

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, DC 20426
October 27, 2017

OFFICE OF ENERGY PROJECTS

Project No. 3211-009 – New York
Hinckley (Gregory B. Jarvis) Hydroelectric Project
Power Authority of the State of New York

Mark Slade, Director of Licensing
New York Power Authority
123 Main Street
White Plains, NY 10601

Reference: Request for Additional Information and Study Requests

Dear Mr. Slade:

After reviewing the Hinckley (Gregory B. Jarvis) Hydroelectric Project's (Jarvis Project) Pre-Application Document (PAD) and participating in the September 26 and 27, 2017 scoping meetings and the September 27, 2017 environmental site review, we have determined that additional information is needed to adequately assess potential project effects on environmental resources. We have comments on the PAD and additional information requests (enclosed in Schedule A), and three study requests (enclosed in Schedule B) for reservoir volume, water quality, and recreation resources. Unless otherwise stated, please file your responses to schedule A with your proposed study plan that is due on December 12, 2017.

Staff may determine a need for additional studies or information upon receipt and review of scoping comments, study requests, and your proposed study plan. As necessary, we will request additional information or studies or provide additional input on proposed or requested studies after you file the proposed study plan.

Please include a master schedule in your proposed study plan that includes the steps for conducting each proposed study (i.e., data collection, data analysis, consultation, and report preparation), the distribution of progress reports, the filing date of the initial study report, and the date of the initial study report meeting. Finally, if you are likely to propose any plans for protection, mitigation, or enhancement measures, drafts of those plans should be filed, if possible, with the study report.

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If you have any questions, please contact Emily Carter at (202) 502-6512, or via e-mail at Emily.Carter@ferc.gov.

Sincerely,

John B. Smith, Chief
Mid-Atlantic Branch
Division of Hydropower Licensing

Enclosures: Schedule A and Schedule B

cc: Cindy Brady, Licensing Manager
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SCHEDULE A

ADDITIONAL INFORMATION

Project Boundary

1. On page 8 of the Pre-Application Document (PAD), you state that the project boundary extends downstream approximately 0.3 mile (1,600 feet) from Hinckley Dam to the Hinckley Road Bridge. However, during the environmental site review, NYPA staff stated that the project boundary extends only 250 feet from the dam and does not extend all the way to Hinckley Road Bridge. Please clarify how far below the dam the project boundary extends.

Project Operation

2. On page 16 of the PAD, you state that the 1920 Operating Diagram was used until it was superseded by the 2012 Operating Diagram. You only provide the 2012 Operating Diagram in the PAD. To help us better understand the changes in operation that occurred during the current license, please provide a copy of the 1920 Operating Diagram.

Transmission system

3. On page 13 of the PAD, you describe the project transmission system. Please verify that the project transmission infrastructure includes: (1) two approximately 50-foot-long underground generator leads that run between the project generators and an aboveground, NYPA-owned transformer within the powerhouse parking area; and (2) a 200-foot-long underground transmission line running from the transformer to a NYPA-owned switchyard located north of New York State Route 365, which is where project power interconnects with transmission lines owned by National Grid. Also, please provide the voltage values for the generator leads, the underground line between the transformer and switchyard, and the National Grid transmission line. Lastly, please verify that there are no overhead lines between the transformer and the switchyard.

Water Resources

4. On pages 27 through 29 of the PAD, table 4.1.2-1 provides Mohawk Valley Water Authority (MVWA) and New York State Canal Corporation (Canal Corp) water withdrawals for the period 2009 through 2016. So that staff may understand historic water usage during the period of the current license, particularly changes in water usage for municipal water supply and canal operation, please also provide any MVWA and Canal Corp water use data from 1983 through 2009. Also, please provide information on any increases or decreases in municipal or canal water usage planned for future years.

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Geology and Soils

5. On page 38 of the PAD, you state that there is “minimal to no” erosion throughout the reservoir and “limited” streambank erosion along the banks downstream of the project dam, particularly along the left bank. So that staff may better understand the shoreline erosion within the project reservoir and downstream of the dam as described in the PAD, please provide a description of the extent of erosion observed (such as the length of shoreline affected), the potential causes of observed erosion, and photo-documentation of the erosion.

6. On pages 43 and 44 of the PAD, the figure illustrating soils in the vicinity of the project (figure 4.2.3-1) does not contain soil codes. To allow for easier comparison with the legend, please provide soil type codes within the colored soil types in figure 4.2.3-1.

Terrestrial Resources

7. On pages 115 and 116 of the PAD, you provide a general description of wetland and riparian habitat within the project boundary. However, table 4.6.1-1 only lists specific classifications for National Wetland Inventory (NWI) mapped wetlands. So that staff has adequate information to describe wetlands within the project area, please provide a table that contains acreage estimates within the project boundary for each state and federal wetland classification (i.e., National Wetland Inventory, New York State Department of Environmental Conservation, or Adirondack Park Authority).

8. On page 118 of the PAD, the single, large-scale wetlands figure 4.6.1-1 does not provide an adequate degree of detail. Also, it is unclear why certain wetland boundaries (in yellow) within the eastern portion of the reservoir overlap with the reservoir. For clarity, please provide a series of finer-scaled maps that represent state and federal mapped wetlands adjacent to the entire project boundary, and include the specific wetland classification code for each wetland parcel on the map.

9. On pages 119 and 120 of the PAD, you state that one adult common loon (a New York species of special concern) was recorded within Hinckley Reservoir in July 2013. So that staff may adequately determine project effects on common loons, please provide a list of all common loon sightings since 2001 within Hinckley Reservoir as part of the New York Annual Loon Census or similar survey effort, including the location of the sighting (if known), and whether specific evidence of breeding activity was observed.

Land Use

10. On page 126 of the PAD, you state that there are a number of private residences adjacent to the reservoir that use project lands for fishing, boating, swimming, and other recreation. So that staff has adequate information to describe land use at the project,

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please specify the number of private residences within the project boundary and whether the majority of residences are full-time residences or vacation properties.

Cultural Resources

11. On page 9, you state that the Hinckley Dam and Reservoir are discontinuous contributing elements to the New York State Barge Canal Historic District and in January 2017, the New York State Barge Canal Historic District was designated as a National Historic Landmark. Because of the Historic District's designation as a National Historic Landmark, we will need to conduct additional consultation with the National Park Service. Further, a historic properties management plan will mostly likely be required to protect the historic property from any adverse effects that may result from continued project operation. Please prepare a historic properties management plan and file it with your study report.
12. On page 131 of the PAD, you state that an examination of the New York State Cultural Resources Information System within two miles of the project identified three historic properties: one property listed on the National Register of Historic Places (National Register) and two properties deemed eligible for the National Register. However, the table identifying these properties (table 4.10.3-1 on page 137) only includes two properties. Further, that table lists the Hinckley Dam and Reservoir as a historic property, but indicates it is adjacent to the project, as opposed to within the project boundary. It also lists the New York State Barge and Canal Historic District as being within the project boundary. So that staff has a clear understanding of historic properties at the project, please clarify why there are only two properties listed in this table when three were identified, and explain why the table states Hinckley Dam and Reservoir is not within the project boundary.
13. On page 136, table 4.10.2-1 lists the archaeological sites within two miles of the project. So that staff has a clear understanding of the locations of these sites in relation to the project, please add a column that explains the proximity of each site to the project boundary.
14. On page 149, you state that pending consultation with the New York State Historic Preservation Officer (New York SHPO), no further studies for cultural resources are proposed at this time. If any additional consultation with the New York SHPO has occurred since filing the PAD, please provide a record of that communication.

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SCHEDULE B

ADDITIONAL STUDY REQUESTS

After reviewing the information in the PAD, we have identified a gap between the information in the PAD and the information needed to assess project effects. As required in section 5.9 of the Commission's regulations, we have addressed the seven study request criteria for each of the study requests that follow.

Hinckley Reservoir Volumetric Survey

Criterion (1) – Describe the goals and objectives of each study proposal and the information to be obtained.

The goals of this survey are to obtain the current bathymetric or bottom surface contours of the reservoir, update the elevation-area-volume curves, and provide information for an analysis of water resource management decisions. The study plan should be developed in consultation with the New York State Department of Environmental Conservation (New York DEC). The survey also should include a review of all available historic data regarding reservoir contours, and consultation with entities who manage or use water from Hinckley Reservoir (e.g., New York State Canal Corporation and Mohawk Valley Water Authority).

Criterion (2) – If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resources to be studied.

Not applicable.

Criterion (3) – If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study.

Sections 4(e) and 10(a) of the Federal Power Act require that the Commission give equal consideration to all uses of the waterway on which a project is located. When reviewing a proposed action, the Commission must consider the environmental, recreational, fish and wildlife, and other non-developmental values of the project, as well as power and developmental values.

Providing accurate and updated information on the volume of Hinckley Reservoir would help the Commission make its determination as to whether existing multiple uses of this water resource are comprehensively balanced and best serve the public interest.

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Criterion (4) – Describe existing information concerning the subject of the study proposal and the need for additional information.

The New York State Engineer and Surveyor's office determined contours of the Hinckley Reservoir before the reservoir was constructed, beginning in 1912, and no additional bottom contour surveys are believed to have been completed since that time. In 1919 and 1921, the New York State Engineer used the bottom contour information to prepare area-volume curves to help estimate the volume of water stored in the reservoir for any given water elevation. While the elevation-volume relationship has been re-evaluated several times, the bottom contours on which the elevation-volume relationships are based have not been surveyed since construction.

There has been infilling of soil, rock, and debris during the nearly 100 years of Hinckley Reservoir operation. Infilling reduces the volume of water stored in the reservoir at any given water level. This raises concern about the accuracy of reservoir storage estimates that are based on pre-construction bottom contours. At high reservoir water levels this inaccuracy would be expected to be a relatively small percentage of the total reservoir volume. However, at low reservoir elevations when the viability of the water resource is of most concern for boating, drinking water, and other users, the volume of water available may be significantly less than what the available elevation-storage information would indicate. Updated bottom contour information is needed to provide accurate reservoir volumes for water resource management decisions. To accurately calculate the volume of water in the reservoir, contours of the reservoir bottom must be known.

Criterion (5) – Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.

Project releases directly affect reservoir levels and continued operation of the project may affect recreation opportunities, aquatic resources, and fish and wildlife habitat, as well as public water supply, navigation, and hydropower generation. A volumetric survey of Hinckley Reservoir is necessary to provide accurate reservoir volumes necessary to assess the effects of project operation on recreation, environmental, and developmental resources.

Criterion (6) – Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with

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generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.

To survey the reservoir bottom, several types or combinations of methodologies are possible. Whichever methodologies are used, the results should provide bathymetric or bottom surface contours of the reservoir that allow an accurate estimation of the current total volume of Hinckley Reservoir. Specific methodologies and scope can be refined during study plan development.

Criterion (7) – Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.

One week should be sufficient to perform the survey, followed by two weeks of data analysis and report writing. The cost of a reservoir volumetric survey would depend on the specific methodology chosen, but staff estimates that it would be approximately \$30,000.

Water Quality Monitoring

Criterion (1) – Describe the goals and objectives of each study proposal and the information to be obtained.

The goal of this study is to gather sufficient information to enable staff to understand current water quality conditions at the project, and to assess any effects of project operation on downstream dissolved oxygen (DO), temperature, and pH. The objective of this study is to conduct continuous monitoring of DO, temperature, and pH in the project tailwaters from June through September—the period when reservoir stratification is most pronounced and low DO waters could be released downstream, through the project intakes, into trout waters. The study plan should be developed in consultation with the U.S. Fish and Wildlife Service (FWS) and the New York State Department of Environmental Conservation (New York DEC).

Criterion (2) – If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.

Not applicable.

Criterion (3) – If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study.

Sections 4(e) and 10(a) of the Federal Power Act require that the Commission give equal consideration to all uses of the waterway on which a project is located. When

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reviewing a proposed action, the Commission must consider the environmental, recreational, fish and wildlife, and other non-developmental values of the project, as well as power and developmental values.

Adequate concentrations of DO and suitable water temperatures and pH are required by aquatic organisms, such as trout, for subsistence, and are therefore essential to the integrity and sustainability of a healthy ecosystem. Ensuring that the effect of project operation pertaining to this resource is considered in a reasoned way is relevant to the Commission's public interest determination.

Criterion (4) – Describe existing information concerning the subject of the study proposal, and the need for additional information.

Although upstream water quality data (from the project reservoir) are presented in the PAD, no downstream water quality data are provided. Therefore, water quality data from the project tailwaters are needed for staff to assess whether continued project operation would affect water quality in downstream trout waters.

Criterion (5) – Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.

Vertical profiles of DO, temperature, and pH presented in the PAD demonstrate that stratification occurs during the summer (June through September) in the project reservoir, which has a maximum depth of approximately 75 feet. The project has deep intakes that withdraw water from depths of 32 feet to 60 feet (at a full pond elevation of 1,225 feet¹); vertical profiles indicate DO levels in this portion of the water column are often less than 5 milligrams per liter (mg/L) (which is below the instantaneous DO standard for trout waters) and occasionally as low as 2 to 3 mg/L. The project only generates when the reservoir elevation is above 1,195 feet because at lower reservoir elevations, the prescribed releases through the project² are less than the minimum hydraulic capacity of one turbine unit [300 cubic feet per second (cfs)]. However, reservoir elevations rarely (less than 5 percent of the time) fall below 1,195 feet during the summer. Therefore, during the vast majority of the summer (June through

¹ All elevations herein are reported in Barge Canal Datum. To convert elevations to National Geodetic Vertical Datum of 1929, subtract 1.04 feet.

² Releases of water through the Jarvis Project are based on the 2012 Operating Diagram, which dictates how much water is released each day given the reservoir elevation and day of year.

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September), the project would be generating and passing water downstream through the powerhouse without re-aeration³ into designated trout waters. Nor is spillage over the project spillway (which could provide some re-aeration) common in the summer—spillage occurs less than 10 percent of the time from June through September. As such, the project could reduce downstream DO concentrations to levels that do not meet state water quality standards and are unsuitable for trout and other aquatic species. Therefore, downstream water quality (DO, temperature, and pH) data from the project tailwaters are necessary to establish a baseline against which proposed or required enhancements may be compared, as well as a means to determine if any changes in project operation could affect water quality.

Criterion (6) – Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.

Standard sampling methodologies, such as in-situ water quality monitors (e.g., datasondes), could be used to continuously record DO, temperature, and pH in the tailwaters from June through September. All monitoring instruments should be properly calibrated and cleaned of any bio-fouling to ensure reliability and accuracy of the collected data. One field season (June through September) should provide sufficient data to meet study goals and objectives.

Criterion (7) – Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.

The approximate cost of this study is \$15,000. One to two technicians could download data from, and conduct any necessary instrument cleaning and calibration of, the continuously deployed datasondes. The specific methodology and scope of this study can be refined during the study planning phase and upcoming proposed study plan meeting.

³ At reservoir elevations below 1,195 feet, at least 160 cfs (the required minimum flow) is passed downstream through a low-level outlet that discharges directly into the air and therefore provides some degree of re-aeration.

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Recreation Study

Criterion (1) – Describe the goals and objectives of each study proposal and the information to be obtained.

The goal of this study is to gather information on recreation use, recreation access, and potential project effects to determine existing and future recreation use and capacity at the project.

The objectives of the study are to, at a minimum: (1) identify and describe each formal and informal recreation site and facility at the project in relation to the project boundary; (2) identify the condition of all formal and informal recreation sites and facilities within and adjacent to the project boundary, including any erosion that may exist due to recreational use; and (3) conduct visitor surveys during the recreation season to determine the adequacy of project recreation facilities and if changes or upgrades to the sites would be needed to meet current or future recreation needs.

Criterion (2) – If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.

Not applicable.

Criterion (3) – If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study.

Sections 4(e) and 10(a) of the Federal Power Act require that the Commission give equal consideration to all uses of the waterway on which a project is located. When reviewing a proposed action, the Commission must consider the environmental, recreational, fish and wildlife, and other non-developmental values of the project, as well as power and developmental values.

There are a number of public recreational opportunities within and adjacent to the project. Understanding the condition of the existing project recreation sites and facilities, the amount of current and projected future use, and how these sites and facilities are managed is essential in determining the adequacy of project recreation facilities to meet current and future recreation needs; and therefore, is relevant to the Commission's public interest determination.

Criterion (4) – Describe existing information concerning the subject of the study proposal, and the need for additional information.

Section 4.8 of the PAD (pages 123-124) provides a summary of recreation at the project and a general discussion of recreation demand in the region. It also includes a

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brief discussion of the recreation use estimates compiled every six years as part of the Licensed Hydropower Recreation Report Form 80 (Form 80) required by the project's current FERC license. However, while NYPA provides use estimates from its last four Form 80 filings, most data compiled for Form 80 filings are derived from informal surveys and estimates of use. The PAD also provides no project-specific information regarding visitor perceptions of recreation at the project, but public recreation access and reservoir levels were two of the primary topics discussed by members of the public during the September 26 and 27, 2017 scoping meetings. A study that gathers information on visitor perceptions of the adequacy of public access and facilities, current use, and whether existing access facilities in the area are meeting recreation demand would inform future license conditions related to public access and recreation facilities.

Criterion (5) – Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.

The project includes a reservoir with a surface area of approximately 4.46 square miles (2,850 acres) and a tailrace that provides informal fishing access. Continued operation of the project could affect recreational resources at the project through disruption or displacement of activities, changes to the recreational experience, increased use, changes in the types of recreation activities in the area, or by other means. The results of the study would identify existing recreation facilities and activities, detect current use patterns, and help to determine recreational demand and the potential need for new recreation facilities.

Criterion (6) – Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.

The specific methodology and scope of the recreation study can be refined during the study planning phase and upcoming proposed study plan meeting, but the study should include, at a minimum, the following provisions:

1. Identify all formal and informal public and private recreational sites/facilities within and adjacent to the project boundary.
2. Administer a recreation use survey that addresses all recreation activity types known to occur or potentially occur at the project. Specific methods should include visitor observations and on-site visitor intercept surveys at formal and informal public recreation areas at the project reservoir and tailrace, as well as spot counts.

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- Visitor observations should capture information such as location, date, time, weather, number of vehicles, watercraft (if any), number of recreation users or party size, and recreation activity.
 - The visitor survey sampling should be based on a stratified random sample that includes all seasons, various locations, and various times of week and day to enable representative responses from the visitors, while ensuring interview coverage during key times (e.g., holiday and weekend days, shoulder seasons, fishing and hunting seasons).
 - The survey instrument should include items to assess visitor perceptions of crowding, recreational conflict, conflicts between the public and adjacent property owner(s), adequacy and placement of signage, adequacy of recreation facilities and access to the project, and effects of project operation and management on recreation and recreation opportunities at the project (e.g., fluctuating reservoir levels).
 - Spot counts should be conducted on survey days. The spot counts represent short-term counts (approximately 5 minutes per site) and should record the number of vehicles parked at a site/facility and the number of users observed. This information should be statistically analyzed to develop the recreational use figures for the project. Final recreation use for the recreation facilities and sites within the project should be summarized by season and activity type for each site.
3. Using the results of the Hinckley Reservoir Volumetric Survey, requested above, quantify the relationship between reservoir surface area and reservoir levels (i.e., reservoir elevation) for the full range of operation (i.e., minimum reservoir level to full pool). This relationship should be mapped to visually assess the effects of reservoir levels on reservoir surface area and identify specific areas that may become inaccessible at lower reservoir levels.
 4. Prepare a report that includes information on the number of recreation days spent at project recreation sites, average number of persons per party, and a determination of the percent of the each facility's capacity that is currently being utilized. The above information should be entered into spreadsheets for statistical analysis. The collected information should be used to project changes to project recreation demand over the term of any new license that may be issued. The report also should include: (1) identification of all project and non-project recreation facilities at the project, including informal recreation sites; (2) the location of the recreation facilities in relation to the project boundary, including facilities/amenities that may straddle the project boundary; (3) the types and number of amenities provided at each facility; (4) the condition of the facility/amenities; (5) identification of any erosion at each recreation site; (6) entities responsible for the operation and maintenance of the facilities;

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(7) hours/seasons of operation; (8) photographs; (9) use figures for each recreation site, overall recreational use figures, and projected use figures; (10) a description of the relationship between surface area and reservoir levels and its effects on recreation; and (11) a compilation of responses to the recreation use survey.

Two or three technicians would be needed to review existing data sources, survey sites in the field from the end of May through the beginning of October, develop the inventory, evaluate past and current use, evaluate potential effects of the project on area recreation resources, and draft and finalize maps and reports.

Criterion (7) – Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.

The estimated cost of the Recreation Study is \$75,000, including study plan development, field data collection, reservoir surface area modeling and mapping, and study report preparation. One field season should be sufficient to collect the required data and prepare the study report.

Document Content(s)

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