FEDERAL ENERGY REGULATORY COMMISSION
Washington, D. C. 20426

OFFICE OF ENERGY PROJECTS

Project No. 2785-015--Michigan
Sanford Project

Project No. 10808-005--Michigan
Edenville Project

Project No. 10809-004--Michigan
Secord Project

Project No. 10810-006--Michigan
Smallwood Project
Boyce Hydro Power, LLC.

August 3, 2018

Lee W. Mueller
Co-Member Manager
Boyce Hydro Power, LLC
10120 W. Flamingo Road, Suite 4192
Las Vegas, NV 89147

Subject: Additional Information Request and Status of 2018 Water Quality Monitoring – Articles 402 or 407

Dear Mr. Mueller:

On July 11, 2018, we received your updates for the status of the 2018 water quality monitoring pursuant to the approved Water Quality Monitoring Plans[1] for the Sanford (FERC No. 2785), Edenville (FERC No. 10808), Smallwood (FERC No. 10810), and Secord (FERC No. 10809[2] projects. Additionally, we reviewed your April 30, 2018, description of temperature monitoring in the tailrace of the Sanford Project. In order for us to complete our review of these filings, we are requesting additional information about your minimum flows and temperature monitoring, according to your project licenses and Water Quality Monitoring Plans.

[1] Order Modifying and Approving Water Quality Monitoring Plans. 87 FERC ¶ 62,365 (issued June 29, 1999).

[2] Order Issuing Minor License. 85 FERC ¶ 61,064 (issued October 16, 1998).

Background and Requirements

Pursuant to the Water Quality Monitoring Plans (as required by Article 407 of the Sanford Project, and Article 402 of the Edenville, Smallwood, and Secord projects), you are required to monitor water temperature and dissolved oxygen (DO) levels below each project, at the confluence of the tailrace and the bypassed reach. Temperature is to be monitored year-round and DO is to be monitored from June 1 through September 30; both parameters are to be recorded on an hourly basis. You must implement all reasonable and prudent measures to ensure that the water quality standards are met whenever inflows to the projects are greater than or equal to the 95 percent exceedance inflow, and take corrective actions as appropriate in response to deviations from the standards. The Water Quality Monitoring Plans stated that you would connect the monitoring equipment to a SCADA system to ensure corrective action could be quickly enacted if the standards are not met, which you completed in 2017.

At each project, you are required to operate the project reservoir elevation so that it does not fluctuate more than 0.4 foot below or 0.3 foot above the normal pool elevations[3] (except during the winter drawdown) as described below:

Project	License Article		Normal Pool
	Elevation	Gaging Plan	
Sanford, P-2785	411	402	625.0 feet
Edenville, P-10808	404	406	675.8 feet
Smallwood, P-10810	403	405	704.8 feet
Secord, P-10809	403	405	750.8 feet

At the Sanford Project, Article 401 requires you to release a minimum flow of 210 cubic feet per second (cfs) from May 1 through March 14, and 650 cfs from March 15 through April 30, as measured immediately downstream of the project. At the Edenville Project, Article 403 requires you to provide a minimum flow of 40 cfs from October 1 through March 31, and 66 cfs from April 1 through September 30, into the Tobacco River bypass channel, as measured at the outlet of the Edenville Dam into the Tobacco River bypass channel. There are no minimum flow release requirements at the Smallwood and Secord projects.

2018 Water Quality Monitoring Status

Your July 11, 2018, letter indicates that due to the dry and hot summer weather conditions, which are affecting the entire Tittabawassee River basin, it is not currently possible for you to sustain both the reservoir elevation requirements and the minimum

[3] Elevations in National Geodetic Vertical Datum (NGVD).

DO standard at the same time. You report that due to the lack of water flowing into the river system, you have substantially curtailed operations and will continue to do so until rainfall begins to replenish the river's water supply. You state that when water levels are low and approach the minimum allowable reservoir elevations, you will shut down the project turbines. In these instances, opening of the spill gates to maintain minimum flow or to aerate water in the project tailraces to improve DO levels cannot be sustained for an extended period of time without causing the impoundments to fall below the required elevations. You report that until there is an increase in precipitation, you will be reducing the minimum flow at the Sanford project from the required 210 cfs to 140 cfs, and that you have notified downstream parties of this decrease in flows. Your filing does not indicate a change in minimum flow to the Tobacco River bypass at Edenville. You state that you will record these operational limitations and will include the information in the annual water quality report to be taken into consideration, as identified in Commission staff's July 28, 2017 letter to you.

Temperature Monitoring

Your April 30, 2018, filing provided a description of how you were monitoring temperatures in order to determine when to return the impoundment to the normal elevation in the spring, in response to an inquiry from Michigan Department of Natural Resources (Michigan DNR). You stated that you determine whether the temperature criteria for the elevation requirements has been met by measuring temperature in the impoundment of each project, and that the only tailrace temperature reading occurs at the Sanford Dam utilizing an electronic device. You state that you follow this protocol in compliance with the Water Quality Monitoring Plan, because it was determined after license issuance that the reservoir temperature immediately downstream from the tailrace of each hydro station were indicative of the upstream temperature within a degree. Because the Sanford project is the furthest downstream, you stated that the electronic temperature measuring sensor is installed in the Sanford tailrace for license compliance.

Discussion and Additional Information Request

We acknowledge the current operational restrictions and the potential impacts to water quality. We note that drought records for Gladwin and Midland counties, where the projects are located, indicate that, June 2018 is the driest (Gladwin) or second driest (Midland) June in comparison to the most recent 10 years of precipitation data.[4] As noted in our July 28, 2017 letter to you, you should maintain a complete record of operations at the projects to support the data in your annual water quality report, as this

[4] NOAA National Centers for Environmental information, Climate at a Glance: County Time Series, published July 2018, retrieved on July 26, 2018 from https://www.ncdc.noaa.gov/cag/. As of the date of this letter, July 2018 data was not available.

information will be valuable in examining any water quality deviations that occur in 2018. Specifically, we expect that you record operational and environmental data for each project, including to the extent possible (and not limited to): headwater elevations; the number of units operating; whether spill is occurring; duration and volume of spill; river flows and whether inflows are greater than or equal to the 95 percent exceedance inflow;[5] when generation was curtailed and any efforts that were taken to increase DO after the curtailment; minimum flow releases at Sanford; and precipitation.

Further, as previously stated in our May 10 and July 28, 2017 letters to you, it may be necessary for you to modify project operation in order to balance water quality requirements and reservoir elevation requirements. This may include not operating the turbines for as many hours as you normally would during the low-DO period, and/or refraining from drawing the reservoirs down to the minimum elevation level in order to retain water sufficient for some amount of spill to correct water quality deviations. The license requirements acknowledge that drought conditions has the potential to limit your ability to maintain water quality standards, in that it requires you to meet the standards when the inflows to the projects are greater than or equal to the 95-percent-exceedance inflow.

In order for us to better understand the situation in the Tittabawassee River and your approach to operations, please file the following additional information about the generation curtailment and potential impact to water quality with the Commission within 15 days of the date of this letter:

- Whether you received any guidance or correspondence from the resource agencies on the issues resulting from low water elevation;
- How you determined that the 140 cfs minimum flow at Sanford was appropriate or sufficient under Article 401 for the Sanford Project.

The requirement for temperature monitoring, pursuant to the water quality monitoring article for each license the approved Water Quality Monitoring Plans, is to monitor temperature the tailrace of each project on a year-round basis. Based on the explanation you provided in the April 30, 2018 filing, it appears you are only monitoring temperature in the Sanford tailrace. Please file the following additional information with the Commission within 15 days of the date of this letter, addressing the following details:

[5] The 95 percent exceedance flow may be found in the Michigan Department of Environmental Quality's Low Flow Discharge database, online at http://www.deq.state.mi.us/flow/lflowqry.asp. Please note that discharge values are only valid for one year after the original request date.

- Whether you are currently collecting water temperature data year round at each project, and if not, why; and
- When the practice of year-round temperature monitoring in the tailrace ceased;

The information we are requesting should be readily available and therefore, 15 days should provide sufficient time for you to file the requested information. The Commission strongly encourages electronic filing, using the Commission's eFiling system at http://www.ferc.gov/docs-filing/efiling.asp. For assistance, please contact FERC Online Support at FERCOnlineSupport@ferc.gov, (866) 208-3676 (toll free), or (202) 502-8659 (TTY). In lieu of electronic filing, please send a paper copy to: Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Washington, D.C. 20426. The first page of any filing should include docket number P-2785-015, P-10808-005, P-10809-004, and P-10810-006.

Thank you for your cooperation in this matter. If you have any questions pertaining to this letter, please contact me at (202) 502-6833 of holly.frank@ferc.gov.

Sincerely,

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and Compliance

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