not shown how the appraisal they seek of the Project would inform the development of license requirements.

Stakeholders also had a number of requests (Table 2.1.3-1) regarding information that should be included in the socioeconomic study report.

Table 2.1.3-1 Requests for Information to be included in the Socioeconomic Study Report

Request	Response
All inputs to the REMI model	The Socioeconomic Report will contain an appendix describing the inputs to the REMI model.
A comparison of what the local and neighboring communities would receive in tax revenue if the Project was taxed	The Socioeconomic Report will contain a discussion of what the local and neighboring communities would receive in tax payments on the Project if the Power Authority were not a tax-exempt entity under state law. The analysis will include the level to which property tax rates would be affected by hypothetical tax payments on the Project.
Identify number of employees employed by the Project by town as opposed to by zip code	As noted in the RSP, presentation of employees by zip code was requested by the stakeholders. Data on employees by zip code is provided for informational purposes and isn't part of the REMI modelling. The Power Authority does not have data in which towns an employee resides because it is very common in New York for an individual to live in one town but to be assigned a mailing address that is not the town in which the employee lives. The Power Authority only has data on the employee's mailing address i.e., zip code.
Address payments to Project retirees	The Power Authority does not have data on payments to retirees. Payments to retirees are made through the New York State retirement system.

2.2 Requests for New Studies

No new study requests were received.

2.3 Additional Comments Received

2.3.1 Issues Already Addressed, Raised Prematurely, or Beyond the Scope of Relicensing

Several stakeholders provided comments that are not related to new study requests or modifications to existing studies. Comments that have already been raised and addressed by FERC in Scoping Document 2 (SD2) or the SPD, or by the Power Authority in the RSP are summarized in the following table. Table 2.3.1-1 identifies the document (SD2 or SPD, or RSP) where they have been addressed, if applicable. Requests for PME measures are also included in this table, because it is premature to discuss potential measures prior to the Power Authority's completion of studies or the development of a preliminary licensing proposal (or draft license application). Finally, the table includes comments that are beyond the scope of the relicensing proceeding, either because the information has been addressed as part of FERC's Part 12 dam safety program, or otherwise has no nexus to the B-G Project relicensing.

Table 2.3.1-1 List of Issues Already Addressed, Raised Prematurely, or Beyond the Scope of Relicensing

Stakeholder Comment/Request	Previously addressed by FERC in SD2 (September 2014) or SPD (February 2015)	Previously addressed in the RSP dated January 2015	Request for PME Measure	Beyond the scope of relicensing
Fund USGS gages		✓	✓	
Request to resolve differences between PMF estimates for Gilboa Dam and the B-G Project.	✓	✓		✓
Request to consider actions performed by the NYCDEP regarding the design flood for its Gilboa Dam and Schoharie Reservoir (i.e. inflow of 312,000 cfs), and that the Power Authority modify the Lower Dam to safely pass a flow greater than its current design flood (inflow of 181,909 cfs and outflow of 174,099 cfs).	✓	✓		✓
Request that a dam failure study be performed for the Upper Reservoir and Lower Reservoir of the B-G Project	✓	✓		✓
Expand geographic scope of studies to include area that would be impacted in event of dam failure	✓	✓		✓
Engage a specialized consultant should to study seismic activity at the B-G Project.	✓			✓
Request that dam safety studies should include an evaluation of climate change.	✓			✓
Request for a comprehensive EIS to address all ecological/scenic impacts of the B-G project.	✓	✓		
Request for information regarding cyber-security				✓
Request for funding for first-responder initiatives (personnel, training, equipment, etc.)		✓		✓
Geographic scope of the Historic Structures/Archaeological Survey should be expanded	✓	✓		
Consider future NYCDEP operations of Gilboa Dam	✓			✓

Stakeholder Comment/Request	Previously addressed by FERC in SD2 (September 2014) or SPD (February 2015)	Previously addressed in the RSP dated January 2015	Request for PME Measure	Beyond the scope of relicensing
Request for funding for/coordination with recreation initiatives			✓	
Request to remove driftwood for motor boating and waterskiing		✓	✓	
Geographic scope of Recreation Use/User Contact Study and Assessment of Effects the Project has on Recreation Use should be expanded	✓	✓		
NYPA should consider low-cost power allocations to Schoharie County	✓	✓		✓
The socioeconomic study should include an assessment of the socioeconomic impacts of a catastrophic dam failure	✓			✓
The socioeconomic study should address what Schoharie County would look like today if the Project had paid taxes over the past 50 years.	✓			✓
The socioeconomic study should consider impacts to road/infrastructure maintenance	✓	✓		✓
The socioeconomic study should evaluate impacts from non-project power lines on property values				✓

2.3.2 McDonald Report

During the March 3rd Initial Study Report meeting, members of the Schoharie County Relicensing Committee presented the Power Authority and FERC with a copy of a report produced by John M. McDonald Engineering, P.C. on behalf of Schoharie County titled August 28-29, 2011 Flood Study Report (McDonald, 2016).The report itself does not contain any requests for new studies or modifications to existing studies in compliance with FERC criteria, nor does it provide any new information that would be useful in the existing Flooding Study. It does suggest two potential strategies to reduce downstream flooding – pumping and utilization of the B-G Project's reservoir storage. In general, both strategies are being considered in the Flooding Study but the findings of their effectiveness in the McDonald Report are faulty because it does not consider limitations to their implementation during a high flow event (e.g. pumping problems due to turbid water, forecasting uncertainty, unreliable gage operation, availability and transmission of power from the statewide power grid during a flood event, etc.) and inaccurate interpretation of Project data (e.g. Tainter gate discharge curves and reservoir stage storage curves).

The Power Authority does not believe it is necessary to respond to specific McDonald report inaccuracies

at this time. The results of the Power Authority's ongoing Flooding Study, whose study plan has been approved by the Commission, will provide a credible basis upon which to assess Project operations relative to high flow events.

2.3.3 Clarifications to Study Plan Methodology

Recreation Use/User Contact Study

Stakeholders state that the Recreation Use/User Contact study fails to address a number of recreation activities such as winter activities (e.g., snowmobiling, cross-country skiing) or fair weather activities (e.g., hiking, bicycling, bird watching, and hunting). To the contrary, as set forth in the RSP, the User Contact Survey, which was administered on a random basis to users of the six Project recreation sites, asks recreationists to identify the recreational activities in which they have participated by season over the past year (March 2015 through February 2016). The survey contains a list of 30 recreational activities, which includes many of the activities cited by the stakeholders in their comments, as well as a catch all for other activities not identified in the survey.

Flooding Study: Hydrologic Model

Consistent with the RSP, the methodologies in SIR 2006-5112: Magnitude and Frequency of Floods in New York (Lumia *et al,* 2006) were presented during the ISR for the estimation of inflows to the Schoharie Creek downstream of the Lower Reservoir Dam. FERC Staff present at the ISR meeting asked if the Flooding Study would utilize information from SIR 2014-5084: Maximum Known Stages and Discharges of New York Streams and their Annual Exceedance Probabilities through September 2011 (Wall *et al,* 2014). Both of these USGS publications utilize Bulletin 17B: Guidelines for Determining Flood Flow Frequency (USGS, 1982) methodologies to evaluate the peak frequency analyses at gaged sites. The main difference between these publications is the period of record utilized for the gages, as SIR 2014-5084 uses data through calendar year 2011 (CY-2011) and SIR 2006-5112 uses data through water year 1999 (WY-1999)[2]. The Flooding Study intends to use these methods with gage data through WY-2014 (i.e. as official WY-2015 data has yet to be published).

Flooding Study: Operations Model

Consistent with the RSP, and as emphasized at the ISR meeting, reasonable, credible, and prudent alternative operations are being considered as part of the Flooding Study. Stakeholders have asked if the Flooding Study included particular alternative operations such as a) the use of all four pumping units during a high flow event and b) void creation (i.e. pre-emptive drawdown of the reservoir).

The RSP states that "Alternative operations will investigate initial reservoir water levels, various pump/turbine operations, Tainter gate operations, and timing of these operations in anticipation and during a flood event." Consistent with the RSP, the Flooding Study is evaluating a range of events (i.e. 10-year, 50-year, 100-year, and 500-year recurrence interval) which bound the Irene event, and is considering

[2] A water year is defined as the 12-month period from October 1st through September 30th of the following year. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the 12 month period ending on September 30th, 1999 is called water year 1999 (WY-1999).

alternative operations including the use of the pumps and pre-emptive drawdown.

Additionally, stakeholders have asked if the Flooding Study would include an assessment of cooperative flood mitigation opportunities between the Power Authority and the NYCDEP, including operation of the NYCDEP's low level outlet. FERC staff asked if installation of the new low level outlet at NYCDEP's upstream of Gilboa Dam was considered in the study. It is not known how New York City intends to operate the low level outlet, or even when it will be operational. For these reasons, the low level outlet at Gilboa Dam is not being considered in the Flooding Study.

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