FEDERAL ENERGY REGULATORY COMMISSION
Washington, D. C. 20426

OFFICE OF ENERGY PROJECTS

Project No. 10855-307 and -310
Michigan
Dead River Project
Upper Peninsula Power Company

August 27, 2019

VIA FERC Service

Mr. Virgil Schlorke
Director, Generation and Environmental Services
Upper Peninsula Power Company
800 Greenwood Street
Ishpeming, MI 49849

Subject: Water Surface Elevation Deviations and Complaints – Article 402

Dear Mr. Schlorke:

We received your letter filed on April 17, 2019, notifying the Commission of a planned deviation from the required water surface elevation requirements, at the Dead River Development storage basin,[1] under license Article 402 for the Dead River Hydroelectric Project No. 10855.[2] We also received your letter filed on May 3, 2019, notifying the Commission of an ongoing deviation from the water surface elevation requirements under license Article 402 at the McClure Development storage basin. You filed a follow-up letter on June 10, 2019, after the McClure Storage Basin (MSB) returned to normal operating levels. On August 6, 2019, you filed correspondence

[1] The Dead River Project consists of three developments. From upstream to downstream, they are: the Silver Lake Development; the Dead River Development; and the McClure Development. The Dead River Development is also called the Hoist Development; the storage basin at this development is known as both the Dead River Storage Basin and Hoist Reservoir.

[2] *Upper Peninsula Power Company*, 101 FERC ¶ 62,013 (2002).

responding to our July 9, 2019 letter requesting operation information for the Dead River Project. We requested the information in response to two complaints regarding the operation of the project during the spring snow melt and runoff this year.[3] For the reasons discussed below, we will not consider the high water levels reported by the complainants or your two self-reported deviations to be violations of Article 402 of the license.

License Requirements

Article 402 of the license requires you to operate the project to maintain minimum storage basin water surface elevations at each of the three developments, for the protection and enhancement of water quality, recreation, aesthetics, and fishery resources in the Dead River. You must maintain the MSB between elevation 1,194.8 and 1,196.4 feet National Geodetic Vertical Datum (NGVD), and limit the fluctuation in the storage basin water level to less than 1.0 foot on any day. As shown in the table below, Article 402 requires you to maintain the Dead River Storage Basin (DRSB) at all times above the minimum elevation and to strive to operate the project facilities to achieve the start of month target elevations, in order to minimize erosion due to high water levels and enhance recreational opportunities and aesthetics. If natural conditions cause the DRSB to exceed an elevation of 1,341 feet NGVD, you must take all reasonable steps to lower the impoundment to the target elevation.[4] In addition, the rate of lowering the DRSB must not exceed 0.5 foot per day.

Table 1. Dead River Storage Basin – Start of Month Target and Minimum Water Surface Elevations

Month	Start of Month Target Elevation (feet NGVD)	Minimum Elevation (feet NGVD)
April	1,337.5	1,337

[3] The complainants are concerned about high water levels at the Dead River Development storage basin.

[4] Ordering paragraph (D) of the March 11, 2010 Order Modifying and Approving Article 405 Operations Monitoring Plan specifies that the licensee must take all reasonable steps to lower the impoundment to the target elevation using increased turbine discharge and/or discharge through the low level outlet. Implementation of one or both measures should be based on the circumstances of the extreme high water event. 130 FERC ¶ 62,214 (2010).

May	1,340[a]	1,339
June	1,341	1,339
July	1,341	1,339.5
August	1,341	1,339.5
September	1,341	1,339.5
October	1,341	1,339.5
November	1,341	1,339.5
December	1,339	1,338.5
January	1,339	1,337.5
February	1,337.5	1,337
March	1,337.5	1,337

[a] The January 29, 2019 Order Approving Request for Temporary Variance from License Requirements of Article 402 granted the licensee's request to modify some of the start of month target elevations at the Silver Lake and Dead River Storage Basins for one year, starting in February 2019. The approved temporary variance changes the start of month target elevation from 1,340 feet to 1,341 feet NGVD for the month of May at the DRSB. The temporary variance makes no other changes to the monthly target elevations at the DRSB. 166 FERC ¶ 62,044 (2019).

Article 402 also stipulates that storage basin water surface elevations may be temporarily modified, if required by operating emergencies beyond your control, including but not limited to floods, ice conditions, drought, and electrical emergencies, or for short periods upon mutual agreement with the Michigan Department of Natural Resources (Michigan DNR), the Michigan Department of Environmental Quality (Michigan DEQ), and the U.S. Fish and Wildlife Service (FWS). During the aforementioned adverse conditions, you must, within one business day after identifying the noncompliance condition relating to water surface elevations, consult with the Marquette District Supervisor of the Michigan DEQ, the Michigan DNR, and the FWS regarding the emergency actions taken or planned. Consultations during the adverse conditions shall continue, following a mutually agreed upon schedule with the Michigan DEQ, the Michigan DNR, and the FWS. Upon cessation of the adverse conditions, you must resume the normal project operating water levels. You are required to notify the Commission as soon as possible, but no later than 10 days after each such emergency incident, and you must provide the reason for the modified reservoir elevations and actions taken to return the project to normal operating levels.

On September 1, 2011, the Commission issued an Order Amending License for the Dead River Project.[5] Ordering paragraph (B) requires you to file a report with the Commission within 30 days of the data becoming available for all deviations that last longer than one hour or result in environmental impacts. The report should include, to the extent possible, the cause, severity, and duration of the incident, and any observed or reported adverse environmental impacts resulting from the incident. The report must also include: (1) operational data necessary to determine compliance with the operating range requirement; (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) any comments or correspondence received from the resource agencies or other interested parties regarding the incident.

Filings

April 17, 2019 Filing

According to your April 17, 2019 filing, instead of following the water surface elevation requirements at the DRSB for April, as shown in the table above, you planned a deviation to lower the start of month target elevation and the minimum elevation to 1,334 feet NGVD and 1,333.5 feet NGVD, respectively. The decision to lower the April water surface elevation requirements at the DRSB was based upon the large amount of snowfall on the ground surrounding the project area, the associated snow water equivalent, the forecasted weather conditions, and your analysis of these conditions.

You made the decision in consultation with the resource agencies in order to help reduce the headwater elevation during the predicted high spring snow melt. The Michigan DNR, the Michigan DEQ, and the FWS concurred with your proposal for the planned deviation. You also notified two other interested entities, the Dead River Campers, Inc. (DRCI) and the Keweenaw Bay Indian Community (KBIC), of your proposal to deviate from the required April water surface elevations. The DRCI provided written support of the proposed deviation. The KBIC did not provide any comments. Your filing also states that on April 8, 2019, the headwater elevation rose above 1,337 feet NGVD, which is the normally required minimum elevation for April, thereby ending the planned deviation.

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[5] *Upper Peninsula Power Company*, 136 FERC ¶ 62,186 (2011).

May 3 and June 10, 2019 Filings

According to your May 3 and June 10, 2019 filings, deviations from the water surface elevation requirements at the MSB occurred due to inflow from the spring snow melt and significant rainfall exceeding the maximum outflow possible at the development. On April 25, 2019, the reservoir elevation exceeded the maximum elevation limit of 1,196.4 feet NGVD. The reservoir reached a maximum elevation of 1,198.41 feet NGVD on May 20, 2019, and returned to normal operating levels on June 5, 2019.

During the deviation period, operators performed routine inspections of the reservoir area and found no adverse environmental impacts as a result of the incident. Additionally, you did not receive any comments from the resource agencies.

August 6, 2019 Filing

Your August 6, 2019 filing provides additional information that we requested in our July 9, 2019 letter, which we issued after receiving a couple complaints about high water levels at the DRSB. Included in the filing are project operations data, National Weather Service (NWS) information, and a redacted copy of the Water Power Easement Agreement (Agreement).[6] Also included in the filing are copies of correspondence between you and the president of the DRCI board of directors and between you and two individual members of the DRCI,[7] regarding the water levels at the DRSB.

The filed project operations data includes the Silver Lake Development, the Dead River Development, and the McClure Development, which you operate in conjunction with one another to manage the project and meet the license requirements. Some factors that you consider when making operational decisions include: the minimum water surface elevation requirements; the minimum flow requirements; the reservoir evaporation rates; the drawdown rates during the winter that are acceptable to the resource agencies and not harmful to aquatic species; and the amount of and timing of

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[6] The Agreement between the Upper Peninsula Power Company, as Grantee, and the property owners having title in fee to the property within the project boundary at the DRSB and MSB, as Grantors, was executed on October 7, 1999.

[7] The filing notes that the licensee's primary communication with the DRCI is done through the DCRI board of directors, which in turn provides updates and information to its members.

precipitation. To help you achieve and maintain the required reservoir elevations, you also use an operations model that was developed in consultation with the Michigan DEQ and the Michigan DNR.

The NWS information that you filed contains the monthly reports of river and flood conditions for the Hydrologic Service Area in which the project is located.[8] Each of these reports includes discussions on precipitation, snowpack, drought, and flooding, as appropriate, for a specific month. The reports also include maps depicting the precipitation totals, the snow water equivalent, and the monthly river levels in terms of percentile class, i.e., much below normal, below normal, normal, above normal, and much above normal.

On May 20, 2019, the Marquette, Michigan NWS Office in Negaunee Township (NWS Marquette) posted a statement on Facebook regarding the exceptionally wet conditions in the area. The post stated that the area was in the midst of a prolonged record wet period. A strong storm broke daily record precipitation records over the prior three days with a total rainfall of 4.23 inches at the NWS Marquette location. With that storm, a total of 7.26 inches of rain had fallen so far in the month of May; the NWS Marquette noted that the May record was 7.91 inches, which was set in 1973.[9] Spring 2019, which includes March through May 2019, currently ranked as the fifth wettest spring on record with 13.40 inches of rainfall. The NWS Marquette stated that the extremely wet spring followed a very wet winter in 2018-2019, a very wet fall in 2018, and a very wet summer in 2018. In fact, the area was experiencing the wettest 12-month period on record, having received 54.38 inches of precipitation at the NWS Marquette location since June 1, 2018. The previous record for wettest 12-month period had occurred 50 years earlier (May 1968 through April 1969) with 53.07 inches. The average precipitation for a 12-month period at the NWS Marquette location is 35.68 inches.

According to the filed Agreement, the "Grantee agrees to exercise its best efforts to maintain the water level on the Hoist Project at no greater than 1,346 feet above sea level and on the McClure Project at no greater than 1197 feet above sea level unless otherwise ordered by FERC. In consideration of such efforts, all owners and occupants of the Easement Premises shall be deemed to have irrevocably waived any claim that they may have against Grantee for any damages resulting from the water level exceeding the

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[8] The project is located in the Hydrologic Service Area served by the Marquette, Michigan NWS Office in Negaunee Township.

[9] Weather records at the NWS Marquette location date back to 1961.

levels agreed upon above, unless resulting from the intentional or negligent acts or omissions of Grantee, its employees, agents, contractors, successors and/or assigns." We note that, pursuant to the license for the Dead River Project, the project boundary around the DRSB follows the contour elevation of 1,348 feet NGVD.[10]

In your correspondence to the DRCI and its members, which is dated between April 26 and June 25, 2019, you provide information regarding project operations, hydrologic conditions, and frequently asked questions about the project operations. The August 6, 2019 filing states that you also meet at least once a year with the DRCI to discuss operations and any upcoming projects that may affect the DRSB. In addition, you hold an annual late-winter meeting with the resource agencies and the DRCI in which spring runoff conditions and project operations are discussed.

Review

Our review of your planned deviation to lower the April water surface elevation requirements at the DRSB finds that you made an operating decision in consultation with the Michigan DNR, the Michigan DEQ, and the FWS in an effort to help reduce the headwater elevation during the predicted high spring snow melt. We conclude that you operated the project in accordance with Article 402. Therefore, the reported deviation at the DRSB does not constitute a violation of Article 402.

Based on our review of the information provided, we find that the reported deviation from the water surface elevation requirements that occurred at the MSB from April 25 to June 5, 2019, was the result of an extended period of high inflow from snow melt and significant rainfall that exceeded the outflow capacity of the development. You monitored the reservoir area regularly during the deviation and did not observe or receive any reports of any adverse environmental impacts. Therefore, we conclude that the reported deviation at the MSB does not constitute a violation of Article 402 of your license.

Our review of the information provided in your August 6, 2019 filing finds that the high water surface elevations at the DRSB were caused by an extended period of high

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[10] The February 3, 2003 Order on Rehearing and Modifying License noted that the licensee owns only a small portion of lands within the project boundary, the majority being owned by Longyear Realty Company and other private entities, from which the licensee holds extensive leases and flowage rights for project purposes. 102 FERC ¶ 61,114 (2003).

inflow from the spring snow melt and significant rainfall.[11] Although you opened the low level outlet at the Dead River Development on April 26, 2019, a buildup of debris and the potential for plugging led you to close the outlet on April 30, 2019. To resolve the debris and plugging issue, you developed and installed a log boom system. On May 23, 2019, you placed the low level outlet back into service. You also discharged water through the powerhouse via the two functioning turbine generating units during the period of high water surface elevations. Additionally, when the water level in the impoundment reaches the spillway crest at elevation 1,344.60 feet NGVD, outflow over the weir occurs.[12] We conclude that you operated the project in accordance with the requirements of your license. Therefore, the reported high water levels at the DRSB do not constitute a violation of Article 402.

Thank you for your cooperation. If you have any questions concerning this letter, please contact Linda Stewart at (202) 502-8184 or linda.stewart@ferc.gov.

Sincerely,

Kelly Houff

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

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[11] The water surface elevation at the DRSB rose above 1,341 feet NGVD on April 20, 2019. The DRSB reached a maximum elevation of 1,346.59 feet NGVD on May 20, 2019, and returned to 1,341.1 feet NGVD on July 4, 2019.

[12] The spillway at the Dead River Development is a fixed crest weir; therefore, when inflow exceeds the hydraulic capacity of the turbine generating units in the powerhouse, the elevation of the DRSB increases until water reaches the spillway crest and begins spilling.