Exhibit A

Project and Operation Descriptions

Boyne River Hydroelectric Project
(FERC Project No. 3409)

Application for Subsequent License
for Minor Water Power Project, 1.5 MW or Less

Information Added June 15, 2020

Appendix A contains Critical Energy Infrastructure Information and is not released to the public.

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INTRODUCTION

Boyne USA, Inc. (Boyne) is licensed by the Federal Energy Regulatory Commission (FERC) to operate and maintain the Boyne River Hydroelectric Project (FERC Project No. 3409). The existing 40-year license was issued on February 22, 1982. The current license expires on January 31, 2022.

The Boyne River Dam is located in Boyne Valley Township, MI, on the Boyne River in Charlevoix County. The Project consists of a reservoir with a storage capacity of 356 acre-feet and an area of 68 acres at a pool elevation of about 636.8 (NAVD 88). The Boyne River Hydroelectric Project is a minor project with an installed power capacity of 250kW and an existing dam embankment about 865 feet long. The north (right) embankment section of the dam is about 180 feet long and the south (left) embankment is about 610 feet long with the spillway making up the remainder of the overall length. The spillway section of the dam is made of concrete, and the embankment sections are earth fill structures. There is also a 2.5-mile-long 12.5 kV transmission line and appurtenant facilities.

This Exhibit A provides basic information about the project and its operation as part of the subsequent license application for the project.

1. BASIC PROJECT INFORMATION, 18 CFR § 4.61 (C)(1)

Basic project information is presented in tabular format in Table 1:

Table 1. Basic Project Information

(i)	**Generating Unit Information**	
	Number of Generating Units	One Turbine
	Unit Capacity	Nameplate Capacity- 250 kW
	Provision for Future Units	None
(ii)	**Type of Hydraulic Turbine**	Leffel Vertical 21-inch Type "A" propeller turbine
(iii)	**Plant Operation**	
	Manual or Automatic Operation?	The plant is operated with a manual start up. Shut down is automatic when the water level drops to gage level of 15.2 (636.29 NAVD 88)
	Plant Used for Peaking?	The plant is run of the river and is not operated for peaking.
(iv)	**Estimated Annual Generation**	The average estimated annual generation for 2017 and 2018 was 660.9 MWh
(v)	**Estimated Average Head on the Plant**	32.7 feet (Note: maximum reservoir depth is about 19 feet, likely because of sediment deposition during the 100 plus years the dam has been in place.)
(vi)	**Reservoir Information**	
	Surface Area	68 acres at pool elevation 636.80 NAVD 88
	Net Storage Capacity	253 Acre Feet
	Gross Storage Capacity	356 Acre Feet at pool elevation 636.80 NAVD 88
(vii)	**Estimated minimum and maximum hydraulic capacity of the plant and estimated average flow of the stream at the plant**	
	Minimum Hydraulic Capacity	30 cubic feet per second (cfs)
	Maximum Hydraulic Capacity	140 cfs
	Estimated Average Streamflow	55 cfs (2017 & 2018)

(viii) Sizes, capacities, and construction materials	
Embankment	Approximately 610 feet long (left) and 180 feet long (right) of the spillway. The left earthen embankment has a concrete wall at its core (see geotechnical study for further details). The structural height of the embankments (crest to downstream toe) is approximately 30 feet for the left embankment and 18 feet for the right.
Headrace/Spillway Channel	Concrete lined channel with the following approximate dimensions: 50 to 72 feet wide by 132 feet long by 12 feet deep.
Fixed Crest Spillway	35 feet (weir length) concrete fixed crest spillway topped with fixed crest timber boards (see Note 1). The top of the boards is set at elevation 636.53, approximately 12.5 feet above the floor of the headrace channel.
Discharge Pipe	The fixed crest spillway discharges to a transverse collection gallery. At the right end of the gallery is a 5-foot diameter by 77 feet long concrete discharge pipe that carries the flow down to the stilling basin near the toe of the dam.
Downstream Stilling Basin	Concrete stilling basin with diverging walls, baffle blocks and saw-tooth floor. The dimensions of the stilling basin are 8.3 feet wide at the upstream end, 16 feet wide at the downstream end and 20 feet long. The basin is about 4 feet deep from the overflow crest down to the floor.
Sluice Gate Spillway	The sluice gate is located just to the right of the fixed crest spillway and is 6-foot wide by 7-foot 9-inches high. This gate has rollers on each side that run on steel surfaces when the gate is lifted and lowered. The gate is operated with a surface mounted heliocentric gear hoist.
Discharge Pipe	The sluice gate discharges to a 5-foot diameter by 72 feet long concrete pipe that carries the flow down to the above-mentioned stilling basin at the toe of the dam. This discharge pipe is separate from the discharge pipe for the Fixed Crest Spillway.
Downstream Stilling Basin	Same stilling basin indicated above.
Penstock	The penstock consists of two 5-foot diameter steel pipes that join together in a Y branch connection. From the Y branch connection, the water travels in a common 7-foot diameter pipe to the turbine connection. The water travels approx. 74 feet from the upstream penstock entrance to the turbine.

Auxiliary Spillway	The auxiliary spillway consists of twin 18-inch diameter steel pipes, approximately 75 feet long, located in the left embankment approximately 135 feet left of the headrace channel. The pipe intakes are just below water level at the shoreline and the pipes discharge to a concrete stilling basin at the toe of the embankment. The water leaves the stilling basin and enters what was formerly a fish-rearing pond that is approximately 55 feet wide and 215 feet long that curves northward towards the Boyne River, downstream of the dam. Water flows from the pond to the River via a 36" diameter overflow pipe.
Emergency Spillway	The emergency spillway provides overland flow that starts as a broad low-lying area along the shoreline (over 100' wide) to the right of the headrace channel and gently slopes to a cut at the right end of the right embankment where the water is conveyed in a channel (bottom width of 15 to 20 feet, side slopes 1H:1V to 2H:1V)to a relatively flat low-lying area downstream of the right embankment. A significant discharge through the emergency spillway would result in the flow eventually returning to the Boyne River. The flow path of the emergency spillway is approximately 715 feet long.
Powerhouse	The powerhouse is approximately 24-foot square with a concrete substructure and brick superstructure.
Transmission Line	The transmission line leaves the powerhouse and travels underground for approximately 100 feet where it is stepped up from 2400 V on a pole-mounted transformer to 7.2/12.5 kV and continues overhead for approximately 2.34 miles. The last 1,300 feet +/- at the Boyne Mountain end is also buried. The transmission line connects into a PMH switchgear that is on the Boyne Mountain side of the Consumers Energy utility primary metering cabinet supplying Boyne Mountain.
(ix) The estimated cost of the project	No new project is contemplated. Boyne Mountain's estimated cost for the project totals $528,320 and does not include the cost of the land.
(x) The estimated capital costs and estimated annual operation and maintenance expense of each proposed environmental measure	The capital cost of adding riprap to address shoreline erosion is anticipated to be $30,000. In addition, it is anticipated that Boyne will spend approximately $900 in 2020 for narrowleaf cattail management and control and $700 in subsequent years.

Note 1: The 1939 plans for major reconstruction of the dam do not show the fixed crest timber boards. The entire weir wall, including the overflow section, was concrete. The plans indicated that the top/overflow elevation of the weir wall was 637.2 (NAVD 88). It is the understanding of long-time Boyne leadership (although it pre-dates their employment at Boyne) that at the time of the original licensing of the project in 1982 there was a requirement to lower the crest of the

concrete weir. Therefore, the concrete was chipped away, leaving exposed rebar that was originally embedded in concrete (still evident today). Apparently, the fixed crest timber boards were added to provide a uniform, level overflow elevation in contrast to the rough, chipped away top of concrete surface.

The top of the boards are set at elevation 636.53 (NAVD 88), 8 inches (0.67 feet) lower than the original top of concrete elevation. The boards consist of 2"x6" lumber. The boards are fixed in place and are never adjusted, other than replacement-in-kind when the boards become rotten. The boards are evident in photo number 17 taken on July 11, 2012 as presented in the July 31, 2013 Dam Safety Inspection Report completed by the FERC.

2. Purpose of the Project, 18 CFR § 4.61 (c)(2)

The purpose of the project is to generate clean, renewable power in an economical way for operations of the Northern Michigan resort, Boyne Mountain Resort. This reduces the requirement for power purchased from the utility, Consumers Energy.

3. Estimated Cost of Relicensing, 18 CFR § 4.61 (c)(3)

The total estimated cost to develop the license application is $315,000. This includes administrative, legal, consultation, survey work, studies and miscellaneous costs.

4. On and Off Peak Values of Project Power, 18 CFR § 4.61 (c)(4)

This information request does not apply to this project because it is operated in a run-of-river mode.

5. Estimated Change in Project Generation, 18 CFR § 4.61 (c)(5)

No significant change in project generation is anticipated under the subsequent license.

6. Undepreciated Net Investment (Book Value) of the Project, 18 CFR § 4.61 (c)(6)

The remaining undepreciated book value of the project (not including land) is $151,000 as of April 31, 2019.

7. Estimated Annual Cost of the Project, 18 CFR § 4.61 (c)(7)

Boyne USA estimates the annual operation and maintenance expense to be $40,000. This figure does not include capital expenditures or any re-licensing costs. It does include an estimated annual cost of $5,000 for providing recreational opportunities as mentioned in Exhibit E.

8. Single Line Diagram, 18 CFR § 4.61 (c)(8)

The single line electrical diagram is included as Appendix A to this Exhibit A.

9. PROJECT SAFETY MEASURES, 18 CFR § 4.61 (C)(9)

The Boyne River Dam has been classified as Low Hazard Potential. Boyne USA has implemented the following safety measures for the Project:

- Water level instrumentation with a high-water alarm notifying staff of an alarm condition via auto-dialer.
- Daily visits to the project to perform visual observations and record water levels and operational parameters,
- Preparation of an Emergency Action Plan,
- Annual testing of the spillway gate as per 18 CFR § 12.44, and
- Preparation of a Public Safety Plan (PSP) in 2010.

In addition to these measures that have been implemented by Boyne USA, the FERC completes triennial Dam Safety Inspections of the Project.

APPENDIX A – SINGLE LINE ELECTRICAL DIAGRAM [1]

[1] Appendix A contains Critical Energy Infrastructure Information and is not released to the public.