FEDERAL ENERGY REGULATORY COMMISSION
Washington, D. C. 20426

OFFICE OF ENERGY PROJECTS

Project No. 2506-242- Michigan
Escanaba River Hydroelectric Project
Upper Peninsula Power Company

December 9, 2015

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

Subject: Deviation from Water Quality Standard - Article 415

Dear Mr. Schlorke:

We received your letter filed August 7, 2015, regarding a deviation from the water quality standards downstream of Boney Falls (Dam No. 4) development of the Escanaba River Hydroelectric Project No. 2506. The project is located on the Escanaba River, in Delta and Marquette counties, Michigan. You submitted your letter pursuant to the Federal Energy Regulatory Commission's (Commission) Order Approving Modifications to Dissolved Oxygen Monitoring Plan under Article 403 and 415 (2005 order).[1] For the reasons discussed below, we have determined that the deviation is a violation of Article 415 of the license.

License Requirements

The 2005 order requires, in part, that you monitor dissolved oxygen (DO) concentrations at a monitoring station located 600 feet downstream of the Boney Falls development to ensure that the standard of 7.0 milligrams per liter (mg/l) is met when river discharges are at or above the 95 percent exceedance flow and when the facility is not augmenting. In accordance with the 2005 order, you monitor DO at one-hour intervals during the months of July and August. The reporting requirements for any deviations from the water quality standards are described in ordering paragraphs (C) and (D) of the January 22, 1997 Order Modifying and Approving Water Quality Monitoring Plan.[2]

[1] 110 FERC ¶ 62,237 (issued March 9, 2005).

[2] 78 FERC ¶ 62,036.

Deviation Incident

You report that during the July 20 through July 27, 2015, monitoring period, DO readings downstream of Dam No. 4 were below 7.0 mg/l daily, except for the morning of July 27. The lowest DO concentration observed was 6.3 mg/l, which occurred on July 24, 2015. You concluded that the low DO levels were likely due to warm water temperatures during July 2015 when the daily average water temperatures were above 71°F, with daily maximum temperatures reaching 75°F.

In order to mitigate for the warm water temperatures in the Escanaba River downstream of the powerhouse, you initiated flow augmentation on July 20, 21, 22, and 25, 2015. During the flow augmentation procedure, you increased flow from the powerhouse to 150 percent of the base flow between 11:00 a.m. to 6:00 p.m., then reduced flow to 75 percent of the base flow to allow the reservoir to refill. When low DO concentrations are observed and the facility is not augmenting flow or in isolation mode, aeration flow is released through a gate. Such DO corrective actions occurred daily between July 23 and July 27, except for during a seven-hour period on July 24, when flow augmentation or DO corrective action did not occur.

You state that on July 23, you initiated flow augmentation to mitigate for warm water temperatures, and when you did this, the alarm for low DO concentrations was suppressed. During the augmentation event, the water elevation in the reservoir actually increased (due to increasing river flow during the augmentation period). As a result of the increasing river flow, the reservoir was refilled to pre-augmentation levels shortly after midnight on July 24. Upon completion of the flow augmentation period, DO levels were below 7.0 mg/L, but project operators failed to re-activate the DO alarm and therefore did not realize DO concentration criteria was not being met. Once the operations staff shift change occurred at 7:00 a.m. on July 24, the low DO concentrations were recognized and staff initiated corrective actions. For a 7-hour period on July 24, DO concentrations varied between 6.8 to 6.9 mg/L.

Following this incident, you reviewed the procedure for flow augmentation and made adjustments which would require operations staff to review the DO alarm and document its status on the augmentation record. This would ensure that if the alarm was suppressed during the augmentation event, it would be reactivated at the completion of augmentation.

Your filing includes a DO concentration and temperature data record for the month of July 2015, and a copy of your July 28, 2015 notification to the Michigan Department of Natural Resources and the Michigan Department of Environmental Quality about the deviation. The agencies did not file comments.

Conclusion

After reviewing the information provided, we have concluded that the low DO concentration levels that occurred during the period of July 20 through July 23, 2015 at the Dam No. 4 of the Escanaba River Hydroelectric Project were likely caused by warm temperatures, which you addressed by performing flow augmentation. However, the low DO levels that occurred on July 24, 2015 were due to operator error and constitute a violation of Article 415 of your license. Operations staff failed to reactivate the DO alarm and therefore was unaware of the deviation that was occurring. This resulted in no corrective action being implemented to improve DO concentrations in the river. Your proposed modification to the procedures to ensure the DO alarm status is inspected should help to ensure future compliance with the license requirement. Taking into consideration the corrective measures implemented, the extent of the deviation and short duration of the event, and there were no adverse impacts to the environment, no additional Commission action will be recommended at this time. However, this violation will be part of the compliance history of your project and considered regarding any similar future deviations.

Thank you for your cooperation in this matter. If you have any questions concerning this letter, please contact Holly Frank at (202) 502-6833, or by e-mail at holly.frank@ferc.gov.

Sincerely,

Thomas J. LoVullo
Chief, Aquatic Resources Branch
Division of Hydropower Administration
and Compliance

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