

FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON D.C. 20426

OFFICE OF ENERGY PROJECTS

Project No. 10808-046—Michigan  
Edenville Hydroelectric Project  
Boyce Hydro Power, LLC

**May 2, 2013**

Mr. Lee Mueller  
Boyce Hydro Power, LLC  
6000 S. M-30, P.O. Box 15  
Edenville, Michigan 48620

Subject: Complaint regarding flooding of home on Wixom Lake

Dear Mr. Mueller:

Thank you for your report filed March 18, 2013 providing water level data and operational information for the Edenville Hydroelectric Project. We required this information in response to reports that a lakeshore resident upstream of the Edenville Dam, on Wixom Lake, had their home flooded in the early morning hours of January 31, 2013. The information you provided is sufficient for us to complete our review of your compliance with article 404. However, the information is not sufficient to complete our review of your compliance with article 406.

License Requirements

License article 404 of the Order Issuing Original License<sup>1</sup> requires you to operate the Edenville Project during the winter drawdown period, which you were operating in on January 31, 2013, so that Wixom Lake does not fall below elevation 672.8 feet NGVD and so that daily fluctuations in Wixom Lake do not exceed 0.7 foot. Article 406 of the license and the project's approved Reservoir Level Gaging Plan<sup>2</sup> require you to monitor water surface elevations in Wixom Lake at intervals of 15 minutes or less.

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<sup>1</sup> See 85 FERC ¶ 61,063 (issued October 16, 1998).

<sup>2</sup> See Order Modifying and Approving Reservoir Level Gaging Plan and Extension of Time to Design Minimum Flow Release Structure issued June 22, 1999 (87 FERC ¶ 62,333).

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Your Report filed March 18, 2013

Your report includes water elevation data for Wixom Lake for the 10 days prior to and including February 1, 2013. The data was obtained from the Edenville powerhouse staff gauge on the Tittabawassee River segment of Wixom Lake. You say that the elevation data, as measured at the gauge, demonstrates that you exceeded the 0.7-foot daily fluctuation limit on January 30, 2013 by 0.1 foot. According to your report, a rapid rise in lake levels began around 1:00 am on January 30<sup>th</sup> and continued throughout the morning with a maximum level rise of 0.8 feet by 9:30 am later that morning. Our review of your data finds that you exceeded the 0.7-foot daily fluctuation line by 2.4 feet. Water reached a maximum level rise of 3.1 feet by midnight on January 31, 2013 (676.11 feet NGVD). You were contacted by the homeowner at approximately 3:45 am on January 31, 2013, when the water level was at 676.08 feet NGVD.

You say in your report that during this time there was a considerable amount of rainfall in the river basins that supply Wixom Lake, in particular the South Branch of the Tobacco River. The South Branch joins the North Branch at the Beaverton Hydro Station and Dam (Beaverton), a hydroelectric facility located upstream of your facility on the Tobacco River. At Beaverton, the north and south branches meet to form the Main Branch of the Tobacco River, which flows directly to Wixom Lake. You provided rainfall data in Exhibit B of your report that shows approximately two inches of rain had fallen between January 28 and January 30, 2013. You also provide U.S. Geological Survey (USGS) data for gauge 04152238 located on the South Branch of the Tobacco River and upstream of the Beaverton facility, in Exhibit C1. The data show that water levels rose from a little below 5 feet in height on January 28 to almost 12 feet in height by late morning or mid-day on January 30, 2013 – a rise of nearly 7 feet in two days. In addition, you provided flow data from that same USGS gauging station in Exhibit C2 that shows between January 29 and January 31, 2013, the flow of the South Branch of the Tobacco River increased from approximately 150 cubic feet per second (cfs) to over 2,000 cfs in two days, before starting to decline on February 1, 2013.

In your report, you indicate that there was some confusion over information you received from Beaverton, which had reported 10 feet of spill at 5:00 am on January 31, 2013. However, you say that it was actually 20 feet of spill – 10 feet from each of the two gates at the Beaverton facility. You included as Exhibit E to your report a signed training sheet from the Beaverton facility that shows the operators have conducted training with their employees to ensure spill data communicated to Edenville operators is now done as total feet of gate opening and that they plan to improve internal reporting procedures to avoid any future confusion of the amount of gate opening at the facility.

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Your report also discusses the location of the staff gauge used to determine the overall water level for Wixom Lake. The gauge is located at the southeastern corner of Wixom Lake (Tittabawassee River side). The homeowner who reported flooding is located in the northwestern part of Wixom Lake (Tobacco River side). Flows between the western portion and eastern portion of Wixom Lake, according to your report, are somewhat constrained by the Route M-30 causeway, which bisects Wixom Lake from north to south, separating the two rivers that form Wixom Lake. To resolve any possible differences in water level height that the distance or causeway may create, you propose to install an additional water level gauge on the Tobacco River side of the Edenville Dam that can be remotely monitored. You say this gauge will be installed by October 1, 2013.

### Discussion and Conclusion

License article 404 requires you to operate the Edenville Project during the winter drawdown period, which you were operating in on January 31, 2013, so that Wixom Lake does not fall below 672.8 feet NGVD and so that daily fluctuations do not exceed 0.7 foot. Your report indicates that you exceeded that daily fluctuation limit on January 30, 2013 by 0.1 foot, however, our review indicates that you actually exceeded this limit by 2.4 feet. Nevertheless, because of the large amount of rainfall in the area and subsequent high inflows, we conclude that the daily fluctuation limit you exceeded on January 30, 2013 was beyond your control and will not be considered a violation of article 404.

Article 406 and your approved Reservoir Level Gaging Plan require you to monitor water surface elevations in Wixom Lake at intervals of 15 minutes or less. Your March 18, 2013 report provides water level data at the top of every hour, not every 15 minutes. To verify that you are meeting the reporting requirements of article 406, please submit documentation that you are collecting data every 15 minutes. You may provide data for January 30, 2013, or for another date.

You also say in your report that you plan to install a new gauge on the Tobacco River side of Wixom Lake by October 1, 2013. The gauge must meet the requirements of article 406 and your approved Reservoir Level Gaging Plan. Since you are adding a gauge to the system, you will need to amend you approved gauging plan.

Within 60 days from the date of this letter, please file documentation that you are collecting gauging data every 15 minutes as discussed above. At the same time, please file an amendment to your approved Reservoir Level Gaging Plan showing the location of the proposed new gauge, and a copy of any revised procedures to improve communication with the upstream Beaverton Project.

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Thank you for your cooperation in this matter. If you have any questions concerning this letter, please contact Kurt Powers at (202) 502-8949.

Sincerely,

Steve Hocking  
Chief, Environmental Review Branch,  
Division of Hydropower Administration  
and Compliance

cc: Kyle Kruger  
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