

**FEDERAL ENERGY REGULATORY COMMISSION**  
Washington, D. C. 20426

**OFFICE OF ENERGY PROJECTS**

Project No. 10855-138 - Michigan  
Dead River Hydroelectric Project  
Upper Peninsula Power Company

April 26, 2018

Mr. Virgil E. Schlorke, Director  
Upper Peninsula Power Company  
1002 Harbor Hills Drive  
Marquette, MI 49855

Subject: Year Four Test Report - Article 405

Dear Mr. Schlorke:

Thank you for filing the Year Four Test Report on January 12, 2018, for the Dead River Hydroelectric Project No. 10855.<sup>1</sup> You filed the report to satisfy the reporting requirement under your approved Operations Monitoring Plan.<sup>2</sup>

**License Requirements**

Article 405 of your license required you to include, in your operations plan, a provision for a three-year test period to determine your ability to comply with the storage basin water levels required by Article 402 and minimum flows required by Article 403, to begin after flow monitoring is implemented.

Ordering paragraph (G) of your approved Operations Monitoring Plan requires you to conduct operations testing for three consecutive years and file, with the Commission, annual operations testing reports within 4 months of completing a testing year. Prior to filing the reports with the Commission, you must submit the reports to the Michigan Department of Environmental Quality (Michigan DEQ), Michigan Department of Natural Resources (Michigan DNR), and the U.S. Fish and Wildlife Service (FWS) and allow 30 days for review and comment. The annual operations test reports must include, at a minimum, a spreadsheet including hourly data for all reservoir elevations and discharge flows; a summary of whether or not license requirements were met during

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<sup>1</sup> *Upper Peninsula Power Company*, 101 FERC ¶ 62,013 (2002).

<sup>2</sup> *Upper Peninsula Power Company*, 130 FERC ¶ 62,214 (2010).

the test year; if license requirements were not met during the test year, a discussion as to why and recommendations to alter operations (within the license conditions) to improve compliance with license requirements; any recommendations for increased monitoring, if determined necessary; response to any comments received from the resource agencies on the reports; and documentation of consultation with the Michigan DEQ, Michigan DNR, and FWS. The third/final year operations test report must also summarize the three years of operations testing and make recommendations to modify project operations to achieve compliance, as necessary. If you do not adopt a recommendation made by the resource agencies, you must give your reasons, based on project specific information. Based on the results of the operations testing period and other project information, the Commission reserves the right to require modifications to project facilities and operations to ensure future compliance.

You filed the Year Three Test Report on December 5, 2016, but proposed (with agency concurrence) a fourth year of testing due to the unavailable storage in Silver Lake during the third year. The Commission's January 31, 2017 letter required you to file the Year Four Test Report by December 4, 2017. You requested and were granted an extension of time to file the Year Four Test Report by January 12, 2018.<sup>3</sup>

### **Year Four Test Report**

Your Year Four Test Report (Report) included hourly data for the testing year's operation of the Dead River Hydroelectric Project in graphical as well as tabular format. You also outlined in your Report a summary of the deviation filings for the reported period. Your Report then listed the operational modifications, by development, which were implemented in each of the four years of testing, as well as anomalies in operation during those years. You also provided a summary of findings, per storage basin, based on the four years of operational testing, as describe below. Based on the study results, you are planning on filing an application to amend Article 402 of your license to be consistent with recommendation to modify project operations contained in your Report. These recommendations are also discussed below. However, you conclude, in your Year Four Test Report, that you do not need to increase monitoring and that you believe that the current license monitoring requirements are sufficient to maintain compliance.

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<sup>3</sup> The Commission's November 29, 2017 letter granted an extension of time to file the Year Four Test Report by January 12, 2018.

## **Summary of Findings and Proposed Modifications**

### **Silver Lake Storage Basin (SLSB)**

You found, in part, that if spring runoff cannot be captured in the system, it is very difficult to meet the reservoir elevation requirements at the Dead River Storage Basin (DRSB) during the summer recreation season. You conclude that the current start of month target elevations for the SLSB do not allow for enough storage to maintain the start of month target elevations at the DRSB during the summer recreation season, and therefore the target elevation for the months of May through September needs to be modified. You state that the start of month target elevations for November through March provide a benefit to limit reservoir fluctuations during freezing conditions to minimize impact on hibernating reptiles. You also found that there is a need to maintain minimum flow releases from the SLSB, even if the start of month target elevations or the minimum elevations cannot be maintained. Finally, you explained that the storage of colder water in the SLSB for release throughout the summer is believed to benefit water quality downstream during the early and late summer months.

Based on your findings for the SLSB, you are recommending to modify start of month target elevation for May from 1,479 to 1,485.04 (spillway crest elevation) feet National Geodetic Vertical Datum (NGVD); June from 1,481 to 1,485.04 feet NGVD; July from 1,481.5 to 1,485.04 feet NGVD; August from 1,480 to 1,483.2 feet NGVD; and September from 1,479.5 to 1,481.4 feet NGVD. You plan on maintaining the target elevations for the remaining months as required under Article 402. You will operate the Silver Lake Storage Basin above the monthly minimum reservoir elevations also outlined under Article 402. Furthermore, you state that if you cannot maintain the Silver Lake Storage Basin elevations due to minimum flow requirements less than inflow, you will continue to release minimum flows. Finally, you will continue to maintain the required monthly minimum flows at all times.

### **Dead River Storage Basin (DRSB)**

You state that precipitation in the form of snow or rain is a major driving factor in the operation of the Dead River System (to include the DRSB), and it is important to make proper decisions in the winter prior to spring runoff in order to meet the start of month target elevations during the summer recreation season, as well as to maintain (and not exceed) the target elevation during spring runoff. You found that it is very difficult to meet the reservoir elevation requirements at the DRSB during the summer recreation season, if the spring runoff cannot be captured in the system. The operation of the DRSB, during late February and early March, is already dictated by the need to achieve the start of month target elevations during the summer recreation season and guided by

snowpack information. You also found that spring runoff cannot be stored in the DRSB to its maximum potential for the summer recreation season if the start of month target elevation for May is not increased. You note that some shoreline owners have filed concerns with the Commission about the reservoir elevations exceeding 1,341 feet NGVD, but you explain that start of month target elevations and the minimum elevation requirements for the DRSB for March and April of each year are driven by the need to meet the start of month target elevations for the summer recreation season. Furthermore, you state that lowering the reservoir elevation from 1,344.6 to 1,341.0 feet NGVD can take weeks. You concluded that it is very important to consult with all stakeholders in February or early March every year, so that they can understand the difficulty of predicting how and when the spring runoff will occur and would, thus, reduce criticism by the stakeholders during the summer recreation season.

You are recommending to change the May start of month target elevation from 1,340 to 1,341.0 feet NGVD for the DRSB. You also plan on meeting with the stakeholders to provide information on current elevation of both storage basins as well as snowpack and water equivalency information to try to predict the amount of spring runoff. You will also outline, during that meeting, your plan for reservoir elevation management at the Dead River Storage Basin prior to spring runoff.

### McClure Basin

You found that exceeding the maximum reservoir elevation at the McClure Dam causes water to flow over the spillway. You are not recommending any changes to the McClure Basin operations.

### Agency Consultation

You provided a draft copy of your Report to the Michigan DNR, Michigan DEQ, and the FWS on October 24, 2017 for their comments. You subsequently sent a revised Report on January 4, 2018 to incorporate some of the agency comments and recommendations. Michigan DNR and Michigan DEQ's comment, and your responses are discussed below. The FWS did not respond with any comments on the report.

The Michigan DNR provided comments on the Year Four Test Report in their December 21, 2017 letter, and subsequent email correspondence on January 9 and 10, 2018. The Michigan DNR stated that it is concerned about unconstrained fluctuations in elevation in the SLSB, especially when the Bluegill are expected to spawn in June, and fluctuation in elevation during this critical time would threaten the success of that fishery. The Michigan DNR believes that reservoir levels should be managed consistent with the current license to protect the sport-fishery in the SLSB. In response to this comment, you

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recommended SLSB target elevations of 1,485.04 feet for May, June, and July to support steady SLSB elevations for the critical bluegill spawning period. Michigan DNR also had concerns about your initial proposal to eliminate target elevations for March and April for the DRSB. You subsequently withdrew that recommendation. You addressed the Michigan DNR's comment about predicting spring runoff by stating that the major limitation to anticipating any spring runoff inflow is predicting the weather at the time of the spring snowmelt (at least one month in advance), and the rate at which the snow will melt. You, therefore, recommend an annual consultation meeting with the stakeholders to review, in part, spring runoff predictions.

Michigan DNR also made comments focused on the effect of project operations on fisheries within the impoundments (i.e. review available options to reduce the instances of temperatures exceeding standards during extended periods at some sites). You responded by stating that your operation recommendations serve as a basis for storage of cooler water upstream in the SLSB during the early summer, and release during mid to late summer which, you state, will cool the waters downstream. You also indicated that any specific comments on water quality and temperatures that do not have a connection to the test period should be addressed as part of the water quality monitoring reports.

The Michigan DEQ also provided comments in their January 3, 2018, and January 5, 2018 responses to your draft Report. The Michigan DEQ stated that it, along with staff from the Michigan DNR, visited the three developments (Silver Lake, Hoist, and McClure) on December 11, 2017, and discussed operations with you. Michigan DEQ did not recommend repeating the test period, but had some comments about the proposed changes in operation in the draft plan. You agreed to drop a number of your recommended changes in the draft plan as a result of follow-up discussion with the Michigan DEQ (as well as the Michigan DNR). For the SLSB, the Michigan DEQ stated that the existing start of month target elevations should be maintained or an alternative target should be proposed for May, June, and July. Michigan DEQ also stated that the adjustment of start of month target elevation to the top of the spillway (1,485.2 feet) should be acceptable following the spring runoff (May, June, and July). Furthermore, you should propose a graduate drawdown to lower the lake elevation from 1,485.04 to 1,479.5 feet (October start of month target) NGVD.

Michigan DEQ agreed with your recommendations to strive to meet start of month target elevations for November through March after October 1 of each year, as well as to continue to release minimum flows (if the target elevations cannot be maintained), operate the SLSB above the monthly minimum reservoir elevations, and maintain monthly minimum flows. You included target elevations for all months in your revised report and a graduated transition from 1,485.04 feet to 1,479.5 feet (October start of month target elevation) NGVD to reduce adverse shoreline impacts.

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For the DRSB, Michigan DEQ agreed with your proposal to change the start of month target elevation from 1,340.0 to 1,341.0 feet NGVD. Finally, the Michigan DEQ recommended that you complete and update the hydrologic model for the Dead River to better predict spring runoff and other events. You responded by stating that the model was completed in 2009 and updated in 2016, and that you will update the model as needed.

### **Review**

Based on our review of the Year Four Test Report, you have satisfied the filing requirement under your approved Operations Monitoring Plan. You included the hourly data for all reservoir elevations and discharge flows, as well as a summary of deviations from license requirements during the test year. You also included recommendations to alter operations to improve compliance within the license requirements, as well as proposed changes which would require you to file an amendment application. Finally you included responses to resource agency comments on the report, and concluded that increased monitoring is not necessary.

We remind you that you must continue to operate the project in compliance with the requirements of your license. You must file an application to amend the license for any operational changes you plan on proposing, based on the study report findings, and as discussed above. The filing must include documentation of consultation with the resource agencies along with their recommendation on your proposed modifications. If you do not adopt a recommendation made by the resource agencies, you must give your reasons based on project specific information. We reserve the right to require modifications to project facilities and operations to ensure future compliance.

Thank you for your cooperation, and if you have any questions, please contact Zeena Aljibury at (202) 502-6065 or [zeena.aljibury@ferc.gov](mailto:zeena.aljibury@ferc.gov).

Sincerely,

Kelly Houff  
Chief, Engineering Resources Branch  
Division of Hydropower Administration  
and Compliance

Document Content(s)

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