Attachment A

DEFICIENCIES AND RESPONSES

JUNE 15, 2020

BOYNE RIVER HYDROELECTRIC PROJECT
(FERC PROJECT NO. 3409)

APPLICATION FOR SUBSEQUENT LICENSE
FOR MINOR WATER POWER PROJECT, 1.5 MW OR LESS

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1 DEFICIENCIES

1.1 GENERAL INFORMATION

Comment:

1. Section 4.32(b)(6) of the Commission's regulations requires that an applicant provide notice of its FLA filing twice within 14 days of the filing date in a local newspaper, and file proof of the publications with the Commission. The proof of the publications has not been filed with the Commission; therefore, please file this information.

Response:

The public notice was published in the Boyne Gazette on February 5, 2020 and February 12, 2020. The notice and affidavit of publication are provided as Attachment B to the current submittal.

1.2 EXHIBIT F

Comment:

2. Section 4.61(e) of the Commission's regulations (also see section 4.41 (g)) requires, in part, the submission of an Exhibit F that consists of general design drawings of all major structures (including plan, elevation, profiles, and section views) and supporting information that is used as the basis of the design. The FLA's Exhibit F - supporting design report - does not comply with section 4.61(e) because it does not include the required geotechnical information that demonstrates that existing and proposed structures are safe and adequate to fulfill their stated functions. Specifically, sections 5.4, 5.5 and 5.6 of Exhibit F - "Report on Geotechnical Evaluation" noted that there are pending analyses that will be submitted in an upcoming Addendum. This supporting information is required in order to complete the license application review process. Please provide the following supporting information:

    a. Stability analysis of the channel intake structure retaining the left and right embankment upstream slopes;

    b. Stability analysis of the spillway structure;

    c. Seepage analysis for the right and left embankment;

    d. Stability analysis for the left embankment downstream and upstream slopes at the location of boring SB#3, where a 14-foot-thick layer of very soft/loose sand mixed with organic material with Standard Penetration Testing Blow counts (STP-N) of 1 was encountered at 8 feet below the embankment crest. It is noted that the revised analyses included a section at the SB#3 location only for the upstream slope, where the very soft/loose layers appear not to be included. Also, the shear strength parameter selected for the 14-foot-thick very soft/loose foundation material was an effective friction angle of 34 degrees, which is considered high for a material with SPT-N of 1. Sensitivity analyses may be included to evaluate the impact of this week soil foundation layer.

Response:

As promised, amendments to the FLA "Report on Geotechnical Evaluation" have been prepared by the engineering firm Prein & Newhof that address 2.a, 2.b and 2.c above. The

documents are entitled "Report on Geotechnical Evaluation - Addendum 1" and "Report on Geotechnical Evaluation - Addendum 2". Addendum 1 provides the additional embankment stability and seepage analyses and Addendum 2 provides the requested structural evaluations. These Addenda to Exhibit F are classified as CEII and as such will not be made available to the public.

In addition to the Addenda, Prein & Newhof has prepared a letter in response to item 2.d above. That letter is provided as Attachment C to the current submittal.

Comment:

3. Also, please revise the description of the spillway crest in the license application to replace the terms “flashboards” and “flash boards” for fix crest timber board (see pages 6 and 18 of the FLA). Per Note 1, on page 6, of the FLA, the crest of the spillway consists of a fix crest timber board that was provided in the 1980’s to obtain an even crest elevation after the original concrete spillway crest was lowered.

Response:

As requested, references to "flashboards", "flash boards" or "elevation adjustment boards" have been replaced with "fixed crest timber boards" in Exhibit A, In Section 1.2 of Exhibit E and in Section 4.1.1 (previously 1.8.1) of the Hydrologic and Hydraulic Report of Exhibit F.

1.3 EXHIBIT G

Comment:

4. Section 4.61(f) of the Commission’s regulations requires that a license application include an Exhibit G that includes a map or series of maps that show the location of the project, relative locations and physical interrelationships of the principal project features, and a proposed project boundary that encloses all of the principal project features identified in Exhibit A. The Exhibit G drawing does not comply with section 4.61(f) because it does not identify, label, and/or show the relative location(s) of all the principal project features referenced in Exhibit A within the project boundary, including the left and right embankments, penstock, stilling basin, discharge pipe(s), auxiliary spillway, the underground and aboveground sections of the transmission line, and the transmission line inter-connection point. Please revise Exhibit G to comply with section 4.61(f) of the Commission’s regulations. Also, identify applicant owned lands, privately owned lands, and any lands to be acquired, as may be appropriate.

Response:

A second sheet (Map 2) detailing the area around the dam has been added to the Exhibit G. It includes the left and right embankments, penstock, stilling basin, discharge pipes and auxiliary spillway. The underground and aboveground sections of the transmission line are also shown, as they were on the previous version of Exhibit G (Map 1). A note indicating the transmission line inter-connection point has been added to the Exhibit G, Map 1. Additionally, land that is owned by the applicant has been labeled as "Applicant" in the table entitled "Schedule of Properties and Areas of Interest within Project Boundary" on Exhibit G, Map 1. The non-applicant owned properties within the project boundary along the transmission line corridor and are also listed in the same table. They include property

owned by the Boyne Falls Schools (for which the applicant has an easement), the Michigan Department of Transportation M-75 Right-of-Way and the Consumers Energy facility where the transmission line interconnects with the Consumers Energy service to the Boyne Mountain Resort, an applicant owned property.

2 REQUESTS FOR ADDITIONAL INFORMATION

2.1 EXHIBIT A

Comment:

1. Section 4.61(c) of the Commission's regulations requires an Exhibit A that provides a description of the project and the proposed mode of operation including the sizes, capacities, and construction materials, as appropriate, of powerhouses, canals, intake facilities, transmission lines, and other appurtenant facilities. Table 1 "Basic Project Information" of the FLA states that the fixed crest spillway discharges to the stilling basin near the toe of the dam via a transverse collection gallery and a 5-foot-diameter by 77-foot-long concrete discharge pipe. The table also states that the sluice gate discharge is to the same stilling basin via a 5-foot-diameter by 72-foot-long concrete pipe. Please clarify whether there are two separate discharge pipes being referenced in Table 1. If the discharges are to a single pipe, please indicate which of the two referenced dimensions is correct. Also, show/label the discharge pipe(s) on the Exhibit G drawing(s).

Response:

The discharge pipes for the Fixed Crest Spillway and the Sluice Gate Spillway are separate. The following sentence has been added to the Discharge Pipe Description for the Sluice Gate Spillway in Table 1 of Exhibit A. "This discharge pipe is separate from the discharge pipe for the Fixed Crest Spillway."

2.2 EXHIBIT E

2.2.1 AQUATIC RESOURCES

Comment:

2. In section 1.5, *Flow Duration Curves*, of Exhibit F, Part 3, *Hydrologic and Hydraulic Report* of the FLA, figures four through seven show graphical representations of flow duration curves for various time periods. Please provide the flow duration information presented in figures four through seven in a tabulated format from 0 to 100 percent exceedance, and include numerical estimates for each 10 percent increment, as well the 25, 75, and 95 percent exceedance values. Additionally, please provide the mean, median, minimum, and maximum flows for each month at the project beginning November 2016 (when the new spillway gate was installed) to present.

Response:

The flow data has been updated with the addition of flow information from the period of January 26, 2019 through April 9, 2020, yielding a mostly complete data set from November 2016 into April of 2020. The flow duration curves in Exhibit F, Part 3 - Hydrologic and Hydraulic Report have been updated accordingly. The information is also provided in tabulated format as requested. In addition, the overall mean, median, minimum, and maximum flows for the above period and for each month individually have also been provided. All of this information is provided in the updated Hydrologic and Hydraulic report. The overall flow statistics have also been added to Section 1.5.2 of Exhibit E.

Comment:

3. Section 1.8.3, *Flow Duration Curves*, of Exhibit F, Part 3, *Hydrologic and Hydraulic Report, of the FLA* states that "A staff gauge has been installed for the impoundment that is marked with the operating band and placed in a clearly visible location." Please provide a detailed description of the staff gauge, including its exact location, its marked "operating band", and date of installation. Additionally, please provide a photo of the staff gauge.

Response:

The requested information about the staff gauge is provided in Section 4.1.3.2 (previously 1.8.3.2) of the Hydrologic and Hydraulic Report (Exhibit F, Part 3).

Comment:

4. Section 1.8.2, *Non-Native Plant Species Control*, of the FLA states that chemical treatment (i.e., hand treatment with an herbicide wick and/or with glyphosate) for the non-native plants including narrow-leaved cattail is recommended. The section further states that inspections in late spring and after treatments are recommended for managing non-native invasive plant species. Please clarify if these are proposed measures for the management or control of invasive plant species at the project, and if applicable, please provide additional details including methods, frequency and an estimated capital and operation and maintenance cost.

Response:

The description of the proposed adoption of a treatment program to manage or control the narrowleaf cattail has been added to Section 1.8.2.1 of Exhibit E. The annual cost of inspection and treatment are provided in Exhibit A.

Comment:

5. Section 1.8.5., *Estimates of Acreage of Wetland, Riparian, or Littoral Habitat,* of the FLA provides a description the existing wetland habitats and acreage at the project. However, there is no discussion on the effects of project operation and/or maintenance on these resources. Please provide a description of any anticipated effects on wetland, riparian, or littoral habitats of continued operation of the project, if any; and any mitigation measures (including methods, frequency, and estimated capital and operation and maintenance cost), if applicable.

Response:

A discussion of the effects of project operation and/or maintenance on these resources has been added to Section 1.8.5 of Exhibit E.

2.2.2 RECREATION AND LAND USE

Comment:

6. Section 1.11.5, *Non-Recreational Lan Use and Management with the Project Boundary*, of the FLA provides a discussion of land ownership within the power transmission corridor that is owned by Boyne Valley Schools, Boyne Mountain Resort, and Consumers Energy. Please provide a map that clearly identifies and labels the land owned by Boyne Valley Schools,

Boyne Mountain Resort, and Consumers Energy in the power transmission corridor within the existing project boundary.

Response:

Text has been added to Section 1.11.5 of Exhibit E that references the map in Figure 3 of Exhibit E. The same map is also provided as Map 1 of Exhibit G.

Comment:

7. Table 1, *Basic Information*, of the FLA estimates a proposed capital cost of $30,000 for adding riprap to address shoreline erosion. However, there is little to no discussion on shoreline erosion in section 1.11.7, Project Recreation Facilities, nor is there an explanation of any proposed measures to address shoreline erosion. Please describe the effects of project operation and maintenance on the shoreline (including erosion caused by recreation use) and provide an explanation of any proposed measures to mitigate those effects (i.e. erosion).

Response:

The area of shoreline erosion that is of a concern as mentioned in Section 1.4.3.1 of Exhibit E is not within the recreational area of the project. Therefore, a discussion of this issue is not considered appropriate for Section 1.11.7 of Exhibit E.

Comment:

8. Section 1.11.7, *Project Recreational Facilities*, of the FLA states that Boyne USA, Inc. provides tailwater fishing access to both the north and south side of the Boyne River from the hydro plant downstream to Dam Road. Access includes a ¼-mile-long path on each side with six raised stairways locations from the path to the river on the north side and four raised stairways from the path to the river on the south side. The FLA further states that additional public access to Boyne River is located on Michigan State Forest Land, including parking for 15 vehicles, adjacent to the project tailwater fishing access area on the west side of Dam Road. Please provide a map that clearly identifies the recreation user paths on the north and south side of the tailwater fishing access, the multiple raised stairways, and the public access and park area on Michigan State Forest land adjacent to the project.

Response:

A map of the project recreational area has been added to Section 1.11.7 of Exhibit E which shows these features and replaces the former Figure 35 of Section 1.11.12 which only showed the area along Dam Road.

3 ADDITIONAL NOTE

Since submitting the Final License Application on January 31, 2020, Boyne USA received a letter from the State Historic Preservation Office (SHPO) dated February 21, 2020 stating that "Based on the information provided for our review, it is the opinion of the State Historic Preservation Officer (SHPO) that **no historic properties are affected** within the area of potential effects of this undertaking." (emphasis within the original letter). Section 1.13.1 of Exhibit E has been updated to reflect this development and a copy of the SHPO letter has been added to Appendix G of Exhibit E.