130 FERC ¶ 62,214
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Upper Peninsula Power Company Project No. 10855-138

ORDER MODIFYING AND APPROVING ARTICLE 405 OPERATIONS MONITORING PLAN

(Issued March 11, 2010)

1. On October 6, 2008, Upper Peninsula Power Company (UPPCO or licensee) filed its Operations Monitoring Plan for the Dead River Hydroelectric Project (FERC Project No. 10855). The plan was supplemented on July 9, 2009. The licensee filed its plan pursuant to Article 405 of the project license[1] and the 401 water quality certificate issued for the project.[2] The Dead River Hydroelectric Project is located on the Dead River in Marquette County, Michigan and consists of three separate developments: the Silver Lake, Dead River (Hoist), and McClure Developments.

LICENSE REQUIREMENTS

2. Within one year of license issuance, the licensee is required to file with the Federal Energy Regulatory Commission (Commission), for approval, a plan to monitor storage basin water surface elevations and drawdown rates at each development as required by Article 402, and the flows at each development as required by Article 403. The plan must be prepared after consultation with the Michigan Department of Natural Resources (MDNR), the Michigan Department of Environmental Quality (MDEQ), the U.S. Fish and Wildlife Service (FWS), and the U.S. Geological Survey (USGS).

3. The plan must include provisions to monitor storage basin water surface elevations and all flows.[3] The plan must detail the mechanisms and structures that would be used,

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[1] *See* Order Issuing Original License, 101 FERC ¶ 62,013 (issued October 4, 2002).

[2] The 401 water quality certificate conditions were incorporated into the license by ordering paragraph (D) and attached to the license as Appendix A.

[3] *See* Order on Rehearing and Modifying License, 102 FERC ¶ 61,114 (issued February 3, 2003) for clarifications to Article 405 requirements.

including any periodic maintenance and calibration necessary for any installed devices or gages, to ensure that the devices work properly, and should specify how often storage basin and minimum flow releases will be recorded and reported to the MDNR and MDEQ.

4. At a minimum, the plan must include:

(1) final locations of the calibrated staff gages near each project dam that are clearly visible to the public, as required by Article 404;

(2) procedures to record the water surface elevations at least weekly for the Silver Lake Storage basin (monthly when snow or ice prevents access to the gage), daily for the Dead River Storage basin, and hourly for the McClure Storage Basin;

(3) provisions to file annual reports of all summary data and all gate opening changes, which shall also be provided to the MDNR, and a procedure to submit all data to the MDNR and MDEQ 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 plan for the installation of the structure at the McClure dam that would release minimum flows into the bypassed reach using a deepwater draw; the plan should include a design and implementation schedule and measures that will be taken to ensure that the minimum flow release meets the state water quality standards for a coldwater stream;

(7) a plan to provide periodic flushing flows to the bypassed reach downstream of the McClure dam, specifying the amount and duration of flows, which shall be designed to prevent injurious sedimentation of the channel, and to provide for the natural movement of woody debris as required by Article 409.

(8) a provision for a three year test period to determine the licensee's 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; and

(9) a schedule for implementing the monitoring plan within on 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. The licensee must allow a minimum of 30 days for the agencies to comment and to make recommendations, before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information. The Commission reserves the right to require changes to the plan.

BACKGROUND

6. On May 14, 2003, less than eight months after license issuance, a breach of the Silver Lake Storage Basin occurred, which greatly affected operational conditions at the project. Due to the uncertainty regarding the future of Silver Lake, from 2003 through 2007 UPPCO annually filed requests for extensions of time in which to file its Operations Monitoring Plan. The Commission granted each of the licensee's requests in orders dated October 23, 2003, September 20, 2004, August 17, 2005, November 3, 2006, and August 20, 2007. Each order extended the deadline one year to a final due date of October 4, 2008.

LICENSEE'S PLAN

Staff Gages

7. Article 404 of the project license requires UPPCO to install calibrated staff gages at each of the three developments within one year of license issuance. In its plan, UPPCO states that staff gages were installed at each development at locations determined in consultation with the resource agencies. The gages were calibrated upon installation and will be verified and corrected, if needed, once every five years by a registered surveyor or USGS representative. The staff gages will be scrubbed annually and inspected to ensure that they are clearly visible and readable.

Reservoir Surface Elevation Recording

8. Water surface elevations for the each of the developments will be recorded electronically and transmitted to the licensee's Energy Supply and Control center staffed 24 hours a day. The plan states that reservoir elevations will be recorded: once per week at Silver Lake (monthly when snow and ice prevents access to the gage); once per day at Hoist; and once per hour at McClure. In addition, the licensee states that reservoir surface elevation data for all three reservoirs will be available at the following website: www.wisconsinpublicservice.com/news/hydro/hydrodata.aspx.

9. In its letter filed July 9, 2009, UPPCO states that the Silver Lake Reservoir elevation is monitored on a real-time basis and updated reservoir elevations are received electronically at least once every 30 minutes.

10. The licensee's plan includes a provision that the electronic readings will be compared to staff gage readings made by operators during routine project visits. In its July, 9, 2009 letter, the licensee states that operating staff make routine visits to the project at least monthly for Silver Lake, and once daily Monday through Friday for Hoist and McClure. If there is a difference of greater than 0.2 feet between the electronic elevation reading and the corresponding manual reading, the electronic recording device will be recalibrated.

11. If the signal is lost from any of the gages, the licensee states that a determination will be made as to the frequency of manual recording until the electronic recording is reestablished. At a minimum, the licensee states that manual reservoir elevations readings will be performed daily for Hoist and McClure and weekly for Silver Lake. The licensee states that the frequency could change based on operational and dam safety requirements.

Flow Monitoring

12. UPPCO states that flow releases from the low level outlet at Silver Lake will be calculated from the gate discharge curve vs. head water elevations. The minimum flow release requirement at the Hoist Development is typically made through the turbines during generation. UPPCO calculates flow releases from the Hoist Powerhouse based on measured generator electrical output. UPPCO states that the correlation of the flow to electrical generation was developed through flow testing at various flow rates using ultrasonic techniques on the penstock. UPPCO states that the correlations will be calibrated on a five year cycle with the next calibration scheduled for 2011. A rating curve for the low level outlet at Hoist was derived using ultrasonic testing. The minimum flow release requirement from the McClure Powerhouse is measured by the existing USGS gage (No. 04043800) located downstream of the powerhouse. The siphon that supplies the McClure bypass minimum flow was calibrated using ultrasonic techniques during installation.

13. The licensee includes in Appendix C of its plan, rating curves for the project gates and spillways as well as inflow-outflow calculators for Silver and Hoist Lakes. The licensee proposes to keep a record of all changes in gate and valve openings. Verification of the minimum flow requirements using ultrasonic or equivalent techniques will be conducted on an annual basis, no later than July 1 of each year. The licensee states that the operator will make visual observations during routine dam checks to verify that the discharges from the bypass do not vary from one day to the next and that there is no restriction or obstruction of flow through the bypass.

Project Operation

14. UPPCO states that they will strive to achieve the start of month target reservoir elevations for Silver Lake by regulating flow releases within the license required minimums and maximum for the given time of year. UPPCO also states that, on the second day of the month, the reservoir can be allowed to fall below or rise above the start of month target elevation, providing that the minimum flow requirements are met. In addition, UPPCO states that they will maintain Silver Lake Reservoir elevations above the monthly minimums as prescribed by Article 402 of the project license when adequate inflow is present. If reservoir inflow is insufficient to maintain the minimum reservoir elevation, UPPCO proposes to implement the dry year consultation process discussed below.

15. For Hoist Reservoir (also referred to as the Dead River Storage Basin), UPPCO states that they will strive to achieve the start of month target reservoir elevations by regulating flow releases while maintaining the minimum flow required by the license. UPPCO also states that, on the second day of the month, the reservoir can be allowed to fall below or rise above the start of month target elevation, providing that the minimum flow requirements are met and the reservoir elevation remains above the minimum (varies by month) and below the maximum (1341 feet National Geodetic Vertical Datum (NGVD)) allowed by the license.

16. In the event that natural conditions cause the Hoist Reservoir elevation to exceed 1341 feet NGVD, UPPCO states that it will take all reasonable steps to lower the reservoir, as required by Article 402 of the license. UPPCO defines "all reasonable steps" as increasing the powerhouse output to 330 cfs. In addition, UPPCO states that they will maintain Hoist Reservoir elevations above the monthly minimums as prescribed by Article 402 of the project license when adequate inflow is present. If reservoir inflow is insufficient to maintain the minimum reservoir elevation UPPCO proposes to implement the dry year consultation process discussed below.

17. For McClure Reservoir, UPPCO states that they will control releases to ensure that the reservoir elevation stays between 1,194.8 and 1,196.4 feet NGVD, and will limit fluctuation in the reservoir surface elevation to less than one foot on any day. UPPCO also states that they will maintain a continuous minimum flow downstream of the McClure Powerhouse of 80 cfs, when sufficient inflow is available.

Flow Releases during Outages and Shutdowns

18. The licensee's plan states that, during emergency shutdowns and planned outages, flow releases from the project will be made as follows: at Silver Lake flows will be released either over the spillway or through the low level outlet; at Hoist flows will be released over the spillway, through the low level outlet, or through the generating units; at McClure flows will be released over the spillway, through the deep water siphon, or

through the generating units. In addition, the plan states that the licensee will attempt to avoid planned drawdowns at all the reservoirs during the months of March, April, and May.

Dry Year Consultation

19. If reservoir inflow is insufficient to maintain minimum reservoir elevation requirements at any of the project developments, UPPCO proposes to implement a dry year consultation process. UPPCO proposes that standard procedures to modify operations during dry year conditions will be developed in consultation with the resource agencies following the completion of a hydrologic study of the Dead River that the licensee is currently undertaking. Once mutual agreement on standard procedures is reached by UPPCO, MDEQ, MDNR, FWS, Keweenaw Bay Indian Community (KBIC), and Dead River Campers, Inc., the licensee proposes to file standard dry year operating procedures with the Commission as an addendum to the Operations Monitoring Plan.

20. Prior to the development of standard dry year operating procedures, temporary modifications to the operating requirements of Article 402 and 403 during dry years will be determined on a case-by-case basis after consultation with the MDEQ, MDNR, FWS, KBIC, and Dead River Campers, Inc. The licensee states that the dry year consultation process would be initiated no later than the first business day following the day when any reservoir decreases below the required minimum elevation.

21. In addition, the licensee includes in its proposed plan, a list of modifications to project operations that would be implemented once the dry year consultation period is initiated. The list includes modifications to reservoir elevations and minimum flow releases which are prioritized in an effort to minimize the impact to Hoist Reservoir levels in order to protect recreational uses of the Hoist Reservoir and maintain flows in the seven mile stretch of the Dead River between Silver Lake and Hoist. The licensee states that when the minimum flow at Hoist is reduced, as a result of dry year consultation, a corresponding reduction will be required at McClure.

Reporting of Deviations

22. In its proposed plan, the licensee states that significant deviations in flow or reservoir level, whether planned or unplanned, will be reported to MDNR and MDEQ the first business day following the event. The plan states that all other deviations will be reported annually. The licensee proposes to define a significant deviation from flow requirements as any single observation that deviates from the license requirement by at least 20% or any deviation that persists for at least 24 hours. For all reservoir level limits, the licensee proposes to define a significant deviation as any single deviation of at least 0.15 feet and any deviation that persists for at least 48 hours.

23. In addition, the licensee proposes that all elevation requirements will have a tolerance of plus or minus 0.3 feet for 3 hours before it is considered a deviation from license requirements. The licensee also states that, because Silver Lake is not automated, lack of timely adjustments in flow releases cannot be considered deviations unless there is a span of at least seven days.

Flushing Flows in McClure Bypass

24. UPPCO's plan states that flushing flows will occur anytime the release from the Hoist spillway and/or turbine/generator output exceeds the capacity at the McClure powerhouse. UPPCO states that it is assumed that when water flows over the spillway at Hoist Dam, water will flow over the spillway at McClure Dam and flushing flows will be provided downstream. UPPCO also states that a flow greater than 130 cubic feet per second (cfs) will provide for the movement of woody debris downstream and prevents injurious sedimentation in the river. UPPCO predicts, using a hydrologic model which covers a 30 year period (1978-2007), that water flows over the McClure Spillway during 12 years of the 30 year period.

Annual Reports

25. The licensee's plan states that annual reports will be prepared and submitted to the MDNR. The annual reports would include a summary of water surface data and a record of all gate and valve openings. The licensee states that the report will include the date and time each gate is opened or changed, the position of the gate or valve, and the name of the operator that performed the procedure.

Three year Test Period

26. In its proposed plan, UPPCO states that the three year test period will consist of three "normal" water years. UPPCO defines a normal water year as a calendar year in which the average flow as measured at the USGS Gage located on the Middle Branch of the Escanaba River (No. 04057800) is within plus or minus 10% of the average calendar year flow for the period of record for that same gage. If a test period year does not meet this definition, the licensee states that the test year must be repeated. The licensee proposes to begin the three year test period when conditions for the Silver Lake Refill Plan are fulfilled.

27. Within 60 days of completing each test year, UPPCO proposes to provide an annual summary to the resource agencies for a 30 day comment period. Thirty days after the comment period ends (approximately 4 months after the test year is completed), UPPCO proposes to file the annual test reports with the Commission, and states that they will not attempt to address any of the comments received during the comment period. Following resource agency review of the annual report for the third test year, UPPCO plans on developing a proposal to modify the conditions of the license. Under UPPCO's

proposed timeline, the Commission would receive the amendment request approximately 8 months after completion of the third test year.

Drawdown Plan

28. The licensee describes in its plan, procedures for notification and consultation during emergency and planned drawdowns. When emergency drawdowns have commenced, the licensee states that it will notify the resource agencies, by phone or email, as soon as practical upon initiation of the drawdown. In addition, the licensee states that they will hold a meeting or conference call within 7 working days of initiating the drawdown to continue consultation with the resource agencies.

29. When planned drawdowns are scheduled, the licensee proposes to develop a drawdown plan and send the plan to the resource agencies for a 30 day consultation period. The licensee's proposal includes a description of the information that would be included in the drawdown plan. The licensee proposes, in part, to include the drawdown rate which would normally not exceed 0.5 feet per day.

Deepwater Draw at McClure

30. The licensee states that a siphon was installed in 2004 to meet the minimum flow and deepwater draw requirements. The licensee states that the flows were measured upon installation of the siphon using ultrasonic techniques to ensure that the siphon passed the required minimum flow and that flows will be verified annually to ensure that they continue to meet license requirements.

Schedule for Implementation

31. UPPCO states that the operations monitoring and compliance plan will be fully implemented within one full construction season after the plan has been approved by the Commission.

RESOURCE AGENCY COMMENTS AND LICENSEE RESPONSE

32. The licensee included documentation of consultation with the MDEQ, MDNR, FWS, and USGS in its October 6, 2008, and July 9, 2009, filings. The licensee addressed many of the agency comments and incorporated recommendations into the final Operations Monitoring Plan. This section discusses only those agency comments and recommendations that the licensee did not adopt in its final plan.

Reservoir Surface Elevation Monitoring

33. In its comments on the plan, both the MDNR and MDEQ recommend that reservoir surface elevations at the Silver Lake and Hoist Developments should be recorded hourly instead of daily, weekly, or monthly. The agencies state that more

frequent readings are possible given that water surface elevations will be recorded electronically and that hourly recording at the Silver and Hoist Reservoirs would be consistent with monitoring at the McClure Reservoir. In its response to the agencies' comments, the licensee states that the proposed monitoring frequencies are consistent with the minimum requirements of the licensee and that the agencies do not provide justification for the increased frequency in monitoring.

Flow Monitoring

34. The MDEQ recommends the installation of a USGS real time stream flow gage downstream of Silver Lake in order to accurately monitor flow releases from Silver Lake. UPPCO responds by stating that the capacity of the low level outlet and spillway rating are sufficiently understood to determine flows being released from Silver Lake. The MDEQ also asks the licensee to explain how inflow to each of the three reservoirs will be measured. UPPCO responds by stating that there are no provisions in the license that require UPPCO to monitor inflow to the reservoirs.

Project Operation

35. UPPCO states that, on the second day of the month, the Silver Lake and Hoist Reservoirs can be allowed to fall below or rise above the start of month target elevations, providing that the minimum and maximum (for Silver Lake) flow requirements are met. The MDNR and MDEQ both suggest that the language be amended to include a provision that "such a change in reservoir elevation is consistent with striving to meet the next start of month target elevation for the reservoir." In response, UPPCO states that the agencies' suggested wording is not consistent with the license interpretation and, therefore, was not incorporated into the plan.

36. In their comments on the proposed plan, both MDNR and MDEQ state that the description of what constitutes reasonable steps to achieve the 1,241 feet target elevation at Hoist Reservoir should include a description of the circumstances when turbine discharges at the Hoist Powerhouse would be increased to their maximum capacity and the circumstances where the low level outlet would be used to release water. The agencies point out that both of these steps were implemented in the spring of 2008 during high water conditions and contributed to the timely lowering of Hoist Reservoir. The agencies state that it would be unreasonable to limit discharges to only 330 cfs while extremely high water and the associated erosion persisted in the Hoist Reservoir if further releases would lower the reservoir faster and limit erosion while not causing serious adverse consequences downstream. UPPCO responded by stating that the action taken in 2008 was required by the Interim Reservoir Operating Plan and implemented as a dam safety provision in the absence of Silver Lake and did not incorporate the agencies' recommendation into the plan.

Dry Year Consultation

37. The MDEQ and MDNR recommend that the licensee's proposed list of prioritized project operations modifications, which would be implemented once the dry year consultation period is initiated, be deleted from the plan. Both agencies support consultation during dry year conditions on a case-by-case basis until the hydrologic model of the Dead River is complete.

38. UPPCO included in its plan a provision that, when the minimum flow at Hoist is reduced as a result of dry year consultation, a corresponding reduction in the minimum flow requirement will be required at McClure. The MDEQ states that they do not agree that minimum flow reductions at McClure Reservoir must correspond with minimum flow reductions at Hoist. The MDEQ states that minimum flow releases at McClure should be maintained unless otherwise authorized by mutual agreement from the resource agencies. The licensee responds that the three year test period will help support its conclusion.

Reporting of Deviations

39. The MDEQ requests that the licensee delete the paragraph in which the licensee proposes: 1) that all elevation requirements will have a tolerance of plus or minus 0.3 feet for 3 hours before it is considered a deviation from license requirements; and 2) that adjustments in flow releases from Silver Lake cannot be considered deviations unless there is a span of at least seven days. MDEQ states that reporting thresholds should not be considered as allowable operating limits and UPPCO should strive to meet all flow and reservoir limits at all times. UPPCO responds that it intends to comply with all terms of the license up to the limitations of the equipment required to document compliance and did not adopt the MDEQ's recommendation.

Three Year Operations Test Period

40. Both MDNR and MDEQ request that the three year test period begin when Silver Lake reaches the start of month target for the first time regardless of the month in which this occurs. In addition, the MDEQ recommended that the three year test period occur during three consecutive years in order to allow the licensee and the agencies to review potential compliance issues over a reasonable range of natural conditions. UPPCO responds that fulfillment of the conditions for the Silver Lake Refill Plan will determine the start of the three year test period and did not adopt the agencies' recommendations.

Flushing Flows in McClure Bypass

41. The MDEQ and MDNR request that UPPCO provide an estimate of the frequency, magnitude, seasonal timing, and duration of flushing flows to the McClure bypass channel. In UPPCO's letter filed July 9, 2009, UPPCO provided this information and

gave the agencies the opportunity to comment on the information prior to filing the letter with the Commission. No comments were received from the agencies.

DISCUSSION

Reservoir Surface Elevation Recording

42. Both MDNR and MDEQ recommend that reservoir surface elevations at the Silver Lake and Hoist Developments be recorded hourly. In its letter filed July 9, 2009, in response to the request for additional information, UPPCO states that the Silver Lake Reservoir elevation is monitored on a real-time basis and updated reservoir elevations are received electronically at least once every 30 minutes. Commission staff also visited the data reporting website mentioned in the licensee's plan and learned that water surface elevation data for all three reservoirs is updated on the site every 10 minutes. In addition, the licensee states that reservoir surface elevations are sent to the Energy Supply and Control Center which is staffed 24 hours a day.

43. More frequent recording of reservoir surface elevations will better enable the licensee to meet the requirements of the license. In addition, this data is necessary for the Commission to determine the licensee's compliance with license conditions. Also, an hourly record of reservoir surface elevations will enable the licensee, resource agencies, and the Commission to evaluate the licensee's ability to meet flow and reservoir surface elevations during the three year operations test period. Lastly, the licensee already has a system in place to collect the data with the recommended frequency. Requiring the licensee to record hourly data would provide little to no additional burden on the licensee. Therefore, the licensee should record reservoir surface elevations hourly at all three reservoirs and include summary data in annual reports to the Commission and the resource agencies.

Flow Monitoring

44. The licensee has included in Appendix C of its plan, rating curves for the project gates and spillways as well as inflow-outflow calculators for Silver and Hoist Lakes. In addition, in the Environmental Assessment prepared during the licensing proceeding,[4] Commission staff determined that installation of any new USGS gages on the Dead River was not necessary, because stream flow gaging downstream from each development would be redundant and not a necessary component of a plan to monitor project operation. The licensee's plan includes adequate provisions to monitor flow releases from each of the reservoirs. In addition, the licensee is developing a hydrologic model

[4] *See* Final Environmental Assessment for Hydropower License, issued July 1, 2002.

which will provide a better understanding of flows in the Dead River system. If the provisions included in the licensee's plan to monitor flows and discharges are insufficient, this should become apparent during the three year test period and the resource agencies will have an opportunity to comment and recommend changes to the Operations Monitoring Plan in their review of the test monitoring reports.

Project Operation

45. Article 402 of the project license and the WQC require the licensee to maintain the Silver Lake and Hoist Reservoirs above the monthly minimum elevations and strive to operate project facilities to achieve specific start of month target elevations. UPPCO proposes to operate the Silver Lake and Hoist Reservoirs so that, on the second day of the month, reservoirs can be allowed to fall below or rise above the start of month target elevations, providing that the minimum and maximum (for Silver Lake) flow requirements are met. The MDNR and MDEQ both suggest that the language be amended to include a provision that "such a change in reservoir elevation is consistent with striving to meet the next start of month target elevation for the reservoir." UPPCO did not incorporate the recommendation into the plan.

46. During the licensing proceeding for the Dead River Project, several parties recommended that the new license restrict reservoir level fluctuations and increase minimum flows in order to protect environmental resources and enhance recreational opportunities at the project. The water quality certification (WQC) issued for the project by MDEQ, contained certain minimum and start of month target reservoir elevations for the Silver Lake and Hoist Reservoirs. In the license EA, Commission staff determined that a reduction in reservoir level fluctuations would have beneficial effects for fisheries, shoreline vegetation, and lake recreation. However, staff also recognized that reductions in reservoir fluctuations could conflict with maintenance of minimum flows (required by the WQC) and would reduce the energy generation and power benefits of the project. After analyzing all of the impacts, both positive and negative, staff concurred with and recommended the WQC conditions for reservoir level restrictions.

47. UPPCO's interpretation of the license does not reflect the intent of the license to restrict reservoir level fluctuations. While the minimum elevation requirements provide a lower elevation boundary, UPPCO's proposal would not provide an upper elevation restriction after achieving the start of month target elevation. Based on UPPCO's interpretation, the reservoir level could increase to any elevation after the start of the month as long as the next start of the month target elevation was achieved. It is clear from the EA discussion and the WQC conditions that this is not the intent of the project license. While the start of month target elevations do not constitute discrete maximum elevation requirements, it is clear that the new operating requirements were intended to restrict reservoir level fluctuations to be near these target elevations.

48. The licensee should strive to meet the start of the month target elevations. After the start of the month, the licensee should operate the reservoirs in an effort to move toward the next start of month target elevation. It is expected that there will be fluctuation in reservoir elevations due to precipitation events, or lack of precipitation, and that progress toward the next target elevation will not necessarily be unidirectional. Staff also recognizes that the operational restrictions imposed by the minimum and maximum flow release requirements, ramp rates, and turbine capacity at the Hoist and McClure Developments should greatly restrict the licensee's ability to operate in a manner inconsistent with the intent of the license. Lastly, the three year test period required by the license, as well as the hydrologic modeling being prepared for the Dead River system will help all parties better understand water flows and identify issues with project operations and compliance with license conditions.

49. In the event that natural conditions cause the Hoist Reservoir to exceed an elevation of 1,341 feet NGVD, Article 402 of the project license requires the licensee to take all reasonable steps to lower the impoundment to the target elevation. The rate of lowering should not exceed 0.5 feet per day. In its proposed plan, the licensee states that, for the purposes of compliance with the license, all reasonable steps should be defined as increasing the powerhouse output to the maximum capacity of the turbines (330 cfs). In their comments on the plan, the resource agencies stated that both increased turbine discharges and low level outlet releases should be considered as reasonable steps to lower the reservoir below the maximum allowed by the license and noted that both measures had been implemented in spring of 2008 in order to lower the Hoist Reservoir in a timely manner.

50. What constitutes reasonable steps to lower the reservoir would depend on the circumstances of the extreme high water event including, but not limited to: reservoir elevation and predicted trend (increasing or decreasing); environmental effects of discharge downstream; precipitation data and predictions; and the operational conditions of other developments and the downstream project. The Commission is aware that the licensee could utilize one or both of the discharge measures (turbines or low level outlet) to lower the reservoir in order to achieve compliance with the license requirement and will not limit the definition of "reasonable steps" to only include increased turbine generation. The Commission will determine the licensee's compliance with Article 402, as necessary, on a case-by-case basis using all available information.

51. UPPCO states that, when the minimum flow at Hoist is reduced as a result of dry year consultation, a corresponding reduction will be required at McClure. The MDEQ states that minimum flow releases at McClure should be maintained unless otherwise authorized by mutual agreement from the resource agencies. The licensee responds that the three year test period will help support this statement. Commission staff concur with MDEQ that a temporary reduction in the minimum flow requirement at one development should not automatically trigger a reduction in the minimum flow requirement of another

development. Potential reductions in minimum flow requirements at any of the project developments should be discussed as part of the dry year consultation process.

Dry Year Consultation

52. The licensee's dry year consultation plan includes a list of modifications to reservoir elevations and minimum flow releases which are prioritized in an effort to protect recreational uses of the Hoist Reservoir and maintain flows in the seven mile stretch of the Dead River between the Silver Lake and Hoist Developments. The MDEQ and MDNR recommend that this list be deleted from the plan and that consultation during dry year conditions be conducted on a case-by-case basis until the hydrologic model is complete.

53. UPPCO states that, when the minimum flow at Hoist is reduced as a result of dry year consultation, a corresponding reduction will be required at McClure. The MDEQ states that minimum flow releases at McClure should be maintained unless otherwise authorized by mutual agreement from the resource agencies.

54. Commission staff concurs with the resource agencies' recommendation to determine appropriate modifications to project operations during dry conditions on a case-by-case basis until standard procedures are developed. This will enable the licensee and resource agencies to develop standard procedures with all available information including the results of the hydrologic modeling of the Dead River.

55. The licensee is reminded that Articles 402 and 403 provide that reservoir elevation and minimum flow requirements, respectively, may be temporarily modified for short periods of time, upon mutual agreement among the licensee, MDNR, MDEQ, and FWS. Temporary modifications to project operations as a result of dry conditions may be implemented for short periods of time under these provisions. If dry conditions persist for more than two to three weeks, the licensee may need to file, for Commission approval, a request for a temporary variance in operating requirements.

Reporting of Deviations

56. In its proposed plan, the licensee states that significant deviations in flow or reservoir level, whether planned or unplanned, will be reported to MDNR and MDEQ the first business day following the event. The plan states that all other deviations will be reported annually. The licensee proposes to define a significant deviation from flow requirements as any single observation that deviates from the license requirement by at least 20% or any deviation that persists for at least 24 hours. For all reservoir level limits, the licensee proposes to define a significant deviation as any single deviation of at least 0.15 feet and any deviation that persists for at least 48 hours.

57. In addition, the licensee proposes that all elevation requirements will have a tolerance of plus or minus 0.3 feet for 3 hours before it is considered a deviation from license requirements. The licensee also states that, because Silver Lake is not automated, lack of timely adjustments in flow releases cannot be considered deviations unless there is a span of at least seven days. The MDEQ requests that this paragraph be deleted from the plan and states that reporting thresholds should not be considered allowable operating limits.

58. UPPCO is expected to operate the Dead River Project in order to comply with all license requirements. Articles 402 and 403, which include reservoir elevation and minimum flow requirements, respectively, state that these requirements may be temporarily modified, if required by operating emergencies beyond the control of the licensee, or for short periods, upon mutual agreement among the licensee, MDNR, MDEQ, and FWS. Upon such modification, the licensee is required to contact MDNR, MDEQ, and FWS within 1 business day of identifying the deviation to initiate consultation. In addition, the licensee must notify the Commission as soon as possible, but no later than 10 days after each incident and shall provide the reason for the modification and actions taken to return the project to normal operating minimum flows.

59. The consultation and notification requirements of Articles 402 and 403 are to ensure that modifications to license requirements are reported in a timely manner so that resource agencies and the Commission can take action to protect environmental resources and/or to require corrective action as necessary. In addition to the modifications provided for in Articles 402 and 403, there may be other instances when the licensee deviates from license requirements. The licensee is reminded that any variance or deviation from flow and reservoir surface elevation requirements may be considered a violation of the license requirements. Compliance with required flows and reservoir elevations will be determined by the Commission based on operational data, precipitation and flow data, and other relevant information. Therefore, all language in the licensee's proposed Operations Monitoring and Compliance Plan regarding deviation reporting is not acceptable and the licensee should comply with the reporting requirements of Articles 402 and 403 of the project license and the following:

60. So that the resource agencies and the Commission can monitor the licensee's compliance with license requirements, the licensee should report all variances or deviations from flow, ramp rate, and reservoir surface elevation requirements to the MDEQ, MDNR, FWS, and the Commission. In its plan, the licensee proposes to notify the resource agencies within one business day of a "significant" deviation. In addition, the licensee's dry year consultation plan and Articles 402 and 403 include provisions to notify the resource agencies within one business day of a deviation, and any future deviations from license requirements are expected to fall under one of these categories. Therefore, in order to provide consistent and timely notification of all deviations from license requirements, it is appropriate that, for any other deviation from operations