Michigan Department of Environment, Great Lakes, and Energy
Certification under Section 401 of the
Federal Clean Water Act

In the matter of: **Boyne USA, Inc.**
Boyne River Hydroelectric Project
One Boyne Mountain Road
Boyne Falls, Michigan 49713
Federal Energy Regulatory Commission Project Number P-3409-032

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) certifies that the Boyne River Hydroelectric Project located on the Boyne River in Charlevoix County will comply with the Michigan Water Quality Standards (WQS) provided the conditions set forth in this Certification are met. This Certification is issued to Boyne USA, Inc. (BC) under Section 401(a) of the federal Clean Water Act based on their request letter dated February 10, 2020, and received by EGLE on February 11, 2020, and other information contained in the official files of EGLE, Water Resources Division. Fish passage and turbine mortality issues are not addressed by this Certification and will be evaluated during negotiations under Section 10(j) of the federal Power Act (Title 16 of the United States Code, Sections 791a-825r).

Certification Conditions:

1.0 BC Hydroelectric Project - Operational Requirements (see also Section 7.0):

1.1 The BC shall maintain the level of the Boyne Impoundment at a minimum elevation of 636.53 feet National Geodetic Vertical Datum 1988 (NAVD 88), and any fluctuation shall not exceed +/- 0.25 feet on an annual basis, except during events beyond the control of the BC, including naturally low flows (636.28 feet NAVD 88 to 636.78 feet NAVD 88).

1.2 Upon Federal Energy Regulatory Commission (FERC) license issuance, the BC shall always operate the BC Hydroelectric Project in a run-of-river mode. Run-of-river means the instantaneous flow downstream of the BC Powerhouse shall approximately equal instantaneous in-flow to the Boyne Impoundment.

1.3 The BC shall, within six months of the FERC license issuance, install a calibrated staff gauge referenced to the NAVD, in the Boyne Impoundment at a location approved by EGLE clearly visible to the public. The staff gauge shall be accompanied by a sign that shows the operating levels required by Section 1.1 of this Certification. The Boyne Impoundment level shall be recorded at least hourly. An annual summary report of all recorded Boyne Impoundment levels shall be submitted by March 31 of each year to EGLE. In addition, any recorded Boyne Impoundment level data shall be submitted within five business days to EGLE or the Michigan Department of Natural Resources (MDNR), upon request.

1.4 The BC shall maintain a minimum flow in the bypassed natural river channel immediately downstream of the BC Dam. The BC shall work with the MDNR and provide the required minimum flow to the tailrace during an unexpected plant shutdown during low flow periods.

1.5 The BC shall, within one year of the FERC license issuance, provide a plan for approval by EGLE, to monitor the flow of the Boyne River downstream of the Boyne River Hydroelectric Project on an hourly basis. This plan shall be implemented immediately after

all approvals required by the FERC license, including EGLE approval, are obtained. The plan shall include annual submission of summary results to EGLE with a copy to the MDNR and a provision for submission of all flow data to EGLE or the MDNR within five business days, upon request.

1.6 A three-year test period, beginning after the flow monitoring plan in Section 1.5 is implemented, shall be used to determine the BC's ability to comply with the requirements listed in Sections 1.1, 1.2, and 1.4 of this Certification. Within 90 days after the end of the three-year test period, the BC shall submit a report to EGLE that documents the BC's ability to comply with all of these requirements. If EGLE concludes that the BC is not able to comply with these requirements, the BC shall, within one year, in cooperation with EGLE and the MDNR, develop a corrective action plan and implementation schedule to meet these requirements. The BC shall implement the corrective action plan upon approval by EGLE and any other agency specified in the FERC license.

1.7 During adverse conditions such as periods of naturally low stream flow when the requirements in Sections 1.1, 1.2, and 1.4 cannot be met, the BC shall, within two business days, consult with the EGLE, Gaylord District Supervisor, and the MDNR, regarding emergency actions taken or planned to meet the requirements. Consultation during the adverse conditions shall continue following a mutually agreed upon schedule. Upon cessation of the adverse conditions, the BC shall resume normal operations.

2.0 BC Hydroelectric Project - Water Quality Limitations:

2.1 The BC shall not at any time warm the Boyne River downstream from the BC Hydroelectric Project, by operation of the project, to temperatures in degrees Fahrenheit higher than the following monthly average maximum temperatures:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
38	38	43	54	65	68	68	68	85	56	48	40

This Section (2.1) shall not apply when the natural temperatures of the Boyne River measured upstream of the BC Impoundment exceed the above monthly maximum temperature values. In such cases the Boyne River should not raise the water temperature downstream from the BC by more than 3 degrees Fahrenheit.

2.2 The BC shall not cause the dissolved oxygen (DO) concentration measured in the Boyne River downstream of the BC Hydroelectric Project, by operation of the project, to be less than 7.0 milligrams per liter at any time.

2.3 The compliance point for the temperature and DO limits shall be in the Boyne River within 500 feet downstream of the powerhouse, unless upon demonstration by the BC, a different compliance point is appropriate and approved by EGLE.

2.4 In the event that any of the water quality limitations listed in Sections 2.1 and 2.2 of this certification are not met, the BC shall inform the EGLE, Gaylord District Supervisor, in writing, within two business days of the issue, how they plan to resolve the issue, and the expected time frame. The BC shall inform EGLE when they are back in compliance.

3.0 BC Hydroelectric Project - Water Quality Monitoring and Reporting:

3.1 The BC shall monitor the temperature and DO of the Boyne River hourly from June 1 through September 30 at the compliance point downstream of the BC Hydroelectric

Project, and at a representative location upstream of the facility (as approved by EGLE per Section 2.3), beginning the first year after the monitoring plan is approved by EGLE.

Temperature and DO profile monitoring shall also be conducted in the deepest part of the impoundment every two weeks from June 1 through September 30. Measurements shall be made at 0.5-meter increments or less. Secchi disc depth measurements shall be made at the same time and location as the profiling.

After one year of monitoring, the BC may send a written request to EGLE to change the frequency of the temperature and DO monitoring. Alternative monitoring frequencies for temperature and DO may be implemented by the BC upon written approval from EGLE.

3.2 Beginning one year after the issuance of the FERC license and every ten years thereafter, the BC shall monitor the edible portion of fish from the BC impoundment for total mercury, polychlorinated biphenyls (PCB), dioxin/furans, and dioxin-like PCBs. The sample shall consist of ten legal size resident predator fish of one species and ten bottom feeder fish of one species that are representative of the sizes normally consumed by anglers. In the case that the large legal size cannot be caught in the impoundment, the sample size can be changed upon EGLE approval. Fish shall be frozen and provided to EGLE for individual analysis at the state laboratory. Other fish tissue data of adequate quality less than five years old from the impoundment may be substituted upon EGLE approval.

3.3 The BC shall, within six months of the FERC license issuance, submit a plan for approval by EGLE, for the monitoring specified in Sections 3.1-3.3, including consideration of Quality Assurance/Quality Control protocols. All analytical methods used shall be those approved by the United States Environmental Protection Agency pursuant to Title 40 of the Code of Federal Regulations, Part 136, or methods approved by EGLE. An annual report of the data generated to comply with Sections 3.1-3.3 shall be submitted to EGLE within 3 months of completing the analysis or, for Sections 3.2 and 3.3, within 3 months of EGLE approval to use other fish tissue or sediment data if such approval is given. The report shall include a summary of quality assurance data.

Monitoring reports shall include, at a minimum, the following provisions:

A. A determination of the daily minimum, daily average, and daily maximum DO and temperature for each monitoring station. Data shall not be censored. An accounting shall be made for the entire monitoring period. Data gaps shall be fully explained.

B. An upstream/downstream comparison of the DO and temperature, including the frequency and magnitude of any values that exceed or violate the WQS at each station.

C. An evaluation of the relation between any observed temperature and DO violations and other environmental factors that were monitored, and operating characteristics of the Boyne River Hydroelectric Project.

3.4 Alternative frequencies for the monitoring required in this section may be implemented upon written approval from EGLE.

4.0 Boyne River Hydroelectric Project - Bank Erosion Control:

4.1 Within one year of FERC license issuance, the BC shall submit and implement a plan to EGLE for a periodic inspection program to promptly identify any new erosion

caused by the BC Hydroelectric Project. Prior to implementation, the plan shall be approved by EGLE. The plan shall specify the scope of the areas to be inspected, criteria for identifying erosion needing corrective measures, and prompt action when corrective measures are needed. The plan shall be effective immediately following all approvals required in the FERC license.

5.0 BC Hydroelectric Project - Natural Organic Debris Maintenance:

5.1 The BC shall, within one year of the issuance of the FERC license, develop and submit for approval by EGLE, a plan to pass natural debris (logs, stumps, sticks, limbs, leaves) collected on the trash racks and log booms over the dam. The BC shall remove and properly dispose of all other materials collected in the trash racks and spill gates including aquatic plants. The plan shall include appropriate safety provisions and a schedule for implementation.

6.0 BC Hydroelectric Project - Schedule Modification:

6.1 The BC may modify the specified implementation schedules within this Certification upon written request from the BC, in the event the BC, despite their good faith effort, is unable to meet the schedules specified within this Certification because of events beyond their control.

7.0 Boyne River Hydroelectric Project - Temporary Modification of Operational Requirements:

7.1 Operational requirements specified in Section 1.0 of this Certification may be temporarily suspended for completion of necessary inspections, maintenance activities, dam safety activities, or in response to emergency requests from government agencies provided that prior written approval is obtained from the BC; EGLE, Gaylord District Supervisor; and the MDNR.

8.0 Boyne River Hydroelectric Project - Natural Resource Damages and Penalties:

8.1 The state reserves the right to seek civil and/or criminal penalties and liabilities under applicable law for natural resource damages that may occur.

9.0 Boyne River Hydroelectric Project - Permits and Approvals:

9.1 The issuance of this Certification does not authorize violation of any federal, state, or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any EGLE permits, or approvals from other units of government as may be required by law. For all proposed drawdowns and refills for dam maintenance purposes, the BC shall obtain any necessary state of Michigan permits.

10.0 Boyne River Hydroelectric Project - Right of Entry:

10.1 The BC shall allow EGLE and MDNR employees, upon the presentation of credentials, to enter upon the BC premises at reasonable times, to have access to, and copy any records required to be kept under the conditions of this Certification, and to inspect the facilities or to conduct any environmental sampling. Any agent appointed by EGLE shall send a written request to BC for permission 48 hours prior their visit. EGLE agent(s) will comply with BC personnel safety requirements while on BC property unless more stringent safety procedures are required by the State of Michigan.

11.0 Boyne River Hydroelectric Project - Changes:

11.1 The BC shall provide written notification to EGLE and a copy to the MDNR within 10 days of any change that has occurred or may occur in the structures or operation of the BC Hydroelectric Project, which may affect compliance with this Certification or the WQS.

12.0 Boyne River Hydroelectric Project - Revocation:

12.1 If EGLE determines that BC can no longer comply with Section 401(a) of the Clean Water Act and WQS, then this Certification may be revoked or modified after appropriate notice.

The contact points for consultations, approvals, and submittal of plans and reports as referred to in this document are as follows:

EGLE	Unit Supervisor, Lake Michigan Unit Surface Water Assessment Section P.O. Box 30458 Lansing, Michigan 48909-7958 Phone: 517-230-7548 Gaylord District Supervisor 7953 Adobe Road Kalamazoo, Michigan 49009-5025 Phone: 269-330-8381
MDNR	Habitat Management Unit Fisheries Division P.O. Box 30446 Lansing, Michigan 48909 Phone: 517-284-5830

Issued this 8th day of January, by EGLE, and shall expire at the end of the FERC license period.

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Michael Alexander, Manager
Surface Water Assessment Section
Water Resources Division
EGLE