

**155 FERC ¶ 62,070**  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Marquette Board of Light and Power

Project No. 2589-065

ORDER MODIFYING AND APPROVING OPERATIONS  
MONITORING PLAN PURSUANT TO ARTICLE 406

(Issued April 28, 2016)

1. On April 15, 2015, the Marquette Board of Light and Power (licensee) filed its Operations Monitoring Plan (Plan) pursuant to Article 406 of the license for the Marquette Hydroelectric Project No. 2589.<sup>1</sup> On December 23, 2015, the licensee filed a supplement including a revised version of the Plan, which supersedes the Plan filed on April 15, 2015. The project consists of the Forestville and Tourist Park Developments and is located on the Dead River in the City of Marquette, Marquette County, Michigan.<sup>2</sup>

**License Requirements**

2. Article 406 of the license requires the licensee to file, for Commission approval, a plan to monitor reservoir water surface elevations at each development as required by Article 403, and the minimum flows at each development as required by Article 404. The plan must be prepared after consultation with the Michigan Department of Natural Resources (Michigan DNR), the Michigan Department of Environmental Quality (Michigan DEQ), the U.S. Fish and Wildlife Service (FWS), and the U.S. Geological Survey (USGS).

3. The operations monitoring plan must include provisions to monitor: (1) reservoir water surface elevations; and (2) all minimum flows. The plan must detail the mechanisms and structures that would be used, including any periodic maintenance and calibration necessary for any installed devices or gages, to ensure that the devices work properly, and must specify how often reservoir and minimum flow releases will be recorded and reported to the Michigan DNR and Michigan DEQ.

---

<sup>1</sup> *Marquette Board of Light and Power*, 101 FERC ¶ 62,014 (2002).

<sup>2</sup> The Forestville Development and the Tourist Park Development are also known as the No. 2 Development and the No. 3 Development, respectively.

## Project No. 2589-065

4. The plan must include, at a minimum: (1) final locations of the calibrated staff gages near each project dam that are clearly visible to the public, as required by Article 405; (2) procedures to record the water surface elevations at least hourly for the Forestville and Tourist Park Reservoirs; (3) provisions to file annual reports of all summary data and all gate opening changes, which shall also be provided to the Michigan DNR, and a procedure to submit all data to the Michigan DNR and Michigan DEQ, upon request; (4) procedures for emergency and planned drawdowns, including the timing, duration, and rate of drawdown and measures to minimize the effects on water quality, recreation, aesthetics, and fish and wildlife resources; (5) procedures for releasing flows during planned and emergency shut-downs including limits on planned outages in the spring; (6) a provision for a 3-year test period to determine the licensee's ability to comply with the storage basin water levels required by Article 403 and minimum flows required by Article 404, to begin after flow monitoring is implemented; and (7) a schedule for implementing the monitoring plan within one full construction season after plan approval by the Commission.

5. The licensee must include with the operations monitoring plan documentation of agency consultation, including copies of agency comments and recommendations on the draft plan, and specific descriptions of how the agencies' comments are accommodated by the plan. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

6. The Commission reserves the right to require changes to the plan. Implementation of the plan must not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

**Background**

7. In May 2003, the Tourist Park dam failed as a result of the failure of the upstream Silver Lake Dam, which is part of the upstream Dead River Hydroelectric Project No. 10855. Since the disposition of the Tourist Park Development was uncertain after the failure, in an August 10, 2005 letter, the licensee proposed to prepare and file an interim operations monitoring plan for the operation of the Forestville Development. By letter dated August 31, 2005, the Commission concurred with the licensee's proposal for an interim plan.

8. On January 31, 2006, the licensee filed its Interim Operations Monitoring Plan containing provisions for only the Forestville Development. By order dated April 28, 2006, the Commission issued an Order Modifying and Approving Interim

Project No. 2589-065

Operations Monitoring Plan Pursuant to Article 406.<sup>3</sup> Ordering paragraph (E) of the April 2006 Order required the licensee to develop an operations monitoring plan that addresses both the Forestville and Tourist Park Developments.

### **Proposed Plan**

9. In its filed Operations Monitoring Plan, the licensee describes the equipment and procedures it would use to monitor compliance with the operational requirements of the license at the Forestville and Tourist Park Developments. The licensee developed the Plan in consultation with the Michigan DNR, the Michigan DEQ, the FWS, and the USGS.

#### *Minimum Flows and Reservoir Elevations*

10. According to the Plan, the licensee would quantify the required minimum flow released from the Forestville powerhouse using existing headwater and tailwater monitoring equipment, generating unit records, and data developed during on-site efficiency testing of the powerhouse turbines. Special procedures for quantifying flow releases may apply during the winter months when inflow to the project is between 80 and 100 cubic feet per second. The licensee would develop such procedures in consultation with the Michigan DNR.

11. The licensee would release the required minimum flows to the bypassed reach using a control valve remotely operated by a Supervisory Control and Data Acquisition (SCADA) system that records the valve settings. Flow through the control valve is measured by a flow meter. The licensee would collect data to establish a correlation between the valve setting and metered flow. If a change in this relationship occurs in the future, the licensee would recalibrate the flow meter. The valve operations data would be electronically recorded at intervals not to exceed three hours.

12. When the licensee restored the Tourist Park Development, it replaced the manual controls with automatic controls for the turbine. Since the project license requires the licensee to continuously release the average daily inflow from the Tourist Park Development, to the extent practical, the licensee would set the automatic controls to adjust as necessary to release flow and maintain the reservoir elevation. In addition, in October 2015, the USGS completed the installation of a continuous-recording stream gage station on the Dead River downstream of the Tourist Park dam (USGS Gage No. 04044003).

---

<sup>3</sup> *Marquette Board of Light and Power*, 115 FERC ¶ 62,108 (2006).

Project No. 2589-065

13. The licensee maintains headwater gages located at the intakes of the Forestville and Tourist Park dams. In addition, the licensee uses a SCADA system to record the reservoir headwater elevations at 1-hour intervals. The licensee monitors the headwater data at its control center located at the Shiras Steam Plant. If any fluctuation in headwater elevation occurs that exceeds the preset limits for the required water surface elevations, alarms would sound.

#### *Staff Gages*

14. The Plan specifies that the licensee maintains calibrated staff gages that are mounted on the intake structures at the Forestville and Tourist Park dams. The licensee would check the staff gages annually for signs of damage or changes in readability, and if warranted, would replace the gages. Further, if the licensee finds that the staff gage readings are non-representative of the reservoir elevations, the licensee would identify an alternative location in consultation with the resource agencies.

#### *Reservoir Drawdowns*

15. As noted in the Plan, the licensee may occasionally need to drawdown the Forestville reservoir or the Tourist Park reservoir below the normal operating elevation to allow for maintenance of project structures and equipment. The duration, depth, and timing of such a drawdown would depend on the specific maintenance activity. The licensee would apply to the Michigan DEQ for a drawdown permit at least two months in advance of the planned maintenance activity. The licensee would provide a copy of the application to the Michigan DNR and the Commission's Chicago Regional Office. The licensee's permit application would include: (1) the reason for drawdown; (2) the proposed drawdown date; (3) the proposed drawdown rate; (4) the vertical extent of drawdown; (5) the proposed refill rate; (6) the minimum flow during drawdown and refill; (7) a provision for conducting stranded fish surveys and for returning any fish stranded by drawdown to the river channel; and (8) the proposed measures, if any, to mitigate the effects of drawdown on aquatic resources. The licensee would schedule planned drawdowns for the late summer in order to protect aquatic communities. In addition, an effort would be made to maintain the minimum flow release during the drawdown period, and to limit the drawdown rate to 0.5 foot per day.

16. In the event of an emergency or unplanned drawdown of a reservoir, the licensee would notify the Michigan DNR, the Michigan DEQ, and the Commission's Chicago Regional Office within one normal business day. The notification would include information regarding the extent and duration of the drawdown. Within 30 days after the emergency drawdown, the licensee would submit a report to the Michigan DNR, the Michigan DEQ, and the Commission's Chicago Regional Office describing the

Project No. 2589-065

emergency, action taken, remedial measures proposed or completed, and any measures proposed to prevent recurrence. During any emergency or unplanned drawdown, the licensee would make an effort to maintain the minimum flow release whenever practicable.

*Reporting Procedures*

17. According to the Plan, the licensee would record the following monitoring data in electronic spreadsheet format for the Forestville Development: (1) hourly reservoir headwater elevation; (2) hourly tailwater elevation; (3) hourly net head; (4) hourly generating unit characteristics; and (5) changes in valve settings for the release of bypassed reach minimum flow. For the Tourist Park Development, the licensee would record in the same format the following monitoring data: (1) hourly reservoir headwater elevation; and (2) Dead River flows downstream of the confluence with the tailrace channel using the USGS Gage No. 04044003.

18. The licensee proposes to submit to the Michigan DNR and the Commission an annual report of the previous year's monitoring data by March 31 of each year. The licensee would provide a copy of the annual report to the Michigan DEQ and the FWS within 15 days of receipt of a written request for the report. Throughout the year, the license would provide data to the Michigan DNR, the Michigan DEQ, and the FWS within 15 days of receipt of a written request.

19. In the event of a deviation from the reservoir elevation requirements under Article 403 and the minimum flow requirements under Article 404, the licensee would file a report with the Commission within 30 days of the date the data becomes available regarding the incident. The report would, to the extent possible, identify the cause, severity, and duration of the incident, and any observed or reported adverse environmental impacts resulting from the incident. The report would include, at a minimum: (1) any operational data necessary to determine compliance with the relevant article; (2) a description of any corrective measures implemented at the time of the occurrence and the measures implemented or proposed to ensure that similar incidents do not recur; and (3) comments or correspondence received from the resource agencies regarding the incident. The licensee notes that based on the report and the Commission's evaluation of the incident, the Commission reserves the right to require modifications to project facilities and operations to ensure future compliance.

*Three-Year Test Period*

20. To determine its ability to comply with the reservoir elevation and minimum flow requirements at the Forestville Development, the licensee conducted a 3-year test period

Project No. 2589-065

from 2006 to 2009.<sup>4</sup> The licensee filed its final report for the Forestville Development's 3-year test period with the Commission on February 19, 2010.

21. In its filed Plan, the licensee proposes to initiate a 3-year test period for the Tourist Park Development and to file a report documenting compliance or non-compliance with the license requirements within 90 days after completing the test period. The report would explain all of the non-compliance events and describe what actions the licensee is taking to address those issues. In addition to filing the report with the Commission, the licensee would also provide a copy of the report to the Michigan DNR and the Michigan DEQ.

#### *Implementation of Monitoring Plan*

22. The licensee states that it implemented the Interim Operations Monitoring Plan, which contains provisions for only the Forestville Development, after receiving Commission approval in April 2006. The licensee would implement the filed Operations Monitoring Plan, which applies to both the Forestville and Tourist Park Developments, within 90 days of Commission approval of the Plan.

#### **Pre-Filing Consultation**

23. The licensee distributed a draft copy of the Operations Monitoring Plan on March 2, 2015, to the Michigan DNR, the Michigan DEQ, and the FWS. In an email message dated March 9, 2015, the Michigan DEQ provided an editorial comment on the draft plan. By email message dated April 1, 2015, the FWS stated that it had no comments on the draft plan. In an April 6, 2015 letter, the Michigan DNR stated that the draft plan was satisfactory and that the installation of the downstream gage (USGS Gage No. 04044003) would be important to the monitoring of re-regulation flow out of the project.

24. The licensee also consulted with the USGS during the development of the Plan, and specifically, during the establishment of and installation of a gage to monitor Dead River flow downstream of the Tourist Park dam.<sup>5</sup> Letters dated March 25, 2015, and

---

<sup>4</sup> The 3-year test period for the Forestville Development was part of the licensee's Interim Operations Monitoring Plan approved by the Commission's April 2006 Order.

<sup>5</sup> The Michigan DEQ's Water Quality Certification condition 8.5 requires the licensee to monitor flow in the Dead River downstream of the confluence with the Tourist Park tailrace channel.

Project No. 2589-065

November 18, 2015, from the USGS to the licensee document consultation regarding the development of a monitoring plan.

### **Review**

25. The filed Plan includes provisions to monitor reservoir water surface elevations and minimum flows, as well as procedures to provide reports to the resource agencies and the Commission. As discussed above, if the licensee applies to the Michigan DEQ for a reservoir drawdown permit for planned maintenance activity, it proposes to provide a copy of its drawdown permit application to the Michigan DNR and the Commission's Chicago Regional Office. The licensee also proposes to: (1) notify the Michigan DNR, the Michigan DEQ, and the Commission's Chicago Regional Office within one normal business day in the event of an emergency or unplanned drawdown of a reservoir; and (2) submit a report to the Michigan DNR, the Michigan DEQ, and the Commission's Chicago Regional Office within 30 days after the emergency drawdown. In order for the Commission to be officially informed of the operations activities, the licensee should also file these documents with the Secretary of the Commission, as required in ordering paragraph (B).

26. The licensee proposes to perform a 3-year test period for the Tourist Park Development and to file a report documenting compliance or non-compliance with the license requirements within 90 days after completing the test period. Although the licensee proposes to submit the report to the Commission, the Michigan DNR, and the Michigan DEQ, it does not include the FWS. The licensee is also required to consult with the FWS to prepare the Operations Monitoring Plan under Article 406, and during any future mutually agreed upon temporary modifications of either reservoir elevations under Article 403 or minimum flow releases under Article 404. Therefore, the licensee should also provide a copy of the report for the 3-year test period to the FWS. In addition, rather than having an open-ended filing date for the for the Tourist Park Development report, the licensee should submit the 3-year test period report to the resource agencies and the Commission by December 31, 2019. Ordering paragraph (C) requires the licensee to file the report by this date and to include the FWS in the report distribution.

27. Pursuant to Article 403, the licensee is required to maintain the Tourist Park reservoir water surface level at elevation 637.2 feet National Geodetic Vertical Datum (NGVD)  $\pm$  0.5 foot. In its filed Plan, the licensee states that, due to concerns from property owners around the reservoir, it is considering maintaining the Tourist Park reservoir water surface level at elevation 638.0 feet NGVD  $\pm$  0.5 foot. We remind the licensee that a permanent modification to the reservoir elevation requirements under Article 403 would require an amendment of the article. Such an amendment request by the licensee would require consultation with the resource agencies. In addition, since the

Project No. 2589-065

Michigan DEQ's Water Quality Certification condition 8.2 requires the licensee to maintain the Tourist Park reservoir water surface elevation at 637.2 feet NGVD  $\pm$  0.5 foot, approval of a proposed modification from the agency would be necessary.

28. The licensee's filed Operations Monitoring Plan meets the requirements of Article 406. The plan should, therefore, be approved with the above modifications for the licensee to file certain reporting documents with the Commission and to file the 3-year test period report for the Tourist Park Development by an established date, with the FWS included in the report distribution.

29. Although the licensee states in the filed Plan that it would implement the Plan within 90 days of Commission approval, the equipment to perform the monitoring is already installed and operating, and the licensee does not propose any further construction. Therefore, as required by ordering paragraph (A), the licensee should implement the Plan upon issuance of this order.

The Director orders:

(A) The Operations Monitoring Plan filed by the Marquette Board of Light and Power on December 23, 2015, pursuant to Article 406 of the Marquette Hydroelectric Project No. 2589, as modified by paragraphs (B) and (C), is approved. The licensee must implement the Operations Monitoring Plan upon issuance of this order. The previously approved Interim Operations Monitoring Plan for the Forestville Development is superseded by the Operations Monitoring Plan.

(B) As specified under the Operations Monitoring Plan filed on December 23, 2015, if the licensee applies to the Michigan Department of Environmental Quality (Michigan DEQ) for a reservoir drawdown permit for planned maintenance activity, it must provide a copy of its drawdown permit application to the Michigan Department of Natural Resources (Michigan DNR) and the Commission's Chicago Regional Office. In addition, in the event of an emergency or unplanned drawdown of a reservoir, the licensee must: (1) notify the Michigan DNR, the Michigan DEQ, and the Commission's Chicago Regional Office within one normal business day; and (2) submit a report to the Michigan DNR, the Michigan DEQ, and the Commission's Chicago Regional Office within 30 days after the emergency drawdown. The licensee must also file copies of any drawdown permit applications, notifications, and reports with the Secretary of the Commission.

(C) As specified under the Operations Monitoring Plan filed on December 23, 2015, upon completion of the 3-year test period for the licensee to determine its ability to comply with the reservoir elevation and minimum flow requirements at the Tourist Park Development, the licensee must file a report documenting compliance or non-compliance



Project No. 2589-065

with the license requirements. The report must provide an explanation of all non-compliance events and describe what actions the licensee is taking to address those issues.

Prior to filing the 3-year test period report with the Commission, the licensee must provide a copy of the draft report to the Michigan Department of Natural Resources, the Michigan Department of Environmental Quality, and the U.S. Fish and Wildlife Service for review and comment. The licensee should allow a minimum of 30 days for the agencies to comment and make recommendations before filing the report with the Commission. The report must be filed with the Commission by December 31, 2019, and should include documentation of consultation with the agencies, including copies of agency comments and recommendations on the report, and specific descriptions of how the agencies' comments and recommendations are accommodated by the report.

(D) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the Federal Power Act, 16 U.S.C. § 8251 (2012), and the Commission's regulations at 18 C.F.R. § 385.713 (2015). The filing of a request for rehearing does not operate as a stay of the effective date of this order, or of any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

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

Document Content(s)

P-2589-065.DOC.....1-9