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December 14, 2023

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Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Subject: **Deficiency of License Application and Additional Information Request
White River Hydroelectric Project (FERC Project No. 2444-042)**

Dear Secretary Bose:

On September 19, 2023, the Federal Energy Regulatory Commission (Commission) issued a Deficiency of License Application and Additional Information Request letter to Northern States Power Company, a Wisconsin corporation, regarding its final license application for the White River Hydroelectric Project (FERC No. 2444). Accordingly, NSPW hereby submits the following information and responses as requested in the Commission's aforementioned letter.

DEFICIENCIES

Exhibit A

Section 4.61(c)(1)(viii) of the Commission's regulations requires that Exhibit A include the sizes, capacities, and construction materials of project facilities. Exhibit A of the relicense application does not provide: (1) dimensions (length and width) of the north and south abutments of the concrete section of the dam that contains the intake structure and gated spillway; (2) dimensions (length and width) of the pier at the gated spillway; (3) height of the bottom segment of the Tainter gate adjacent to the south earthen embankment; (4) length of the minimum flow pipe at the dam; (5) dimensions (width, length, and height) of the intake transition section of the 7-foot-diameter concrete pipe; (6) length of the transition section from the 7-foot-diameter pipe to the penstocks; and (7) dimensions (width and height) of the stoplog section at the intake structure. Please revise Exhibit A to include this information.

NSPW Response

Exhibit A, Section 2.1 has been revised to provide the length and width of the north abutment of the concrete section of the dam that contains the intake structure, and the length, width, and height of the intake transition section.

Exhibit A, Section 2.2 has been revised to provide the length and width of the gated spillway, the pier at the gated spillway, and the height of the bottom segment of the Tainter gate adjacent to the south earthen embankment.

Exhibit A, Section 2.1 has also been revised to include the length of the minimum flow pipe and the width and height of the stoplog section at the intake structure.
The revised Exhibit A is enclosed in Appendix AIR-1.

Section 4.41(g)(1) of the Commission's regulations requires that an application include an Exhibit F that contains drawings showing all major project structures in sufficient detail to provide a full understanding of the project, including plans (overhead view), elevations (front view), profiles (side view), and sections. The Exhibit F drawings do not provide all of the

information required by section 4.41(g)(1) of the Commission's regulations, including: (1) a front view of the dam that includes: (a) the intake structure and trashrack; (b) the Tainter gates; (c) the abutments and piers of the concrete section of the dam; and (d) the north and south earthen embankments; (2) profile and typical sections of: (a) the 7-foot-diameter concrete pipe that conveys flows from the intake structure to the surge tank; (b) the penstocks; and (c) the minimum flow pipe, including elevations and diameters; and (3) a side view of the Tainter gate adjacent to the south earthen embankment that consists of the top and bottom sections. Please revise Exhibit F to include this information.

NSPW Response

NSPW has requested a 60-day extension from the Commission to submit the revised Exhibit F.

ADDITIONAL INFORMATION

General

Section 2.1 of Exhibit A states that the trash rack is 27 feet high and 12.5 feet wide, with a 1.6875-inch clear bar spacing. Section 6.1.2.2 of Exhibit E states that the trash rack is 20 feet high and 14.25 feet wide, with a 1.25-inch clear bar spacing. Please verify the dimensions (width and height) of the trash rack and the clear bar spacing, and revise the relicense application to correct the inconsistencies between Exhibits A and E.

NSPW Response

Exhibit A, Section 2.1 and Exhibit E, Section 6.1.2.2 have been revised to correct the inconsistencies between Exhibit A and Exhibit E. The revised Exhibit E is enclosed in Appendix AIR-2.

Sections 1 and 7 of Exhibit A and section 2.1.1 of Exhibit E state that project's interconnection point with the electric grid is at a step-up transformer located in a non-project substation. Please revise Exhibit A to clarify whether the substation and transformer have any non-project uses.

NSPW Response

Exhibit A, Section 7 has been updated to clarify, as previously stated in Appendix A-4 of the FLA, that the substation is not used exclusively for the Project. The substation is also part of the 69 kV grid that also supports three 12.5 kV distribution feeders. The 1,000 kVA, 69/2.4 kV step-up transformer only serves the Project and is the interconnection point with the 69 kV grid. There is no need to revise Appendix A-4 as filed in the FLA.

Sections 1.1 and 4.2.1 of the Exhibit F supporting design report (SDR) indicate that the maximum normal water surface elevation of the impoundment is 711.2 feet National Geodetic Vertical Datum of 1929 (NGVD 29). However, Exhibit A indicates that the maximum normal water surface elevation of the impoundment is 711.6 feet NGVD 29. Please verify the maximum normal water surface elevation of the impoundment and revise the relicense application to correct this inconsistency.

NSPW Response

Per the final license application, NSPW is proposing to continue to operate the impoundment between elevations 710.4 and 711.6 feet NGVD. This proposed operation is consistent with the requirements of the approved Reservoir Operating Plan. Accordingly, the SDR has been revised to correct the discrepancy. The Revised SDR is enclosed in Appendix AIR-4.

Section 1.1 of the SDR states that the top elevation of the Tainter gates is 711.4 feet NGVD 29. However, section 2.2 of Exhibit A and Sheet 2 of Exhibit F indicates that the top elevation of the

Tainter gates is 711.6 feet NGVD 29. Please verify the top elevation of the Tainter gates and revise the relicense application to correct this inconsistency.

NSPW Response

The correct elevation is 711.7 feet NGVD 29. The SDR has been revised to provide a consistent top elevation for the Tainter gates. The Revised SDR is enclosed in Appendix AIR-4.

Section 1.3 of the SDR indicates that the minimum crest elevation of the north and south embankments is approximately 720.4 feet NGVD 29. However, section 2.3 of Exhibit A states that the minimum crest elevation of the embankments is 717.62 feet NGVD 29. Please verify the minimum crest elevation of the north and south embankments and revise the relicense application to correct this inconsistency.

NSPW Response

Section 2.3 of Exhibit A has been revised. The revised Exhibit A is enclosed in Appendix AIR-1.

Section 12 of Exhibit A refers to a 2008 Supporting Technical Information Document (STID). Please file a copy of the 2008 STID.

NSPW Response

The 2008 STID is enclosed as Appendix AIR-4.

Exhibit A

Section 6 of Exhibit A indicates that water is discharged from the powerhouse directly into the White River. However, a tailrace is referenced throughout the relicense application. Please revise Exhibit A to describe any excavated areas in the streambed and/or any project structures downstream of the powerhouse, including dimensions and composition.

NSPW Response

Exhibit A, Section 6 has been revised to describe the tailrace. The revised Exhibit A is enclosed in Appendix AIR-1.

Please describe the order of start-up of the two turbine-generator units as inflow to the impoundment increases above the minimum hydraulic capacity; and describe the order of shutdown of the two turbine-generator units as inflow to the impoundment decreases below the maximum hydraulic capacity of the project.

NSPW Response

As a general practice currently, when inflow to the impoundment minus the minimum bypass flow increases above the minimum hydraulic capacity of the powerhouse, one of the two units is placed online and will automatically adjust to maintain the reservoir elevation. When flows exceed the hydraulic capacity of one unit, a second unit is placed online and is manually adjusted while the first unit remains in automatic control.

As inflow decreases from the maximum hydraulic capacity of the powerhouse, the unit that is set to adjust to maintain reservoir elevations decreases its flow release until it can no longer reduce its flow release. At that point, the second unit is manually reduced and the unit that is set to adjust for reservoir elevation maintenance continues to adjust the flow to maintain reservoir elevation.

Section 12 of Exhibit A describes the average, minimum, and maximum annual flow of the White

River at the project. Please revise Exhibit A to include the average, minimum, and maximum monthly flow of the White River at the project.

NSPW Response

Exhibit A, Section 12 has been revised to provide the additional information. The revised Exhibit A is enclosed in Appendix AIR-1.

Please revise Exhibit A to describe the order of operation of the Tainter gates (including the top and bottom sections of the Tainter gate adjacent to the south earthen embankment of the dam) under various flow conditions, including when the maximum hydraulic capacity of the powerhouse is exceeded.

NSPW Response

Exhibit A, Section 2.2 has been revised to describe the order of operation of the Tainter gates (including the top and bottom sections of the Tainter gate adjacent to the south earthen embankment of the dam) under various flow conditions, including when the maximum hydraulic capacity of the powerhouse is exceeded. The revised Exhibit A is enclosed in Appendix AIR-1.

The supporting design report filed as part of Exhibit F indicates that the intake structure includes a stoplog section. Please revise Exhibit A to describe the location and dimensions of the stoplog section at the intake structure.

NSPW Response

Exhibit A, Section 2.1 has been revised to describe the stop logs and the location and dimensions of the stoplog section. The revised Exhibit A is enclosed in Appendix AIR-1.

Exhibit E-Aquatic Resources

So that Commission staff can evaluate the effects of impoundment drawdowns, please revise Exhibit E to include a description of the current impoundment drawdown and refill procedures, if any, including but not limited to the timing, typical drawdown and refill rate, and the location of any flow releases during impoundment refills (e.g., the minimum flow pipe).

NSPW Response

As stated in Section 6.4.1.4, *Reservoir Drawdowns*, of Exhibit E in the FLA, "There are no reservoir drawdowns proposed or planned as part of this Application. Routine drawdowns are not necessary to operate the Project. Should a drawdown of greater than three weeks be necessary during the term of the new license, NSPW will consult with the appropriate resource agencies and submit a request to the Commission for a temporary license amendment."

"If a non-emergency drawdown of less than three weeks in duration is necessary during the term of the subsequent license, NSPW proposes to conduct the drawdown as a planned deviation."

Please file the "Raw Field Data Including Field Notes" and the "Analytical Data Including Laboratory Analysis Results" referred to in the Water Quality Monitoring Study filed in Appendix E-10 of Exhibit E.

NSPW Response

The data has been enclosed in Appendix AIR-5A and AIR-5B.

Exhibit E-Terrestrial Resources

The licensee is currently required to implement a Land Management Plan that was filed pursuant to Article 407 of the current license, approved on June 11, 1997, and amended on August 21, 1997. The relicense application does not discuss the Land Management Plan, including if Northern States is currently implementing the plan or proposing to continue implementing the plan. Please describe any measures that Northern States currently implements in accordance with the Land Management Plan, and whether Northern States is proposing to continue implementing any measures under the plan during the term of any subsequent license issued. If Northern States is not proposing to continue implementing the Land Management Plan, please describe any reasonably foreseeable project effects on environmental resources, including but not limited to the bald eagle, osprey, timber wolf, wood turtle, and Tremblay's salamander.

NSPW Response

Exhibit E, Section 9 has been revised to include NSPW's Land Management proposal. The revised Exhibit E is enclosed in Appendix AIR-2.

Article 408 of the current license requires Northern States to develop a plan to monitor purple loosestrife in project waters. This plan was approved by the Commission on April 25, 1997, but section 2.1.5 of Exhibit E does not mention if the plan is currently being implemented. Please describe any measures currently undertaken in compliance with the plan and summarize survey efforts and results since the plan was approved in 1997.

NSPW Response

Exhibit E, Section 2.1.5 has been revised to describe the activities completed under the plan. The revised Exhibit E is enclosed in Appendix AIR-2.

Exhibit E does not describe any current or proposed vegetation management at the project. So that Commission staff can evaluate the effects of project maintenance activities on terrestrial resources, please describe any current or proposed vegetation management activities (e.g., regular or seasonal mowing, tree trimming and/or removal, herbicide use), including methods, total acreage of project land affected, and approximate dates when the activities typically occur.

NSPW Response

Sections 6.3 and 8.5 of Exhibit E have been revised to include additional information on vegetation management at Project facilities and recreation sites. The revised Exhibit E is enclosed in Appendix AIR-3.

Section 6.4.2.1 of Exhibit E states that Northern States will implement measures to protect the northern long-eared bat during "routine recreation site maintenance." Please describe the routine maintenance activities that are being undertaken at project recreation facilities, and any potential effects to botanical or wildlife species.

NSPW Response

Section 6.3 of Exhibit E has been revised to include a description of routine recreation site maintenance. The revised Exhibit E is enclosed in Appendix AIR-2.

Table 9.3.4-1 of Exhibit E shows a reduction in the acreage of several land cover types as a result of Northern States' proposal to remove land from the current project boundary. Please describe any reasonably foreseeable environmental effects associated with Northern States' proposal to remove land from the project boundary, including any potential changes in land use, land cover, habitat types, and any effects on aquatic, terrestrial, recreation, and cultural

resources that could occur during the term of any subsequent license issued.

NSPW Response

Exhibit E, Section 11 has been revised to describe any reasonably foreseeable effects from the proposal to remove lands from the Project Boundary. The revised Exhibit E is enclosed in Appendix AIR-2.

Please revise Exhibit E to describe any plant and animal species that may occur in the project's area of potential effects that may be of cultural importance to Indian tribes and local communities, such as wild rice and game species.

NSPW Response

Section 7.2.4 has been added to Exhibit E to describe any plant and animal species that may occur in the project's area of potential effects that may be of cultural importance to Indian tribes and local communities. The revised Exhibit E is enclosed in Appendix AIR-2.

*On August 14, 2023, Commission staff accessed the U.S. Fish and Wildlife Service's Information, Planning, and Consultation database to generate a list of federally listed species that may occur within the proposed project boundary or be affected by the proposed project. Staff filed the list on FERC's eLibrary, in Docket No. P-2444-042 on the same day. The list includes the threatened Fassett's locoweed (*Oxytropis campestris* var. *chartacea*) and the proposed endangered tricolored bat (*Perimyotis subflavus*), which were not included or discussed in Exhibit E. Please describe any known observations of these species at the project and discuss potential project effects on the species.*

NSPW Response

Section 6.1.10 of Exhibit E has been revised to include the additional information. The revised Exhibit E is enclosed as Appendix AIR-2.

Exhibit E – Recreation Resources

Section 8.2 of Exhibit E states that the area in the vicinity of the project offers an "abundance" of outdoor recreational opportunities. Table 8.1-1 lists three recreation sites in the project boundary, and Table 8.1-2 lists one recreation site as occurring "in the vicinity of the White River Project Boundary." Appendix E-25 also describes two additional unnamed and undescribed fishery areas in the project vicinity. Please provide additional information on the ownership and use of the two unnamed fishery areas, and please describe any additional regional recreation opportunities in a 20-mile radius of the project, including parks and boating/fishing access areas.

NSPW Response

Section 8.1 of Exhibit E has been revised to include additional information regarding regional recreation opportunities in a 20-mile radius of the Project. This information was initially included in the Pre-Application Document. NSPW's review of recreation and natural areas within a 20 miles radius of the Project resulted in the following:

- St. Peter's Dome Natural Area
- Chequamegon National Forest
- Brunsweller River and Mineral Lake Recreation Area
- Porcupine Lake Wilderness
- Camp Nine Pines State Natural Area
- Sajdak Springs State Natural Area

- Bibon Swamp State Natural Area
- Rainbow Lake Wilderness
- White River State Fishery Area
- Moquah Barrens State Natural Area
- Valhalla Recreation Area
- Houghton Falls State Natural Area
- Whittlesey Creek Natural Wildlife Refuge
- White River Breaks State Natural Area
- Eighteen Mile Creek State Natural Area
- Lake Owen Hardwoods State Natural Area
- Drummond Woods State Natural Area
- Inch Lake State Natural Area
- Nourse Sugarbush State Natural Area
- White River Boreal Forest State Natural Area
- English Lake Hemlocks State Natural Area
- Spider Lake State Natural Area
- Copper Falls State Park
- Copper Falls State Natural Area
- McCarthy Lake and Cedars State Natural Area

Each of these regional recreation areas is maintained by entities other than NSPW and can encompass several access areas including campgrounds, picnic areas, and trailheads. The revised Exhibit E is enclosed in Appendix AIR-2.

Section 8.3.4.2 of Exhibit E describes the Recreation Use Survey observations at the canoe portage trail and canoe put-in site. The recreation activities observed were shoreline fishing and "other." Please describe any use of the canoe portage trail and canoe put-in site by hand-carry boaters.

NSPW Response

Exhibit E, Section 8.3.4.2 has been revised to include the additional information. The revised Exhibit E is enclosed in Appendix AIR-2.

The Archaeological Shoreline Monitoring Report in Appendix E-5 of the relicense application incorporates a summary of information that was developed as part of other cultural resource survey documents, including: (1) Report on Cultural Resource Investigation Along the White River Reservoir Shoreline, Ashland County, Wisconsin, and (2) Archaeological Monitoring at the White River Hydroelectric Project (FERC #2444). Please file the referenced documents. Any information containing the location, character, and ownership of archaeological resources should be filed as privileged in compliance with 18 C.F.R. § 388.112.

NSPW Response

The *Report on Cultural Resource Investigation Along the White River Reservoir Shoreline, Ashland County, Wisconsin* is already part of the record for the Project because it was contained as Appendix E in the previous license application ([Accession #19911224-0123](#)).

The report: *Archaeological Monitoring at the White River Hydroelectric Project (FERC #2444)* has been enclosed as a privileged document in Appendix AIR-6.

Exhibit F

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Sections A-A and B-B on Sheet 1 of Exhibit F do not include: (1) slope labels; (2) cross section stationing; and (3) extent of the roadway. Please revise sections A-A and B-B to include this information.

NSPW Response

NSPW has requested a 60-day extension from the Commission to submit the revised Exhibit F.

The embankment cross sections included in Appendix B1 of the SDR are not legible. Please provide an updated Appendix B1 that includes legible embankment cross sections.

NSPW Response

The revised Appendix B1 of the SDR has been updated in the enclosed SDR update as Appendix AIR-3.

Appendix D of the SDR indicates that the maximum water surface elevation of the impoundment considered in the rating curve calculations of the gated spillway is 718.3 feet NGVD 29. However, the resulting rating curves and tables included in Appendix D provide discharges associated with impoundment water surface elevations up to 717.2 feet NGVD 29. Please verify the maximum impoundment water surface elevation considered in the rating curve calculations of the gated spillway and revise Appendix D of the SDR to either clarify or rectify the inconsistency.

NSPW Response

The intent of the rating curve was to program the gates. It was to determine the flow for gate openings. It was not taken to the full reservoir elevation since the flows of the openings greatly exceeded the IDF. Revised SDR is enclosed in Appendix AIR-3.

Should you wish to access the information provided in this submittal, it is posted at the following website: <https://hydrolicensing.com/saxon/>. Should you have any questions, please contact Matthew Miller at 715-737-1353 or matthew.j.miller@xcelenergy.com.

Sincerely,

Scott A. Crotty
Senior Operations Manager - Hydro

For: Donald Hartinger
Plant Director, Renewable Operations-Hydro

Enclosure

CC: Stakeholder List

Appendix AIR-1 – Revised Exhibit A Documents

This information has been submitted as a separate file.

Appendix AIR-2 – Revised Exhibit E

This information has been submitted as a separate file.

Appendix AIR-3 – Revised Supporting Design Report

This information has been submitted as a separate file and is considered Critical Energy Infrastructure Information and is not distributed to the general public.

Appendix AIR-4 – 2008 Supporting Technical Information Document

This information has been submitted as a separate file and is considered Critical Energy Infrastructure Information and is not distributed to the general public.

Appendix AIR-5A – Raw Water Quality Analytical Data

This information has been submitted as a separate file.

Appendix AIR-5B – Raw Water Quality Data and Field Notes

This information has been submitted as a separate file.

Appendix AIR-6 – Archaeological Survey Report

This information has been submitted as a separate file and is considered
Privileged Information and is not distributed to the general public.