



Upper Peninsula Power Company
1002 Harbor Hills Drive
Marquette, MI 49855
www.UPPCO.com

June 25, 2018

FERC Project No. 10855
NATDAM Nos. MI00197 & MI00175

Ms. Kimberly D. Bose, Secretary
The Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

Dear Secretary Bose:

Dead River Hydroelectric Project: Silver Lake and Hoist Developments

Article 402 – Planned Deviation of License Start of Month Target Elevations

In accordance with Article 402 of the Order Issuing License for the Dead River Hydroelectric Project dated October 4, 2002, and as amended September 1, 2011, Upper Peninsula Power Company (UPPCO) is required to "strive to operate the existing project facilities to achieve the start of month target elevations." Storage basin elevation may also be modified for short periods upon mutual agreement among the licensee, the Michigan Department of Environmental Quality (MDEQ), the Michigan Department of Natural Resources (MDNR), and the U.S. Fish and Wildlife Service (USFWS).

On Monday, March 19, 2018, UPPCO requested to adjust operations at the Silver Lake and Hoist developments allowing for higher start of month headwater elevation targets for the months of May and June. Comments were received from the agencies and are attached in Appendix A. Approval of the requested planned deviation was received on April 11th.

On Monday, May 21, 2018, UPPCO requested to adjust operations at the Hoist development allowing for a higher start of month headwater elevation target for the month of June. Only one comment was received from the MDEQ and is attached as part of Appendix A. No other comments were received. Operations changes were implemented starting May 25th.

Weekly email updates were provided to all agency representatives during the planned deviations and have been included in Appendix A. Also included in Appendix B is operational data during the deviation periods.

If you have any questions about this planned deviation, please do not hesitate to contact Josh Ball at (906) 485-2419, or Virgil Schlorke at (906) 232-1431.

Sincerely,

Virgil Schlorke
Director - Generation and Environmental Services

JB/ebr

Enclosures: Appendix A: Documentation of Agency Consultation
Appendix B: Operational Data

cc: Mr. Josh Ball, UPPCO
Mr. Ken Carruthers, UPPCO
Mr. Jim Grundstrom, DCRI
Ms. Elle Gulotty, MDNR
Mr. Scott Hicks, USFWS
Ms. Amira Oun, MDEQ
Ms. Emily Rushford, UPPCO

Appendix A: Documentation of Agency Consultation

Joshua Ball

ORIGINAL REQUEST

From: Joshua Ball
Sent: Monday, March 19, 2018 3:06 PM
To: Burr Fisher; 'Gulotty, Elle (DNR)'; Oun, Amira (DEQ); 'Jim Grundstrom'
Cc: 'Lee Woods'; Virgil E. Schlorke; David R. Tripp (DRTripp@uppc.com); Kenneth M. Carruthers
Subject: Dead River Hydroelectric Project (P-10855): Article 402 Planned Deviation Request DRAFT

All,

As indicated during our annual agency meeting on Thursday March 1, 2018 UPPCO has been watching the snowpack information on the NWS website and identified there has been no significant increase or decrease in the snow water equivalent for the Dead River watershed.

Based upon our current estimates, UPPCO is requesting comment on the following proposed planned deviations at the Silver Lake Storage Basin (SLSB) and the Dead River Storage Basin (DRSB) developments of the Dead River License (P-10855), which were discussed during annual agency meeting:

1. Raise start of month headwater target elevation at SLSB to 1,482 ft NGVD for the months of May and June; and
2. Raise start of month headwater target elevation at DRSB to 1,341 ft NGVD for the month of May.

The aforementioned planned deviations will reduce the potential of failing to reach 1,341 ft NGVD at DRSB in the Spring. As such, UPPCO believes that these deviations are the best course of action for the DRSB stakeholders, as well as the ecological health of the system, based on the best available data at present.

Furthermore, regardless of the above requested planned deviations, it appears if additional precipitation is not received in late March, it is likely we will not be able to maintain an elevation of 1341.0 ft NGVD while releasing minimum flows during the recreation season at the DRSB and will be entering dry-year consultation during the summer.

Additionally, over the course of the last few weeks, UPPCO has monitored a declining headwater trend at the Silver Lake storage basin. With minimum flows being maintained during this timeframe, current headwater levels are at 1477.13 ft NGVD. With licenses minimums for the months of March and April at 1477.0 ft, UPPCO is anticipating entering into a dry-year consultation period as a result of continued minimum flows releases from the storage basin. Therefore, as part of this consultation:

3. UPPCO recommends continuing to release minimum flows from SLSB if dry-year consultation becomes necessary before spring runoff.

Please provide your comments to UPPCO on all three of the recommendations at your earliest convenience. If UPPCO does not receive your comments within 5 working days subsequent to the issuance of this request, it will assume you have none.

Regards,

Josh Ball
Generation Supervisor
Upper Peninsula Power Company
500 N. Washington St.

FOR INFORMATION
MDNR REQUEST FOR WORKING EMAIL

Joshua Ball

From: Gulotty, Elle (DNR) <GulottyE@michigan.gov>
Sent: Thursday, March 22, 2018 1:59 PM
To: Joshua Ball
Cc: Oun, Amira (DEQ)
Subject: RE: Dead River Hydroelectric Project (P-10855): Article 402 Planned Deviation Request DRAFT

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Hi Josh,

Can you provide the following:

- Forecast data that UPPCO is currently using to predict anticipated precipitation in the system in the near future? (rationale for concern about March)
- Head water elevation and flow releases over the last few weeks at Silver Lake Storage Basin
 - (i.e. data demonstrating what you mentioned in your email) Additionally, over the course of the last few weeks, UPPCO has monitored a declining headwater trend at the Silver Lake storage basin. With minimum flows being maintained during this timeframe, current headwater levels are at 1477.13 ft NGVD.
- Head water elevation, generation, and flow releases (etc.)over the last few weeks at Hoist Basin?

Thank you,

Elle

UPPCO RESPONSE TO MONR REQUEST FOR INFORMATION

Joshua Ball

From: Joshua Ball
Sent: Thursday, March 22, 2018 3:14 PM
To: 'Gulotty, Elle (DNR)'; Oun, Amira (DEQ)
Cc: Burr Fisher; 'Jim Grundstrom'; 'Lee Woods'; Virgil E. Schlorke; Kenneth M. Carruthers
Subject: RE: Dead River Hydroelectric Project (P-10855): Article 402 Planned Deviation Request DRAFT
Attachments: 201803221418.pdf

Elle,

Per your below email, please see the attached graphs depicting Silver Lake Flow Releases, Silver Lake Headwater Elevations, Hoist Flow Releases, and Hoist Headwater Elevations.

Regarding your first bullet point: UPPCO's statement in the original email about March ("..it appears if additional precipitation is not received in late March..") was not in correlation to weather predictions. It was a statement based on previous snowpack and precipitation data on record, and how that data directly impacted UPPCO's hydrologic model for the Dead River Storage Basin (DRSB). Modeled years with snowpack in the 6-8" range in mid-March, with no additional precipitation received thereafter, trended toward years with a consultation period. Modeled years that saw precipitation in late March resulted in higher summer water levels on the DRSB.

As a general tidbit, UPPCO works directly with the NWS in Marquette, and reviews multiple weather websites to assist with weather predictions for both short and long term forecasts. Our current understanding for the next 10 days: Temperatures in the mid to high 30's during the day and high teens to low 20's for the evenings, with little to no precipitation (< 0.5").

Thanks,

Josh Ball

Generation Supervisor

Upper Peninsula Power Company

500 N. Washington St.

Ishpeming, MI 49849

Office: 906-485-2419

Mobile: 906-869-1798

jball@uppc.com

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82.00

75

Viewing summarized data

2/21/18

45.00

20

3/16/18

15

SLK TOTAL FLOW

8.00

Time Span: 29:23:00:00

02/19/18 09:11:11

08:41:11

03/21/18 09:11:11



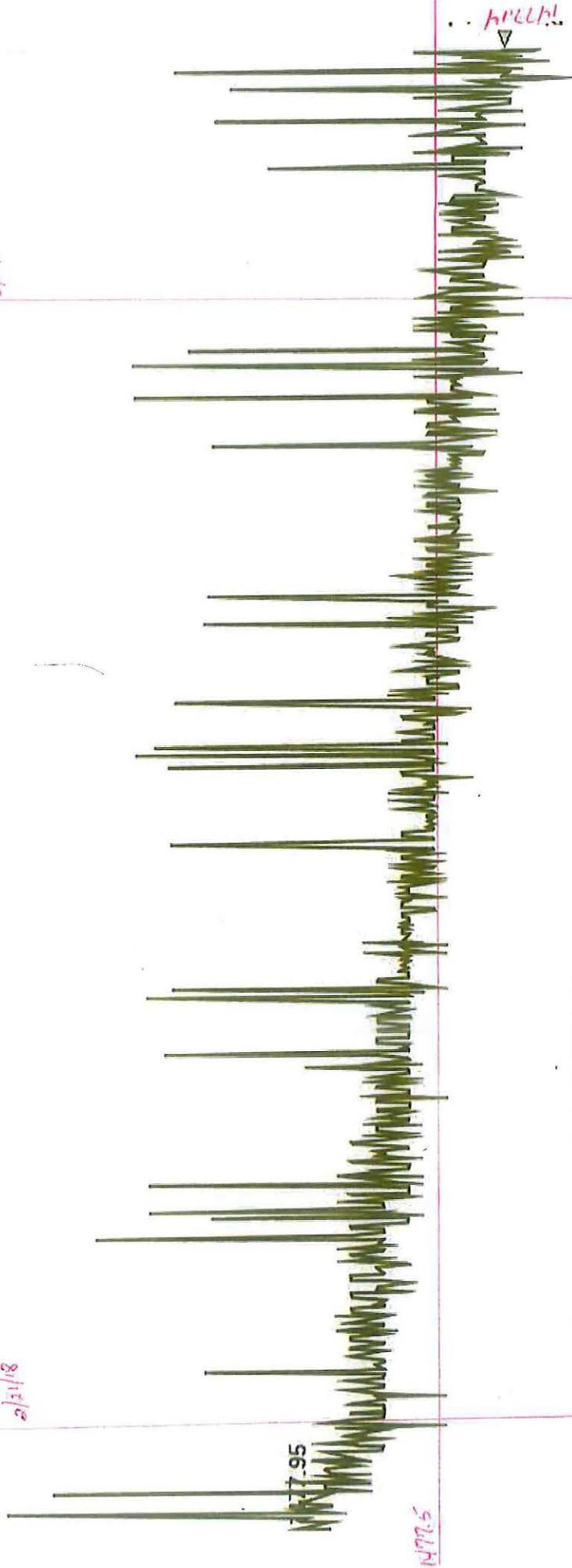
Trending 03/21/18 09:27:47

1479.50

Viewing summarized data

2/21/18

3/14/18



1477.95

1476.5

SLK HEADWATER ELEVATION

1476.40

Time Span: 29:23:00:00

02/19/18 09:13:06

08:43:06

03/21/18 09:13:06

Navigation toolbar with icons for back, forward, search, and other controls.

181.00

Viewing summarized data

170 2/21/18

132.00

3/5/18

3/16/18

3/17/18

120

115

110

103

HST TOTAL PLANT FLOW

83.00

Time Span: 30:23:04:00

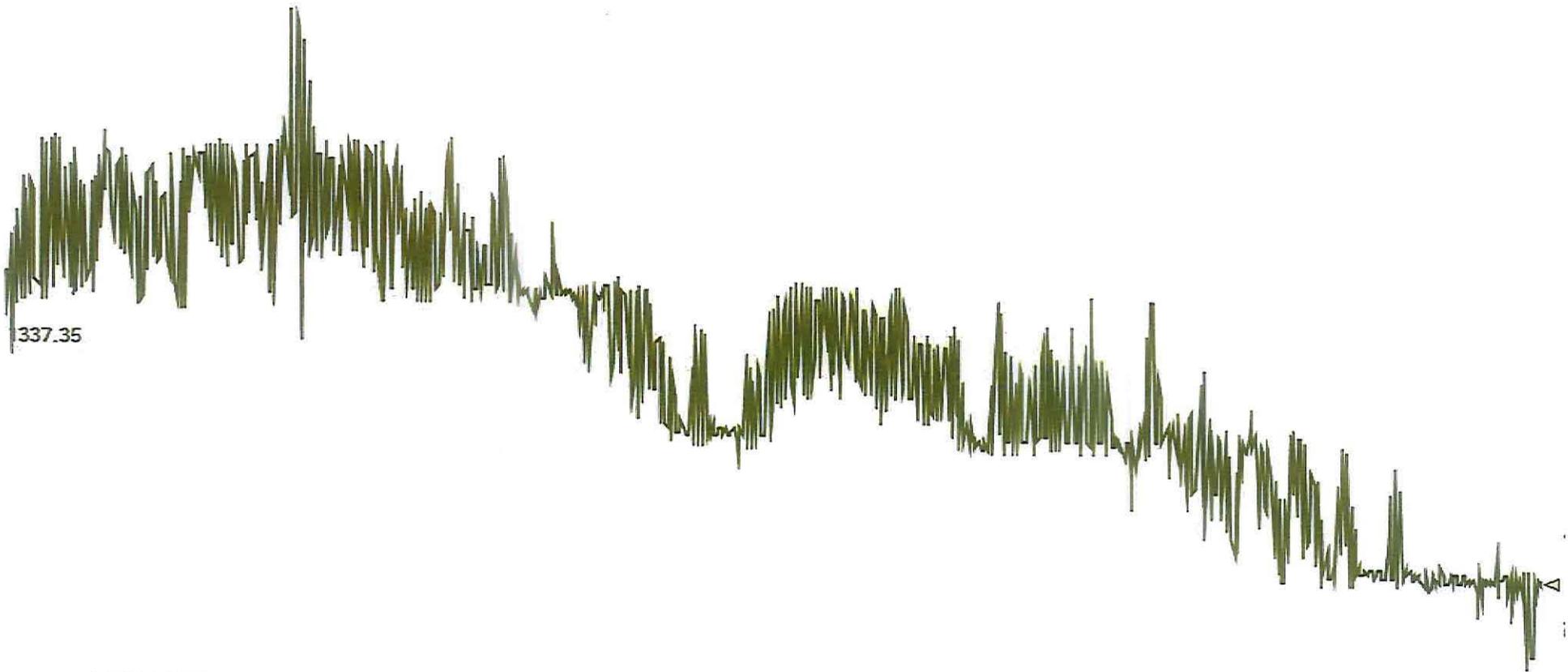
02/19/18 14:04:14

01:36:14

03/22/18 14:08:14



1337.48 Viewing summarized data



HST HEADWATER ELEVATION

1337.21

Time Span: 30:23:04:00

02/19/18 14:05:25

01:37:25

03/22/18 14:09:25



MDEQ RESPONSE TO ORIGINAL REQUEST

Joshua Ball

From: Oun, Amira (DEQ) <OunA@michigan.gov>
Sent: Friday, March 23, 2018 9:27 AM
To: Joshua Ball
Cc: Virgil E. Schlorke; David R. Tripp; Kenneth M. Carruthers; Elle Gulotty
Subject: RE: Dead River Hydroelectric Project (P-10855): Article 402 Planned Deviation Request DRAFT

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Good Morning Josh,

The MDEQ reviewed your Planned Deviation Request for the target elevations for the months of May and June. We do not feel comfortable with your proposal as it is right now because it is in contradiction with your recommendations in the three year test. The plan is not clear enough and needs major revisions. It should include analysis for the whole summer season. For example how UPPCO will acts if the watershed get a fair amount of precipitation? Can UPPCO take any operational actions that help to avoid the dry year consultations?. At this time we have the following recommendations:

1. Rewrite the Planned Deviation Request to be concur with the three year test, and provide more discussion and more data analysis.
2. The plan should include the whole summer season instead of planning for May and June only.
3. The plan should include all the proactive actions for both Silver lake and Hoist.
4. Schedule a conference call with the MDEQ and MDNR prior the submission of your plan.

Thank you for giving the MDEQ the opportunity to review and comments on your plan. Please contact me if you have any questions.

Joshua Ball

MDNR RESPONSE TO ORIGINAL REQUEST

From: Gulotty, Elle (DNR) <GulottyE@michigan.gov>
Sent: Friday, March 23, 2018 1:57 PM
To: Oun, Amira (DEQ); Joshua Ball
Cc: Virgil E. Schlorke; David R. Tripp; Kenneth M. Carruthers
Subject: Re: Dead River Hydroelectric Project (P-10855): Article 402 Planned Deviation Request DRAFT

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Hi Josh,

MDNR is in agreement with MDEQ. In order to approve your request, additional information should be provided and consultation should take place. UPPCO should develop a plan for the whole summer, based on an analysis of sufficient detail that uncertainties, action criteria, etc., are understood in advance.

MDNR appreciates the additional information you provided, however, the operations decisions up to this point do not make sense in the context of your current request. It also should be noted, that it is still unclear what the role of the "model" you reference is. When UPPCO refers to "modeled" years, it seems as though that instead refers to comparisons to historical data referenced in the Agency Meeting, not a model with associated statistics, input parameters etc., correct?

My understanding (and of course, feel free to correct me) is that UPPCO's current position is roughly: If we look at the graph provided on March 1, and suppose we are starting between six and eight inches of water in the vertical axis (which appears correct when we last spoke and according to NOAA data I referenced the other day), any of those 8 or so lines representing a year's water equivalent out of the last 10 years presented could be similar to what we will experience this year, and of course if we get no precipitation, there would be less water in the system.

Did I miss anything in my description of the 'model'?

As part of the discussion MDEQ have recommended, I will be interested in hearing what the rationale was for releasing 75cfs from Silver lake until 2/21, and 20cfs until 3/16; What was the goal?; Why trend so low if UPPCO planned to ask for a deviation a couple weeks later? Further, as MDEQ outlined, if in May of 2018, we're in a similar position as May of 2017 (May 8, 2017 for example the elevation at Hoist was at 1344.72 and 402cfs) will the LLO be used? Having a sense of operations parameters and action/consultation points is warranted.

As far as I understand, there is still a good amount of water on the landscape, options for operations to avoid a dry year consultation and time for UPPCO to address the points MDEQ outlined which I will repeat below:

1. Rewrite the Planned Deviation Request to be consistent with the three year test report, and provide more discussion and more data analysis.
2. The plan should include the whole summer season instead of limiting planning to May and June only.
3. The plan should include all the proactive actions for both Silver lake and Hoist.
4. Schedule a conference call with the MDEQ and MDNR prior the submission of your plan.

Additional information and context:

The Three Month Outlook for April, May and June suggests this part of the country will be getting above normal precipitation (http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1) though looking through verification data we can see that we should be cautious in relying on these predictions alone

(http://www.cpc.ncep.noaa.gov/products/predictions/long_range/tools/briefing/seas_veri.grid.php)

- As shown in UPPCO's 10 years of recent data presentation, the current snowpack is fairly common at ~ 6-8" in the vicinity of the watershed (NOAA snow water equivalent)- this does not seem to be unusual.

Thank you for the opportunity to review and comment on your plan. Please contact me if you have any questions.

Elle

Joshua Ball

UPPCO RESPONSE TO MDNR + MDEQ RESPONSES TO ORIGINAL REQUEST

From: Joshua Ball
Sent: Monday, March 26, 2018 4:20 PM
To: Burr Fisher; Gulotty, Elle (DNR); Oun, Amira (DEQ); Jim Grundstrom
Cc: Lee Woods; Virgil E. Schlorke; Dave Grigg (DMGrigg@uppc.com); Kenneth M. Carruthers; GenerationAdmin
Subject: RE: Dead River Hydroelectric Project (P-10855): Article 402 Planned Deviation Request

All,

On March 19, 2018 UPPCO issued a request for comment on a planned deviation for the Dead River License developments of the Silver Lake Storage Basin (SLSB) and the Dead River Storage Basin (DRSB) based on the premise of capturing and storing spring runoff. UPPCO's request to modify the license operation requirements (start of month targets for SLSB & DRSB) were a good faith effort for the betterment of the resource and stakeholders. They were based UPPCO's professional assessment of current, expected weather information and previously recorded weather and watershed flow statistics.

Regardless, based on the comments received, UPPCO considers this request denied. UPPCO has arrived at this conclusion because all available information that UPPCO is aware of has been provided and further consultation on information will not be beneficial. UPPCO will continue to operate the facilities consistent with License Articles 402 and 403 and the approved Monitoring Plan.

Additionally, as part of the comments received for the deviation request, a few questions on operations parameters were introduced that are answered below:

- **"..what the rationale was for releasing 75cfs from Silver lake until 2/21, and 20cfs until 3/16; What was the goal?; Why trend so low if UPPCO planned to ask for a deviation a couple weeks later?.."** (Elle Gulotty, 3/23/18 email)
 - The goal in releasing 75 cfs until 2/21 was to strive to meet the license target elevation of 1477.5 for March 1, 2018. Flows were reduced on 2/21 to 20 cfs as we were still above the target elevation, but trending down towards it. The elevation reached the target on 3/7. On 3/16, flows were reduced to the minimum (from 20cfs to 15cfs) when it became clear the target elevation could no longer be maintained while releasing 20cfs. A notification was included on March 19th as part of the discussion for a proactive approach, but has yet to be officially implemented (dry year consultation at the SLSB)
- **"Further, as MDEQ outlined, if in May of 2018, we're in a similar position as May of 2017 (May 8, 2017 for example the elevation at Hoist was at 1344.72 and 402cfs) will the LLO be used?"** (Elle Gulotty, 3/23/18 email)
 - No. The low level outlet at the Hoist facility is only used to maintain minimum flows during powerhouse outages and during extreme high water events.

Thank you all for your time in regards to the proposed planned deviation. If, later in the season, you would like to change your position based on the information previously provided and the reservoir elevation situations at that time, please feel free to provide comments to UPPCO proposing a planned deviation. UPPCO will consider your comments at that time based on the current information available.

Regards,

Josh Ball
Generation Supervisor
Upper Peninsula Power Company
500 N. Washington St.
Ishpeming, MI 49849

MDEQ ANSWER TO UPPCO'S RESPONSE

Joshua Ball

From: Oun, Amira (DEQ) <OunA@michigan.gov>
Sent: Tuesday, March 27, 2018 9:38 AM
To: Joshua Ball; Burr Fisher; Elle Gulotty; Jim Grundstrom
Cc: Lee Woods; Virgil E. Schlorke; David M. Grigg Jr; Kenneth M. Carruthers; GenerationAdmin
Subject: RE: Dead River Hydroelectric Project (P-10855): Article 402 Planned Deviation Request

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All,

MDEQ did not denied UPPCO's request for planned deviation, MDEQ request a complete plan for the whole summer which will help UPPCO and all agencies to take a wise decision when ever needed. If there are some unclear operational plan it is better to bring it on the table now than deal with it later.

I would say the main goal for the MDEQ is to be proactive instead of being reactive.

Thanks
Amira

Joshua Ball

MJNR ANSWER TO UPPCO'S RESPONSE

From: Gulotty, Elle (DNR) <GulottyE@michigan.gov>
Sent: Tuesday, March 27, 2018 9:59 AM
To: Oun, Amira (DEQ); Joshua Ball; Burr Fisher; Jim Grundstrom
Cc: Lee Woods; Virgil E. Schlorke; David M. Grigg Jr; Kenneth M. Carruthers; GenerationAdmin
Subject: RE: Dead River Hydroelectric Project (P-10855): Article 402 Planned Deviation Request

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Hi Josh,

My comments also did not include a denial of UPPCO's request. I was and am asking for clarification on several points, and that UPPCO provide a plan for the summer season and proactive actions for Silver Lake and Hoist. The primary objective of my response was to support the earlier agency (MDEQ) request that UPPCO should provide information necessary to demonstrate their plans for operation and explain what is informing them, so that agencies have an opportunity to be proactive about concerns rather than reactive.

At this time I have received partial responses to select questions. Because only some questions were answered and some of those responses were unclear to me, I am left with outstanding questions and concerns. I am hoping UPPCO choses to work together with the agency folks and others to finalize an operations plan that is in the best interest of all parties.

Thank you,
Elle

Joshua Ball

UPPCO CLARIFICATIONS AND RESUBMITTAL OF PLANNED DEVIATION REQUEST

From: Joshua Ball
Sent: Wednesday, March 28, 2018 3:02 PM
To: 'Gulotty, Elle (DNR)'; Oun, Amira (DEQ); Burr Fisher; Jim Grundstrom
Cc: Lee Woods; Virgil E. Schlorke; Kenneth M. Carruthers; GenerationAdmin
Subject: RE: Dead River Hydroelectric Project (P-10855): Article 402 Planned Deviation Request

All,

To address comments received as part of UPPCOs planned deviations request at the Silver Lake Storage Basin (SLSB) and the Dead River Storage Basin (DRSB) developments of the Dead River License (P-10855) sent March 19, 2018, UPPCO is restating its request to:

- Raise start of month headwater target elevation at SLSB to 1,482 ft NGVD for the months of May and June
- Raise start of month headwater target elevation at DRSB to 1,341 ft NGVD for the month of May.

UPPCO has provided these recommendations using its experience and professional assessment of current snowpack information and weather forecasts, which remain similar to the data provided during the Annual Agency Call on March 1, 2018. There is no additional data or clarifications beyond what has been provided and no operation plan changes to be considered, recommended or suggested. UPPCO will always operate its projects according to the license requirements. Therefore, our operation plan is the same regardless of what the target elevations are. The table below is a general summary (not all inclusive) of what it means to operate according to our license:

Development	Parameter	Potential Action
Silver Lake	Headwater elevation above license target	Use all reasonable operation measures to trend elevation towards the target elevation, without negatively impacting downstream developments
	Headwater elevation below license target	Adjust out flows such that headwater elevation trends towards the start of month target elevation, while maintaining at least minimum flows
	Headwater trending below or at license minimum	Release minimum flows and initiate dry year consultation process
Hoist	Headwater elevation above license target	Use all reasonable operation measures to trend elevation towards the target elevation, without negatively impacting downstream developments
	Headwater elevation below license target	Adjust out flows such that headwater elevation trends towards the start of month target elevation, while maintaining at least minimum flows
	Headwater trending below or at license minimum	Release minimum flows and initiate dry year consultation process
McClure	Headwater elevation above license requirements	Use all reasonable operation measures to bring elevation back into license requirements.
	Headwater elevation trending up or down but within license requirements	Adjust out flows such that headwater elevation trends continue to stay within license requirements, while maintaining at least minimum flows

	Headwater elevation trending below or at license minimum	Release minimum flows and initiate dry year consultation
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Additionally, two snip-its from the license have been included at the end of this email depicting the current approved target elevations.

Previous comments received from the MDNR & MDEQ did not support the deviation request, therefore, UPPCO will not implement the requested planned deviation unless it receives written (email) agreement from the MDNR & MDEQ in support of the planned deviations above.

If the USFWS & DRCI would like to comment, please do so within 5 business days. If no comments are received, UPPCO assumes you have none and are in support of the planned deviation.

Regards,

Josh Ball

Generation Supervisor

Upper Peninsula Power Company

500 N. Washington St.

Ishpeming, MI 49849

Office: 906-485-2419

Mobile: 906-869-1798

jball@upppo.com

www.upppo.com

- (1) Maintain the Silver Lake Storage Basin (SLSB) water surface levels at all times above the minimum seasonal target elevations and strive to operate the existing project facilities to achieve the start of month target elevations listed below.

Month	Start of Month Target Elevation (feet in National Geodetic Vertical Datum [NGVD])	Minimum Elevation (feet NGVD)
April	1477.5	1477

20021004-3071 Received by FERC OSBC 10/04/2002 in Docket#: P-10855-002

Project No. 10855-002

- 23 -

Month	Start of Month Target Elevation (feet in National Geodetic Vertical Datum [NGVD])	Minimum Elevation (feet NGVD)
May	1479	1478.5
June	1481	1480.5
July	1481.5	1480
August	1480	1479
September	1479.5	1479
October	1479.5	1479
November	1479	1478.5
December	1479	1478.5
January	1479	1477.5
February	1477.5	1477
March	1477.5	1477

- (2) Maintain the Dead River Storage Basin (DRSB) at all times above the minimum elevations shown below and strive to operate the existing project facilities to achieve the start of month target elevations listed below, 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, the licensee shall take all reasonable steps to lower the impoundment to the target elevation.

Month	Start of Month Target Elevation (feet NGVD)	Minimum Elevation (feet NGVD)
April	1337.5	1337
May	1340	1339

20021004-3071 Received by FERC OSEC 10/04/2002 in Docket#: P-10855-002

Project No. 10855-002

- 24 -

Month	Start of Month Target Elevation (feet NGVD)	Minimum Elevation (feet NGVD)
June	1341	1339
July	1341	1339.5
August	1341	1339.5
September	1341	1339.5
October	1341	1339.5
November	1341	1339.5
December	1339	1338.5
January	1339	1337.5
February	1337.5	1337
March	1337.5	1337

From: Gulotty, Elle (DNR) <GulottyE@michigan.gov>

Sent: Tuesday, March 27, 2018 9:59 AM

To: Oun, Amira (DEQ) <OunA@michigan.gov>; Joshua Ball <jball@uppc.com>; Burr Fisher <burr_fisher@fws.gov>; Jim Grundstrom <jimgrundstrom@freichevy.com>

MDNR FINAL RESPONSE & APPROVAL

Joshua Ball

From: Gulotty, Elle (DNR) <GulottyE@michigan.gov>
Sent: Wednesday, April 04, 2018 3:35 PM
To: Joshua Ball; Oun, Amira (DEQ); Burr Fisher; Jim Grundstrom; Mistak, Jessica (DNR)
Cc: Lee Woods; Virgil E. Schlorke; Kenneth M. Carruthers; GenerationAdmin
Subject: RE: Dead River Hydroelectric Project (P-10855); Article 402 Planned Deviation Request
Attachments: MDNR Letter to UPPCO_Dead River Deviation Request 2018-04-04.pdf

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Josh,

Please see attached response.

Thank you,
Elle



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LANSING



KEITH CREAGH
DIRECTOR

April 4, 2018

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

**RE: DEAD RIVER HYDROELECTRIC PROJECT – REQUESTED PLANNED DEVIATIONS
OF START OF MONTH TARGETS- ARTICLE 402 (P-10855)**

Dear Mr. Schlorke,

The Michigan Department of Natural Resources (MDNR) has reviewed Upper Peninsula Power Company's (UPPCO) Request for planned deviations at Silver Lake and Hoist. MDNR approves UPPCO's March 19th request to: 1) raise start of month headwater target elevation at SLSB to 1,482 ft NGVD for the months of May and June; and 2) raise start of month headwater target elevation at DRSB to 1,341 ft NGVD for the month of May. UPPCO's third point was not a request, requires further clarification, and is a hypothetical that is not yet applicable (see item 2d). UPPCO should note that any future requests for deviations will only be considered if information requested by agencies is provided and resolution has been reached on the topics outlined in this letter.

Background: MDNR has recently provided comments on the Three Year Test Report (and revisions), an Erosion Report, and had several exchanges via email and phone seeking clarification from UPPCO on a number of questions relating to resource protection, operations compliance, and attempting to fulfill responsibilities for consultation on the Dead River. The context of UPPCO's deviation request is multifaceted, resulting from a combination of 1) Recent Operations Decisions, 2) Need to Support Operations with Data, Analysis and Justification, 3) Select Unresolved Issues Relevant to Deviation Request Arising from Formal and Informal Correspondence.

1) Recent Operations Decisions:

While DNR awaits response from UPPCO, and from FERC on the Three Year Test process, UPPCO has suggested they are focused on following their license requirements, because they have not received revised requirements or response from FERC. While this would typically be a reasonable approach; UPPCO may have anticipated that it would request a higher elevation in Silver Lake (part of their current request) since Silver Lake would be available following refill, and UPPCO has repeatedly cited in its letters the limitations on Silver Lake as contributing to various concerns. UPPCO asked for a higher target elevation (1482'), but recognizing how long it took to refill the basin under the refill plan, it doesn't make sense that prior to making this request, UPPCO released water above the minimums at Silver Lake (January-February at 75cfs and then late February to mid-March at 20cfs). Typically, MDNR staff would not go into this level of detail with respect to operations where license conditions are being met, but in any case, the decision to release at a rate and duration above the minimums stands out because it seems like doing so has put the whole system in a lurch due to UPPCO's requested shift of the target for Silver Lake. It is further challenging because the elevation UPPCO has requested is

not the same elevation outlined in the Test Report requests, and this is likely because higher elevation (1485') would almost certainly be unachievable.

2) Need to Support Operations with Data, Analysis and Justification.

A number of unresolved questions relate to insufficient presentations of data, analysis and other justifications by UPPCO for its decisions (in operations, compliance, etc.). UPPCO has provided a number of partial answers or answers that lack sufficient detail to allow agencies to provide useful and meaningful comments. Without the whole picture, and an understanding of how requests of UPPCO fit into a broader context, it is difficult for agencies to comment on requests that span a couple months and do not speak to future requests. This approach prevents proactive discussions. MDNR asks for clarification when clarification is needed for UPPCO to demonstrate compliance. Partial and/or ambiguous answers do not satisfy MDNR's responsibility to ensure resource protection and maintaining the public interest.

a) The Three Year Test Report

Agencies, and possibly UPPCO as well, are at a disadvantage regarding the ability to anticipate how the Dead River system will work now that Silver Lake is back in operation. As outlined in previous MDNR and MDEQ comments, the test period had numerous deviations, the details of UPPCO's model are unclear (see paragraph *b.*), and UPPCO has been largely unable or unwilling to support an operations plan: a) for more than a couple months and b) justified with data, analysis, and criteria that make clear what conditions, if any, would be cause for deviating from that plan.

b) Hydrologic Model

UPPCO has occasionally referred to using a model for the Dead River, for, among other things, justifying deviation requests. Commission staff referenced the development of a model in FERC's March 11, 2010 Order Modifying and Approving Article 405 Operations Monitoring Plan. MDNR has sought clarification numerous times on details of UPPCO's "hydrologic model;" what data are 'inputs' in the model, what are the assumptions of the model, what statistical framework is the model built on, and on the same path, what parameters are included and not included (how were these determined, with what sensitivities), what confidence is associated with model outputs, among others. Essentially, all attempts to answer the question "Does UPPCO have a predictive hydrologic model, what does it answer, and how does it work?" are avoided, or answered with a level of ambiguity that MDNR cannot accept, or are explanations of plans for operation (e.g. deviation requests) that merely allude to having used the model.

Figure 1 provides a simplified representation of how a hypothetical model might be developed. It is intended to point out some features that might be included in models such as that UPPCO has referenced. Figure 1 also speaks to some facets of model development, calibration and verification that would be useful in understanding model applications and efficacy.

If UPPCO has a predictive model that it is using, UPPCO should also be able to provide verification data similar to what other entities do for their predictions, to improve over time and know how much confidence to place in the outputs and under what circumstances. If UPPCO is using a non-predictive model, and is weighing it among other factors, those should be documented and tracked as well, and compared to what actually happened.

Because of the many ways models can be used, the many forms they can take and the components they consider, sharing the model, the context of its development and associated metadata would be part of a broader valuable conversation, and it is difficult to describe all the features of interest without having a firm grip on whether the model exists, how it is being used and what questions it is supposed to help answer.

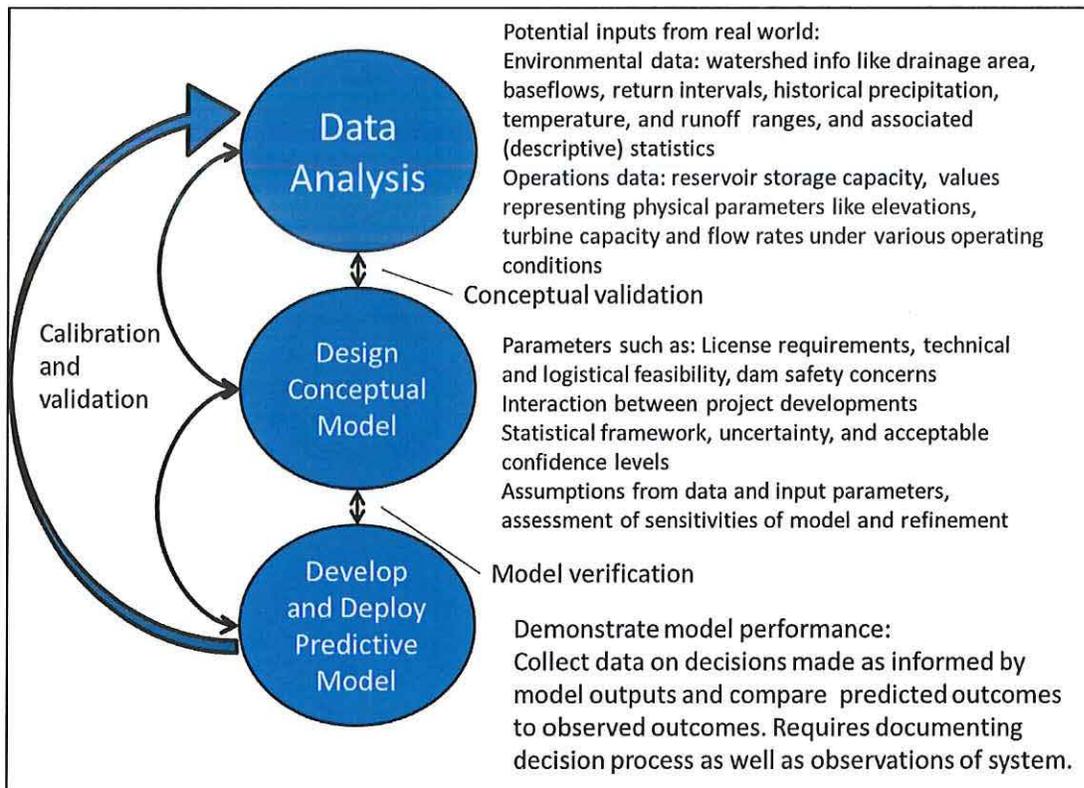


Figure 1: General representation of model development and resulting components of interest, including data inputs, parameters, assumptions, statistics, calibration and validation processes

c) Annual Agency Meeting

Thursday March 1, 2018 UPPCO held an Agency Meeting via conference call. For the benefit of the reader, MDNR wants to share what was included in the presentation for agencies. UPPCO presented a matrix (table) (Figure 2), another Table with 39 year data represented as probabilities (Figure_b3), and a graph (Figure_c4) to describe anticipated conditions and operations as a “summary of different scenarios run through a hydrologic model for the Dead River.”

License Condition	39 Year Data Review: # of Hoist Basin Events			2009			2010		
	Spilling	Not Reaching 1341' by 6/1	Entering Dry Year Consultation	Spill?	Reach 1341'?	Dry Year Consult ?	Spill?	Reach 1341'?	Dry Year Consult ?
As Written	27	2	16	No	Yes	Yes	No	No	Yes
1341' May SOMT HST	27	0	15	No	Yes	Yes	No	Yes	No
1335' April SOMT HST & 1341' May SOMT HST	26	2	16	No	Yes	Yes	No	No	Yes
1341' May SOMT HST & 1485' May/June SOMT SL LK	26	0	14	No	Yes	Yes	No	Yes	No

Figure 2: UPPCO 'Matrix' Left, 39 year data review compared to license conditions, Right (highlighted in yellow) 2009 and 2010 as representative years

The matrix UPPCO provided at the meeting was a table (Figure 2, Left) that described 39 years of historic data for Hoist. The table seemed to be intended as a summary and thus did not distinguish data representing events where deviations were requested, construction or other major changes to developments was occurring, weather events etc. The years of historical data were compared to license conditions, including potential start of month targets at Hoist, and resulting occurrences of A) Spilling, B) Not reaching 1341' by June, and C) entering Dry Year Consultation. It should be noted that the elevation for the instances that didn't reach 1341 is not provided, but is more than the cutoff for dry year consultation (based on the structure of the table). The table is devoid of environmental context (droughty years, precipitation patterns, etc.).

The second half of the table (Figure 2, Right) is of a different sort, representing two example years from the last 10years (2009 and 2010) which UPPCO described as being 'similar' to the current conditions on the ground. The criteria for 'similarity' seemed to be current snow water equivalent, time of year, and possibly elevations (that part wasn't clear because the elevations typically reflect license conditions, which were a subject of discussion re deviation requests).

A second table described the same data as Figure 2 Left, as probabilities (e.g. 16/39 =41%)

License Condition	Year Data Review: Probabilities of Hoist Bas		
	Spilling	Not Reaching 1341' by 6/1	Entering Dry Year Consultation
As Written	69.2%	5.1%	41.0%
1341' May SOMT HST	69.2%	0.0%	38.5%
1335' April SOMT HST & 1341' May SOMT HST	66.7%	5.1%	41.0%
1341' May SOMT HST & 1485' May/June SOMT SL LK	66.7%	0.0%	35.9%

Figure 3: Same data as Figure 2, Left, expressed as % of 39 year observations

Again, this doesn't tell agency staff about the context of those years. It seems to tell whether applying what happened on the ground in those years to different standards would have been expected to cause one of the three outcomes provided in the table. It is not clear whether the data period included times when Silver Lake was not available, for example.

UPPCO presented the following graph, as an image, to aid in describing the outputs of its 'hydrologic model:'

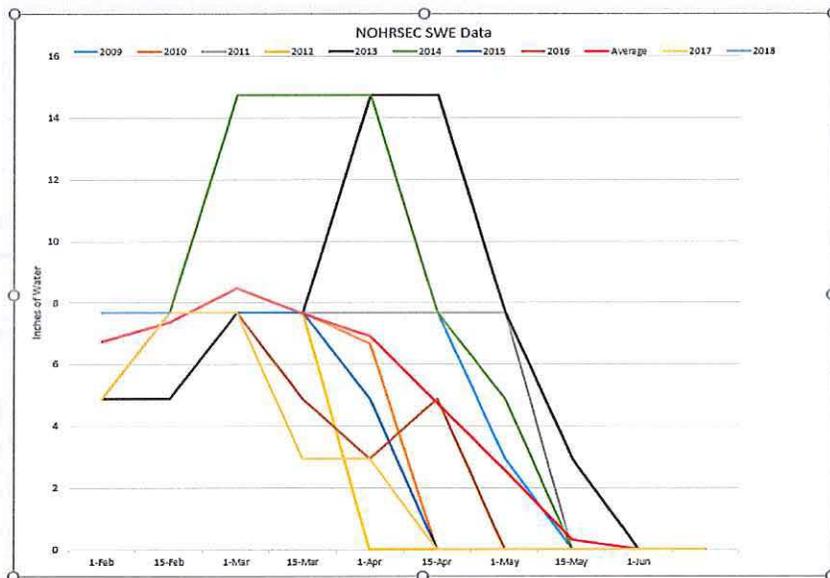


Figure 4: National Oceanic and Atmospheric Administration, National Operational Hydrologic Remote Sensing Center Snow Water Equivalent vs time for a February – June time period

The graph in Figure 4 was presented as an image which prevented agency staff from being able to trace overlapping series. This graph has some useful components (showing variability in when most of the water on the landscape as snowpack melted in the last 10 or so years), but doesn't tell agency staff much about what this year might look like. At the time of the meeting-March 1, the majority of the series were potentially 'similar.' At the time UPPCO requested comments on a planned deviation; no update was given to suggest any of the options had been eliminated. There is no way of knowing whether more data would follow similar paths, or what conclusions agency staff are supposed to draw from this presentation, or how it relates to the tables above, or the model UPPCO refers to, which Commission staff incorporated in the 2010 Order.

d) *Formal Request for Deviations, Beginning March 19th*

In a March 19th email, UPPCO requested agency comments on the following planned deviations at Silver Lake and Hoist:

1. Raise start of month headwater target elevation at SLSB to 1,482 ft NGVD for the months of May and June; and
2. Raise start of month headwater target elevation at DRSB to 1,341 ft NGVD for the month of May.
- And 3. UPPCO recommends continuing to release minimum flows from *SLSB if dry-year consultation* becomes necessary before spring runoff. [emphasis added]

Regarding this third point, while agencies would likely support continuing to release minimum flows from Silver Lake, it is worth mentioning that UPPCO recommends this hypothetical action based on the current elevation at Silver Lake potentially leading to Dry Year Consultations. It seems UPPCO could have predicted this as a possible outcome (to be avoided) when it was releasing 75 cfs in February.

MDNR is not aware of whether UPPCO is entering a dry year consultation, and so wishes to seek clarification on this recommendation. For example, it is not clear how MDNR is supposed to know what inflows are to the system per Section 1.3 of UPPCO's Water Quality Certification (minimum for April, for example is 25 cfs or inflows whichever is less). It is not clear if UPPCO is already releasing minimums at Silver Lake, and it seems like a dry year consultation would provide an opportunity to discuss the provisions of UPPCO's third request.

UPPCO's email also included, after deviation requests 1 and 2:

"Furthermore, regardless of the above requested planned deviations, it appears *if additional precipitation is not received in late March*, it is likely we will not be able to maintain an elevation of 1341.0 ft NGVD while releasing minimum flows during the recreation season at the DRSB and will be entering dry-year consultation during the summer." [emphasis added]

MDNR and MDEQ attempted to get clarification on March 22, 2018, stating that in order to approve UPPCO's request, additional information should be provided and consultation should take place. MDNR was interested in understanding UPPCO's intentions for the whole summer season, in part because previous operations did not seem to make sense in the context of the proposed deviations. MDNR posed questions about the 'model,' and the graphs above, and invited UPPCO to correct any misunderstandings.

MDNR and MDEQ requested that UPPCO:

1. Rewrite the Planned Deviation Request to be consistent with the three year test report, and provide more discussion and more data analysis.
2. The plan should include the whole summer season instead of limiting planning to May and June only.
3. The plan should include all the proactive actions for both Silver lake and Hoist.
4. Schedule a conference call with the MDEQ and MDNR prior the submission of your plan.

UPPCO interpreted requests for clarification and information as a denial, and reiterated that assertion after agency staff attempted to clear up the misunderstanding. On March 28, UPPCO sent an email to MDNR and MDEQ providing partial answers to select MDNR questions, and seems to have had a conversation with MDEQ between March 22 and March 28, but UPPCO's answers are very unlikely to have addressed what MDEQ was most concerned with, because UPPCO mostly restated what the license says, which MDEQ is well aware of.

UPPCO also added that "UPPCO will always operate its projects according to the license requirements. Therefore, our operation plan is the same regardless of what the target elevations are." While it reasonable to expect UPPCO will strive to meet targets, a primary purpose of this discussion is what those targets are, how targets impacts the duration and severity of extreme high or low water in impoundments, and ability to provide minimum flows, and whether additional deviations will be requested because of implications of those operations decisions. Introducing unnecessary confusion as to what agencies are requesting when we discuss operations plans. Even simple questions, like "Does the recent snowstorm Easter weekend [i.e. late March] which resulted in several inches of snow being dropped in the Marquette area change UPPCO's outlook on the forecast and need for deviations?" become fraught. UPPCO said they would notify agencies if anything appreciably changed their understanding of the forecast and/or their request, so MDNR is assuming UPPCO will not be modifying its request as of today. In short, many of UPPCO's statements in email and verbally

are confusing, they may omit important details, shift the meaning or intent of terms of discussion, or lack internal (and external) validity and consistency over time.

e) Earlier Responses on High Levels at Hoist

UPPCO noted in discussions about the Test Report, that pre-runoff decisions of UPPCO are the primary determinant of the success of operations in reducing extreme water fluctuations at Hoist:

Email January 11, 2018:

Agency Comment:

This summer, and I believe rather frequently in the recent past, the elevation at Hoist has been substantially higher than the targets for extended periods (whether meeting the monthly targets or not).

I am interested in whether UPPCO expects the frequency or duration of deviations where Hoist is above its targets to change (increase) under the scenario UPPCO has proposed for operations. As I understand it, there are implications for high water as well as low water elevations at Hoist for resource users and landowners, and that from a fisheries standpoint we are additionally concerned about the impact of elevation fluctuations during important spawning and recruitment periods, as well as due to concerns about erosion.

UPPCO Response:

Based upon the Hydraulic model, the recommendations contained in the January 4, 2018 revised report are not expected to increase the frequency or durations of exceedances of the required targets at DRSB (Hoist). Please remember, SLSB provides less than 20% of the inflow into the DRSB. The revised report recommends target elevations at SLSB that are expected to augment inflows to DRSB and help maintain the DRSB target elevation when total inflows to the DRSB plus evaporation become less than the required 100 cfs minimum flow release from the DRSB.

The report also recommends a meeting of the stakeholders prior to spring runoff. During this meeting, **the amount of drawdown** in anticipation of spring runoff to avoid raising the DRSB significantly above the summer recreation target is decided. **The pre-spring runoff actions at DRSB are the most important actions to avoid raising the DRSB significantly above the summer recreation target.** *[emphasis added]*.

If it is the case that Hoist typically needs to be drawn down to avoid overshooting targets, how does that fit with requesting to raise the target?

3) Select Unresolved Issues Relevant to Deviation Request Arising from Formal and Informal Correspondence

Among concerns with the current proposal are potential effects of operations on elevations at Hoist Basin; both in terms of avoiding low levels which would negatively impact recreation, fish recruitment and cause other disturbance, and avoiding high elevations and severe fluctuations that can cause erosion, or other detrimental processes for aquatic life and water quality (see details under "Water Level Fluctuation Concerns").

a) Hoist as Storage

In the recent past (e.g. Request March 17, 2016) Hoist was proposed for use as storage, with elevations purposefully set to 1342-1343. The rationale was to be proactive because of weak snowpack following an early warm up (and associated melt and runoff) and the lack of availability of Silver Lake. Now that Silver Lake is available, this situation should be avoided. It seems reasonable to seek assurances that exceptions and deviations do not continue to be such a common occurrence with the Dead River Project.

b) Availability of Low Level Outlet

There has been considerable dialogue about the Low Level Outlet at Hoist. The 2010 FERC Order states:

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" only to include increased turbine generation.

Despite this, UPPCO has refused to acknowledge the full range of conditions outlined above for use of the low level outlet. When MDNR inquired about the use of the LLO to relieve flows in a hypothetical situation, UPPCO did not offer an example for when the LLO would be used outside of power outages:

MDNR Comment (3/23/18 email):

If in May of 2018, we're in a similar position as May of 2017 (May 8, 2017 for example the elevation at Hoist was at 1344.72 and 402cfs) will the LLO be used?"

UPPCO response:

No. The low level outlet at the Hoist facility is only used to maintain minimum flows during powerhouse outages and during extreme high water events.

c) Erosion Report

UPPCO provided and MDNR commented on an erosion report for the Dead River. This report and the outstanding questions from it relate to the relationship between reservoir fluctuations and erosion concerns. The concerns stem from the biological implications of erosion and sedimentation, concerns of riparians, and also the broader concern about poor monitoring practices meaning assurance that 'no adverse resource impact' would be observed. If folks are not able to measure it, it is assumed to not exist, even if the attempts to observe and measure are half-hearted

d) Water Level Fluctuation Concerns

The likely consequences of extreme low water at Hoist include:

- Disturbance of regular fish movement patterns
 - In past this has included creation of a stranding pond west of Boise Creek.
- Potential loss of mussels and other slower-moving critters
- Interference with access to critical spawning and rearing habitat

- Potential accelerated erosion
- Loss of recreational opportunity
- Potential consequences for downstream resources
- Diminished effectiveness of ongoing fisheries management and improvement efforts

The likely consequences of water level fluctuations at Hoist include:

- Accelerated erosion
- Dislodging of stumps and woody material
 - Loss of LWD is detrimental to fish habitat, and can create conditions many residents regard as hazardous or a nuisance
- Disturbance of critical spawning habitat
- Habitat degradation through sedimentation
- Increased likelihood of AIS establishment
- Disturbance of fish movement patterns, including inability to reach spawning habitat and food resources
- Recruitment failure of aquatic organisms
- Interference with ongoing fisheries management objectives
 - For example, May is when walleye (*Sander vitreus*) are typically spawning

Regarding consequences of water level fluctuations at Silver Lake:

The resource agencies' ability to understand and predict the effects of operations at Silver Lake are limited due to uncertainty as to whether UPPCO will request additional deviations, inadequacies in the Test Report and uncertainties stemming from the refill occurring May 2017, however, if SLSB targets are adjusted in April-October without a plan and adequate consultation (i.e. more than 5 days' notice), this could pose a detrimental effect on aquatic organism recruitment, fish spawning, and survival during fall burrowing for amphibians and reptiles.

e) Ability to Proactively Manage Fishery

Further, the current circumstance limits the ability to coordinate fisheries management efforts and planned operations. According to a fisheries manager responsible for the system, it would be ideal to keep the elevation at Silver Lake down until mid-May to disfavor northern pike recruitment, and then to keep levels stable May 30 to July 1 to favor centrarchid spawning and recruitment, which is the fisheries management objective for SLSB. In fact, significant investment has been made to reestablish the bluegill (*Lepomis macrochirus*) fishery at SLSB, and holding the elevations during the May 30-July 1 timeframe would further benefit the broader Dead River System as it would facilitate forage minnow spawning and subsequent migration of those fishes to the rest of the system.

Conclusion:

MDNR wants to foster a proactive, sensible, and transparent strategy. MDNR disagrees with UPPCO's approach (see above context) but did not deny UPPCO's request, in hopes that UPPCO is correct that allowing the deviations will decrease the likelihood of negative impacts of either extreme elevations or fluctuations in the Dead River and at Hoist. It is also MDNR's hope that this discussion leads to the above issues being resolved, and that UPPCO is more available to work with MDNR and MDEQ on fisheries management, resource protection, and other concerns relating to the public interest in the Dead River.

Mr. Virgil Schlorke, Upper Peninsula Power Company
Dead River P-10855 Deviation Requests

April 4, 2018

I am looking forward to improved information sharing and communication. Thank you for the opportunity to comment. If you have any questions or feel additional clarification would help, please feel free to contact me at:

MARQUETTE CUSTOMER SERVICE CENTER
MICHIGAN DEPARTMENT OF NATURAL RESOURCES
1990 US HWY 41 SOUTH
MARQUETTE MI 49855

Sincerely,



Elle Gulotty
Resource Analyst
Habitat Management Unit
FISHERIES DIVISION
(906) 228-6561 x 3002

cc: Burr Fisher, USFWS, E. Lansing
Amira Oun, Michigan DEQ, Lansing, MI
Jessica Mistak, HMU Supervisor, Escanaba Field Office, Gladstone MI

Joshua Ball

MDEQ FINAL RESPONSE + APPROVAL

From: Oun, Amira (DEQ) <OunA@michigan.gov>
Sent: Wednesday, April 11, 2018 9:07 AM
To: Joshua Ball; Elle Gulotty; Burr Fisher; Jim Grundstrom; Virgil E. Schlorke
Cc: Lee Woods; Kenneth M. Carruthers; GenerationAdmin
Subject: RE: Dead River Hydroelectric Project (P-10855): Article 402 Planned Deviation Request
Attachments: UPPCO HYDROELECTRIC PROJECT D- MDEQ COMMENTS - April 2017.pdf

WARNING: This email was sent from an external address. Exercise caution when opening links or attachments.

All,

Please find the attached file , the MDEQ approval of the Planned Deviation Request. Let me know if you have any questions.

*Amira Oun, PhD
Environmental Engineer
Michigan Department of Environmental Quality
Water Resource Division
517-284-5541*



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



C. HEIDI GREYER
DIRECTOR

April 11, 2018

VIA E-MAIL

Mr. Virgil Schlorke
Upper Peninsula Power Company
1002 Harbor Hills Drive
Marquette, Michigan 49855

Dear Mr. Schlorke:

SUBJECT: Dead River Hydroelectric Project – Silver Lake, Hoist, and McClure Developments
P-10855: Planned Deviation Request of Start of Month Targets - Article 402-
Michigan Department of Environmental Quality (MDEQ) Comments

License Requirements

Per Articles 402 and 403 of the license issued October 4, 2002, for the Dead River Hydroelectric Project, and amended January 24, 2006, and September 1, 2011, the Upper Peninsula Power Company (UPPCO) is required to operate the existing project impoundments to achieve the start of month target elevations and maintain the required minimum flows, respectively, at each of the project developments. Article 402, in part, requires the UPPCO to maintain the Dead River Storage Basin (DRSB) and Silver Lake Storage Basin (SLSB) above the minimum elevation of 1,339 feet NGVD and 1478.5 feet NGVD, respectively, in May 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, then the UPPCO must take all reasonable steps to lower the impoundment to the target elevation. The UPPCO may temporarily modify water surface elevations and releases from the project if required by operating emergencies beyond the UPPCO's control, or for short periods upon mutual agreement between the UPPCO, MDEQ, Michigan Department of Natural Resources (MDNR), and the U.S. Fish and Wildlife Service (USFWS). Consultations during the adverse conditions shall continue, following a mutually agreed upon schedule with the MDEQ, MDNR, and USFWS. Upon cessation of the adverse conditions, the UPPCO must resume the normal project operating water levels and releases.

Ordering paragraph (D) of the Order Modifying and Approving Article 405 Operations Monitoring Plan (2010 Order), states that in the event natural conditions cause the Hoist Reservoir to exceed an elevation of 1,341 feet NGVD, the UPPCO 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. The UPPCO must implement one or both measures based on the circumstances of the extreme high water.

UPPCO's Planned Deviations Request and MDEQ Comments

On March 19, 2018, the UPPCO submitted a request for planned deviations at SLSB and DRSB. The MDEQ approves the following:

- 1) Raise the start of month headwater target elevation at SLSB to 1,482 feet NGVD for the months of May and June.
- 2) Raise the start of month headwater target elevation at DRSB to 1,341 feet NGVD for the month of May.

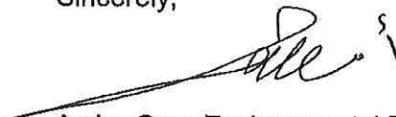
While the UPPCO is waiting for a response from the Federal Energy Regulatory Commission on the Three-Year Test Report, the MDEQ recommends the following:

The UPPCO should continue the assessment of current snowpack information and weather forecasts and send a weekly e-mail to update the MDEQ and MDNR about the water level in both the SLSB and DRSB, no operation plan changes to be considered, and the UPPCO should operate its projects according to the license requirements.

Since Silver Lake is now available, the MDEQ expects the UPPCO to use this year's data to develop a long-term operation plan. Alternatively, the UPPCO could request a permanent change to Silver Lake start of month targets and determine the optimum minimum elevations to reduce deviation requests.

The MDEQ appreciates the opportunity to comment on the UPPCO's request. If you have any questions, please contact me at 517-284-5541; ouna@michigan.gov; or MDEQ, Water Resources Division, P.O. Box 30458, Lansing, Michigan 48909-7958.

Sincerely,



Amira Oun, Environmental Engineer
Surface Water Assessment Section
Water Resources Division

cc: Ms. Elle Gulotty, MDNR
Mr. Gary Kohlhepp, MDEQ
Section 401 File

Joshua Ball

DRCI SUPPORT OF UPPCO REQUEST

From: Jim Grundstrom <jimgrundstrom@freichevy.com>
Sent: Wednesday, April 11, 2018 2:10 PM
To: Elle Gulotty; Joshua Ball; Burr Fisher; Kenneth M. Carruthers; Jim Grundstrom; Virgil E. Schlorke; Woods, Lee (offthegrid906@gmail.com); GenerationAdmin; Oun, Amira (DEQ)
Subject: Dead River Campers, Inc. thoughts to be shared concerning the Hoist Storage Basin
Attachments: SKMBT_28318041214010.pdf

WARNING: This email was sent from an external address. Exercise caution when opening links or attachments.

Good afternoon to you all from Dead River Campers, Inc. Board of Directors

In the attachment is a letter to Elle, and shared with you all concerning the Dead River Campers, Inc. thoughts on the Hoist Storage Basin from our perspective. We have 400 neighbors, who are also shareholders of Dead River Campers, Inc. One of the many treasures that the Storage Basin provides is a wonderful body of water to enjoy in the months of late May, June, July and August. We understand the very challenging balance activity it takes to manage recreation, generation, and evaporation. To provide all shareholders with an appropriate volume of water to enjoy and use their watercrafts is not an easy task, especially in the normally shallow portions of the basin.

We are sharing our perspective from the Board's position as an informational piece, in hopes that it helps all parties understand our position regarding the management of the water elevation during our summer months.

Thank you so very much for all your help allowing summer fun and generation to take place in harmony.

Jim Grundstrom
President

From: 2300@scannedfile.com [mailto:2300@scannedfile.com]
Sent: Thursday, April 12, 2018 2:02 PM
To: Jim Grundstrom <jimgrundstrom@freichevy.com>
Subject: Message from KMBT_283



Dead River Campers, Inc.

213 Pearl Street

P.O. Box 323

Ishpeming, Michigan 49849

Office Phone: 906-485-1975

Email: drcicampers@gmail.com

www.deadrivercampersinc.com

April 11, 2018

Ms. Elle Gulotty
Resource Analyst
Habitat Management Unit
Michigan Department of Natural Resources
1990 US Highway 41 South
Marquette, MI 49855

RE: Dead River Hydroelectric Project – Requested Planned Deviations of Start of Month Target – Article 402 (P-10855)

Dear Ms. Gulotty:

On behalf of the Dead River Campers, Inc. Board of Directors, representing nearly 400 camper/shareholders on and around the Hoist Storage Basin, we would like to present the following observations related to UPPCO's requested license deviations:

There seems to be three reoccurring issues in your correspondences and we would like to offer our view on them.

Utilizing the Low-Level Outlet to lower the Basin in times of "High Water." It's the board's opinion that this only be utilized when water cannot be passed through the turbines, or extremely high water which creates an emergency situation. Based on our water power lease agreement with UPPCO, 1346 appears to be the project boundary. Dumping water prematurely floods out areas below to Lake Superior, wastes a valuable resource and causes low water later in the summer, when the recreation season is in peak activity. It is critical to our shareholders that we have target elevation water or slightly higher May 15th – August.

Erosion. Erosion is inevitable during times of high and low water, especially with boat traffic. This board has been presented with few complaints of erosion to date. It should also be noted; the basin was originally designed for and ran at elevations up to and greater than 1347. This elevation was utilized throughout the 60+ years Cleveland Cliffs Iron Company ran the impoundment. To put it into perspective, an elevation of 1343 is actually four feet lower than the original spill way.

License deviations. With every winter and spring being different, and a static license, we feel there is real value in license deviations. UPPCO has presented sound reasoning for all requested deviations and every one was given board approval. The 1342-1343 deviation of March 2016, which you referenced is a perfect example as this particular deviation was **unanimously** approved. Spring rains cannot be accurately predicted, therefore a deviation to the high side is preferred. Once the water from the spring season and Silver Lake are gone, there is no recovery available to save our summer boating season.

We find it puzzling that this previously seamless process has become so convoluted. If the elected board can be of any assistance, please do not hesitate to contact us.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim Grundstrom", with a large, sweeping flourish extending to the right.

Jim Grundstrom
DRCI President

Joshua Ball

UPDATE EMAIL #1

From: Joshua Ball
Sent: Monday, April 16, 2018 4:00 PM
To: Burr Fisher; Elle Gulotty; 'Oun, Amira (DEQ)'; Gene Mensch; 'Jim Grundstrom'
Cc: 'Lee Woods'; Virgil E. Schlorke; Kenneth M. Carruthers
Subject: UPDATE: Dry Year Consultation and Planned Deviations 4/16/18
Attachments: 20180416 SLSB Agency Dry Year Consultation Conference call minutes.docx

Good Afternoon All,

For those that were able to take part in today's conference call in regards to the SLSB dry year consultation, thank you. For those that were unable to attend, I have attached a summary of the discussion.

Over the weekend a large snow storm has impacted the Dead River watershed. The amount of snow received varies from source to source, but average between 16-24", with snow still falling. The recent weather will likely have an impact on the Silver Lake Storage Basin and Hoist Storage Basin. We are still evaluating the data to determine what the total impacts will be, but we currently know:

- It is unlikely Silver Lake will hit the May start of month headwater target change of 1482'
 - The spring storm and extended period of cold weather does not give us enough time to reach this in 14 days
- It is unlikely Hoist will hit the May start of month headwater target change of 1341'
 - The spring storm and extended period of cold weather does not give us enough time to reach this in 14 days
- The ~2" of water received as part of this storm will have positive impacts on future months
 - Silver lake has an increased potential of reaching the June SOMT of 1482'
 - The Hoist basin will likely fill to above the 1341' target, allowing increased duration of summer recreation levels

The last physical reading at the SLSB was taken on Friday 4/13 and recorded as 1476.85, a 0.04' increase since the Wednesday reading. Outflows remain at 10 CFS. A physical reading will again be taking on Tuesday (weather depending). The current 10 day weather prediction according to Accuweather.com shows temperatures trending to above freezing during the day starting Thursday 4/19 and continuing through the 10 day period. As inflows increase (determined by headwater elevation changes), outflows will be increased to match in 5 CFS increments.

The Hoist headwater is currently at 1337.37, with outflows at 103 CFS. Outflows will remain at this level until inflows increase and the May minimum elevation is met.

UPPCO will again send an update email to this group next Monday, April 23rd.

If you have any questions, please feel free to reach out.

Regards,

Josh Ball

Generation Supervisor

Upper Peninsula Power Company

500 N. Washington St.

Ishpeming, MI 49849

Office: 906-485-2419

Mobile: 906-869-1798

jball@upppo.com

UPDATE EMAIL #2

Joshua Ball

From: Joshua Ball
Sent: Monday, April 23, 2018 11:49 AM
To: Burr Fisher; Elle Gulotty; Oun, Amira (DEQ); Gene Mensch; Jim Grundstrom
Cc: Lee Woods; Virgil E. Schlorke; Kenneth M. Carruthers; GenerationAdmin
Subject: UPDATE: Dead River Dry Year Consultation and Planned Deviations 4/23/18
Attachments: Spring melt

Happy Monday All,

The most recent physical reading at the SLSB was taken this morning (4/23) and recorded as 1477.16', thus ending the current dry year consolation period. Since our update last week, headwater levels have shown positive trending, with readings as follows:

- 4/13 – 1476.85
- 4/18 – 1476.98
- 4/23 – 1477.16

As of this morning, UPPCO has increased SLSB outflows to 15 CFS (a 5 CFS increase) in an effort to best match inflows. Local headwater readings will be taken later in the week to determine if addition flow changes are required. At a minimum, UPPCO will increase outflows on Monday 4/30 to 20 CFS to meet the May minimum flow requirements.

The Hoist headwater is currently at 1337.72', steadily trending up, with outflows at 103 CFS. Outflows will be increased today in an effort to best prepare for the spring melt, with peak inflows predicted for the early part of the week. UPPCO will be closely monitoring the spring melt conditions and the effect on the Hoist headwater elevations, and will adjust outflows to best trend towards the May/June Target Elevation of 1341'.

I have attached an email from the NWS in regards to weather predictions for the next 10 days, which UPPCO feels supports the efforts to increase Hoist outflows.

UPPCO will again send an update email to this group next Monday, April 30th.

If you have any questions, please feel free to reach out.

Regards,

Josh Ball

Generation Supervisor

Upper Peninsula Power Company

500 N. Washington St.

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ATTACHMENT TO UPDATE EMAIL #2

Joshua Ball

From: Matthew Zika - NOAA Federal <matthew.zika@noaa.gov>
Sent: Friday, April 20, 2018 10:00 AM
To: Joshua Ball; Virgil E. Schlorke; James R. Melchiori
Subject: Spring melt

WARNING: This email was sent from an external address. Exercise caution when opening links or attachments.

The long awaited melt is finally here.

Despite last weekend's winter blast, our overall concerns for any significant issues at least through the next 10 days remain pretty low. You will definitely start to notice increased inflows this weekend.

Temperature trends over the next 7-10 days continue to support a steady but controlled melt off with daytime temperatures in the 50s (maybe lower/mid 60s Sunday through Tuesday) but overnight lows falling back into the upper 20s and 30s. In addition, dewpoints will remain in the 20s and 30s during that time, so even on the warmer days the air will remain dry tempering the melting process some. Temperatures from Sunday through next Wednesday will stay above freezing, so that is likely when the peak in runoff will occur.

Total rainfall amounts over the next 7-10 days will be less than a half inch across the U.P. with any potential for slight higher amounts over the far west.

2008 seems to be our best analog year given current snow depth/SWEs and temperature/precipitation forecasts.

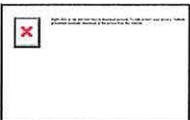
The potential exists for a pretty mild stretch by the first week of May before the overall pattern settles back into one favoring slightly below normal temperatures for much of May (but nothing like the departures we saw through the first 3 weeks of April). There is no clear signal for precipitation above or below normal through May.

If you have any questions, let me know.

Matt

--

Matt Zika
Warning Coordination Meteorologist
National Weather Service Marquette
906-475-5782 ext. 726



MONR RESPONSE TO UPDATE EMAIL #2

Joshua Ball

From: Gulotty, Elle (DNR) <GulottyE@michigan.gov>
Sent: Monday, April 23, 2018 1:03 PM
To: Joshua Ball; Burr Fisher; Oun, Amira (DEQ); Gene Mensch; Jim Grundstrom
Cc: Lee Woods; Virgil E. Schlorke; Kenneth M. Carruthers; GenerationAdmin
Subject: RE: UPDATE: Dead River Dry Year Consultation and Planned Deviations 4/23/18

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Thank you for the update Josh.

When you say outflows will be increased, do you mean UPPCO's going to generate at a higher rate? Is the goal to keep the elevation flat at Hoist until closer to peak runoff?

Also, the website says outflows are 0 at Hoist right now (13:00), Do you know what's going on with that?

Elle

MDNR RESPONSE #2 TO EMAIL UPDATE #2

Joshua Ball

From: Gulotty, Elle (DNR) <GulottyE@michigan.gov>
Sent: Monday, April 23, 2018 1:54 PM
To: Joshua Ball; Burr Fisher; Oun, Amira (DEQ); Gene Mensch; Jim Grundstrom
Cc: Lee Woods; Virgil E. Schlorke; Kenneth M. Carruthers; GenerationAdmin
Subject: RE: UPDATE: Dead River Dry Year Consultation and Planned Deviations 4/23/18
Attachments: 20180423_1300_generation hoist 0.jpg

WARNING: This email was sent from an external address. Exercise caution when opening links or attachments.

Hi folks,

Please let me know if I have missed something, and provide clarification on the first two topics I inquired about.

Regarding the website and flows at Hoist. It now shows a non-zero value. Maybe just an error in the system?

My understanding:

- a) The website updates frequently and you all may not have seen what I saw, so I am including a screenshot
- b) There is a disclaimer at the top of the website about the accuracy of the data
- c) Two of the columns, 4 and 12 hour change, are not meaningful (following from my inquiry the other day; these have shown the same values for a long time)

Thank you,
Elle

Water Levels

04/23/2018 13:00:00 EST

Dead River			4-Hour Change	12-Hour Change
Silver Lake				
Head Water Level	1477.13	feet	-0.13 ↓	+0.01 ↑
Tail Water Level	1457.54	feet	+0.01 ↑	0.00
Total Flow	15.00	cfs	+0.01 ↑	0.00
Hoist				
Head Water Level	1337.73	feet	0.00	-0.02 ↓
Tail Water Level	1196.82	feet	0.00	+0.01 ↑
Total Flow	0	cfs	0	0
McClure				
Head Water Level	1195.89	feet	-0.01 ↓	-0.04 ↓
Total Flow	298	cfs	-1 ↓	-3 ↓

Joshua Ball

UPPCO FOLLOW-UP TO MDNR RESPONSES

From: Joshua Ball
Sent: Monday, April 23, 2018 2:37 PM
To: Gulotty, Elle (DNR); Burr Fisher; Oun, Amira (DEQ); Gene Mensch; Jim Grundstrom
Cc: Lee Woods; Virgil E. Schlorke; Kenneth M. Carruthers; GenerationAdmin
Subject: RE: UPDATE: Dead River Dry Year Consultation and Planned Deviations 4/23/18

Elle,

Thanks for taking my call this afternoon. Per our discussion:

UPPCO's plan is to increase outflows from the Hoist basin by increasing generation. Our goal is to match inflows the best we can to try and minimize a rapid headwater increase. Obviously there will be a point when inflows are greater than max outflows, and the headwater will continue to rise until spring run off is complete.

As for the 0 flows at Hoist, we had a 20 min plant trip while trying to start our second unit. Flows have been restored.

If you need anything further please let me know.

Josh Ball

Generation Supervisor

Upper Peninsula Power Company

500 N. Washington St.

Ishpeming, MI 49849

Office: 906-485-2419

Mobile: 906-869-1798

jball@uppcoco.com

www.uppcoco.com

Joshua Ball

UPDATE EMAIL #3

From: Joshua Ball
Sent: Monday, April 30, 2018 11:55 AM
To: Burr Fisher; Elle Gulotty; Oun, Amira (DEQ); Gene Mensch; Jim Grundstrom
Cc: Lee Woods; Virgil E. Schlorke; Kenneth M. Carruthers; GenerationAdmin
Subject: UPDATE: Dead River System Planned Deviations 4/30/18

Hello All,

On Friday morning, a local headwater reading was taken at the SLSB and recorded as 1477.86'. UPPCO increased outflows to 20 CFS (a 5 CFS increase) in an effort to best match inflows. The current elevation (4/30) from our SCADA systems is reading 1478.5'. UPPCO will continue to strive to meet the proposed target elevation of 1482' for the month of June as part of the requested planned deviation. There are currently no plans to change outflows during the next week.

The Hoist headwater is currently at 1339.35', steadily trending up, with outflows at 315 CFS (near the maximum of 330 CFS). Snow water equivalents are declining, with much of the watershed in the 2-6" range (see link to today's graph at the end of the email). Due to the late melt, the planned deviation for a headwater elevation of 1341' for the start of May was unsuccessful, and therefore the planned deviation is complete. UPPCO will continue to strive to meet a headwater elevation of 1341' for the start of June. Outflows will be adjusted if inflow trends change (determined by rate of change in headwater elevation).

UPPCO will send an update email to this group next Monday, May 7th, as the planned deviation for Silver Lake remains active.

If you have any questions, please feel free to reach out.

Regards,

Josh Ball

Generation Supervisor

Upper Peninsula Power Company

500 N. Washington St.

Ishpeming, MI 49849

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Mobile: 906-869-1798

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www.uppc.com

Link to current snow water equivalent graph:

http://www.nohrsc.noaa.gov/interactive/html/map.html?ql=station&zoom=&loc=46.5162+N%2C+88.0379+W&var=ssm_swe&dy=2018&dm=4&dd=30&dh=18&snap=1&o1=1&o5=1&o6=1&o11=1&o9=1&o13=1&lbl=m&o14=1&o7=1&mode=pan&extents=us&min_x=-88.075000000002&min_y=46.358333333329&max_x=-87.283333333335&max_y=46.866666666662&coord_x=-87.6791666666685&coord_y=46.6124999999955&zbox_n=&zbox_s=&zbox_e=&zbox_w=&metric=0&shdvar=shading&palette=1&width=1100&height=700&nw=1100&nh=700&h_o=0&font=0&js=1&uc=0

Joshua Ball

UPDATE EMAIL #4

From: Joshua Ball
Sent: Monday, May 07, 2018 9:41 AM
To: Elle Gulotty; Scott_Hicks@fws.gov; Oun, Amira (DEQ); Gene Mensch; Jim Grundstrom
Cc: Lee Woods; Virgil E. Schlorke; Kenneth M. Carruthers; GenerationAdmin
Subject: UPDATE: Dead River System Planned Deviations 5/7/18

Good Morning All,

On Thursday 5/3, a local headwater reading was taken at the SLSB and recorded as 1480.25' with outflows remaining at 20 CFS. The current elevation (5/7) from our SCADA systems is reading 1481.40'. UPPCO will continue to strive to meet the proposed target elevation of 1482' for the month of June as part of the requested planned deviation. There are currently no plans to change outflows during the next week. It appears we are nearing the end of spring runoff as snowpack is gone and flows in auxiliary streams that enter the Dead River System are diminishing.

The Hoist headwater is currently at 1342.82', with outflows at 325 CFS. UPPCO will continue to strive to meet a headwater elevation of 1341' for the start of June. Outflows will be adjusted if inflow trends change (determined by rate of change in headwater elevation).

UPPCO will send an update email to this group next Monday, May 14th, as the planned deviation for Silver Lake remains active.

If you have any questions, please feel free to reach out.

Regards,

Josh Ball
Generation Supervisor
Upper Peninsula Power Company
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Joshua Ball

UPDATE EMAIL #5

From: Joshua Ball
Sent: Monday, May 14, 2018 7:51 AM
To: Elle Gulotty; Scott_Hicks@fws.gov; Oun, Amira (DEQ); Gene Mensch; Jim Grundstrom
Cc: Lee Woods; Virgil E. Schlorke; Kenneth M. Carruthers; GenerationAdmin
Subject: UPDATE: Dead River System Planned Deviations 5/14/18

Good Morning,

On Thursday 5/10, a local headwater reading was taken at the SLSB and recorded as 1481.61' with outflows remaining at 20 CFS. The current elevation (5/14) from our SCADA systems is reading 1482.03'. UPPCO will continue to strive to meet the proposed target elevation of 1482' for the month of June as part of the requested planned deviation. There are currently no plans to change outflows during the next week as we are at the end of spring runoff period and will be striving to hold this water in the storage basin.

The Hoist headwater is currently at 1342.80', with outflows at 335 CFS. UPPCO will continue to strive to meet a headwater elevation of 1341' for the start of June.

UPPCO will send an update email to this group next Monday, May 21th, as the planned deviation for Silver Lake remains active.

If you have any questions, please feel free to reach out.

Regards,

Josh Ball
Generation Supervisor
Upper Peninsula Power Company
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UPDATE EMAIL #6

REQUEST FOR EXTENDED PLANNED DEVIATION AT HOIST

Joshua Ball

From: Joshua Ball
Sent: Monday, May 21, 2018 12:53 PM
To: Elle Gulotty; Scott_Hicks@fws.gov; Oun, Amira (DEQ); Gene Mensch; Jim Grundstrom
Cc: Virgil E. Schlorke; Kenneth M. Carruthers; GenerationAdmin
Subject: Dead River Update and Request for Planned Deviation
Attachments: SKMBT_28318051910230.pdf

Good Afternoon,

The current elevation at the SLSB is 1481.97' and outflows are at 20 CFS. The Hoist headwater elevation is currently at 1341.92', with outflows at 335 CFS.

With spring runoff now over, the last 2 weeks have been very dry along the Dead River watershed. The current month to date precipitation levels are 2.6" below average (according to accuweather.com: <https://www.accuweather.com/en/us/negaunee-township-mi/49866/month/2638767?view=table>). With a long term forecast showing minimal precipitation through the end of May, UPPCO proposes a planned deviation to the start of month headwater elevation for June at the Hoist storage basin, raising the target to 1342'. This would allow storage of water in the system in hopes to extend the use of water during the recreation season. With increasing the June SoMT, UPPCO is reducing the risk of entering dry year consultation later in the summer. UPPCO's request for a planned deviation is in conjunction with the attached letter sent out on Friday May 18th from the Dead River Campers, Inc.

Please provide your comments to UPPCO at your earliest convenience. If UPPCO does not receive comments by the end of business on Thursday, it will assume you have none and are in agreement with the request. UPPCO will perform flow changes immediately upon approval or Friday May 25th if no comments are received.

If you have any questions, please feel free to reach out.

Regards,

Josh Ball

Generation Supervisor

Upper Peninsula Power Company

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Joshua Ball

ATTACHMENT TO UPDATE EMAIL #6

From: Jim Grundstrom <jimgrundstrom@freichevy.com>
Sent: Friday, May 18, 2018 10:39 AM
To: Virgil E. Schlorke; Joshua Ball; Scott_Hicks@fws.gov; Oun, Amira (DEQ); Gene Mensch; Jim Grundstrom; Woods, Lee (offthegrid906@gmail.com); Kenneth M. Carruthers; GenerationAdmin; Elle Gulotty
Subject: FW: Message from KMBT_283
Attachments: SKMBT_28318051910230.pdf

WARNING: This email was sent from an external address. Exercise caution when opening links or attachments.

Good Morning to you all from Dead River Campers, Inc.

In the attachment is a letter from DRCI to Virgil, and copy to you all concerning the water elevation changes taking place on the Hoist Storage Basin from our perspective. Once again dramatic unpredictable weather is making for rapid decreases in the elevation of the water of the Hoist. No rain, high evaporation, crazy low humidity, and very little moisture content in the snow pack is just about the perfect storm of conditions causing this to happen in our eyes. It would be our wish if possible to abate the decline and change the targeting plan. Our Camper Members very much enjoy the recreation on the Hoist Basin during the summer months. Attempting to ensure that enjoyment is pretty much contingent on having adequate water elevations to play on.

Thank you very much for your time to read and ponder,

Jim Grundstrom
DRCI President

From: 2300@scannedfile.com [mailto:2300@scannedfile.com]
Sent: Saturday, May 19, 2018 10:24 AM
To: Jim Grundstrom <jimgrundstrom@freichevy.com>
Subject: Message from KMBT_283

ATTACHMENT TO UPDATE EMAIL #6



Dead River Campers, Inc.

213 Pearl Street

P.O. Box 323

Ishpeming, Michigan 49849

Office Phone: 906-485-1975

Email: drcicampers@gmail.com

www.deadrivercampersinc.com

May 17, 2018

Mr. Virgil E. Schlorke
1002 Harbor Hills Drive
Marquette, MI 49855

Re: Hoist Basin Water Levels

Mr. Virgil E. Schlorke:

Due to the lack of precipitation in the month of May 2018, the lowering of Silver Lake Storage Basin to the start of the month target level for April to the elevation level of 1477.5', and the inability of the Silver Lake Basin to refill beyond the elevation of 1482.0', we do not believe that there is enough water to maintain the Hoist Basin at the target level elevation of 1341' for the summer recreation season. The Dead River Board of Directors, on behalf of our shareholders, would like to request to change the June 1, 2018 target level to 1342' in the Hoist Basin.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim Grundstrom", with a long horizontal flourish extending to the right.

Jim Grundstrom
Dead River Campers, Inc.
President

Cc: Josh Ball

Joshua Ball

MDEQ REQUEST FOR INFORMATION

From: Oun, Amira (DEQ) <OunA@michigan.gov>
Sent: Monday, May 21, 2018 2:47 PM
To: Joshua Ball
Subject: FW: Silver Lake Basin flow augmentation request

WARNING: This email was sent from an external address. Exercise caution when opening links or attachments.

Please see the email below, Gorge from DNR concern about dropping Silver lake level with in the spawning time.

Amira

From: Madison, George (DNR)
Sent: Monday, May 21, 2018 8:33 AM
To: Gulotty, Elle (DNR) <GulottyE@michigan.gov>
Cc: Oun, Amira (DEQ) <OunA@michigan.gov>
Subject: RE: Silver Lake Basin flow augmentation request

Bluegill, the fish species of management goal for the Silver Lake Basin, will begin their spawning phase during the next two to three weeks. We just stocked 10,000 pure-strain bluegill into the Silver Lake Basin last week, using the Dead River mitigation funds.

Because of the upcoming spawning period for bluegill, combined with a recent \$12,000 investment in fish stocking, I would not support lowering the Silver Lake Basin at this time to accommodate recreation desires at the Hoist Basin. Water flow augmentations could be considered towards the end of June, allowing for recreation needs for the 4th of July holiday.

Respectfully,

George Madison, Fisheries Manager
Michigan Department of Natural Resources
West Lake Superior Management Unit
427 US-41 North
Baraga, Michigan 49908

[906-353-6651](tel:906-353-6651)

From: Gulotty, Elle (DNR)
Sent: Friday, May 18, 2018 11:37 AM
To: Madison, George (DNR)
Cc: Oun, Amira (DEQ)
Subject: Fw: Message from KMBT_283

Definitely not from running Hoist at max capacity the last several weeks... I am home so I haven't read the attached letter yet.

From: Jim Grundstrom <jimgrundstrom@freichevy.com>

Sent: Friday, May 18, 2018 10:38:43 AM

To: Schlorke, Virgil E; Josh Ball; Scott_Hicks@fws.gov; Oun, Amira (DEQ); gmensch@kbic-nsn.gov; Jim Grundstrom; Woods, Lee (offthegrid906@gmail.com); Kenneth M. Carruthers; GenerationAdmin; Gulotty, Elle (DNR)

Subject: FW: Message from KMBT_283

Good Morning to you all from Dead River Campers, Inc.

In the attachment is a letter from DRCI to Virgil, and copy to you all concerning the water elevation changes taking place on the Hoist Storage Basin from our perspective. Once again dramatic unpredictable weather is making for rapid decreases in the elevation of the water of the Hoist. No rain, high evaporation, crazy low humidity, and very little moisture content in the snow pack is just about the perfect storm of conditions causing this to happen in our eyes. It would be our wish if possible to abate the decline and change the targeting plan. Our Camper Members very much enjoy the recreation on the Hoist Basin during the summer months. Attempting to ensure that enjoyment is pretty much contingent on having adequate water elevations to play on.

Thank you very much for your time to read and ponder,

Jim Grundstrom

DRCI President

From: 2300@scannedfile.com [<mailto:2300@scannedfile.com>]

Sent: Saturday, May 19, 2018 10:24 AM

To: Jim Grundstrom <jimgrundstrom@freichevy.com>

Subject: Message from KMBT_283

Joshua Ball

UPPCO RESPONSE TO MDEQ REQUEST FOR INFORMATION

From: Joshua Ball
Sent: Monday, May 21, 2018 2:59 PM
To: 'Oun, Amira (DEQ)'
Cc: Virgil E. Schlorke
Subject: RE: Silver Lake Basin flow augmentation request

The proposed planned deviation request from today will have no direct effect on Silver Lake. The requested planned deviation would be accomplished by a reduction in outflows from the Hoist facility to minimize the impact of elevation drop (which are currently high per the license requirement to meet 1341 by June 1) and keep water at the current level of approximately 1342. Flows from silver lake would remain at the minimum of 20 CFS for May, 15 CFS for June. At this time UPPCO has no plans to release more than minimum flows from Silver lake.

Thanks,

Josh B.

O: (906) 485-2419
C: (906) 869-1798

UPDATE EMAIL #7

Joshua Ball

From: Joshua Ball
Sent: Tuesday, May 29, 2018 10:23 AM
To: Elle Gulotty; Scott_Hicks@fws.gov; Oun, Amira (DEQ); Gene Mensch; Jim Grundstrom
Cc: Virgil E. Schlorke; Kenneth M. Carruthers; GenerationAdmin
Subject: Dead River Update 5/29/18

Good morning all,

The current elevation at the SLSB is 1481.95' and outflows are at 20 CFS. Over the next week, UPPCO will continue to release minimum flows, with a flow change expected Thursday or Friday to 15 CFS to match the minimum flow requirement for the month of June.

The Hoist headwater elevation is currently at 1341.74', with outflows at 105 CFS (minimum). As a result of last weeks email requesting a planned deviation to the headwater target level, no comments were received and UPPCO moved forward with implementing flows to target an elevation of 1342' for the start of June. UPPCO will monitor basin inflows and adjust outflows to best trend towards 1341' for the start of July.

Both approved planned deviations (SLSB and Hoist) will be completed as of Friday June 1. I will send out a final status update on Monday June 4th in regards to the final elevations and current flows at the storage basins.

If you have any questions, please feel free to reach out.

Regards,

Josh Ball
Generation Supervisor
Upper Peninsula Power Company
500 N. Washington St.
Ishpeming, MI 49849
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Joshua Ball

~~UPPA~~ UPDATE EMAIL # 8

From: Joshua Ball
Sent: Monday, June 04, 2018 9:18 AM
To: Elle Gulotty; 'Scott_Hicks@fws.gov'; 'Oun, Amira (DEQ)'; Gene Mensch; 'Jim Grundstrom'
Cc: Virgil E. Schlorke; Kenneth M. Carruthers; GenerationAdmin
Subject: RE: Dead River Update 6/4/18

Good morning all,

The current elevation at the SLSB is 1482.05' and outflows are at 15 CFS. UPPC will continue to release minimum flows and will adjust operations as needed to ensure a elevation of 1481.5 for the start of July.

The Hoist headwater elevation is currently at 1341.91', with outflows at 105 CFS (minimum). The planned deviation for headwater elevation for June is complete. The Hoist storage basin was able to store a little over 0.9' of water as a result of the deviation, which will help ensure summer recreation levels. For the next few weeks, basin inflows will be monitored and outflows adjusted to best trend towards 1341' for the start of July.

This will be the final status update as both approved planned deviations (SLSB and Hoist) will be complete. The current headwater and flow data is available on UPPCO's website if you would like to review over the next few weeks.
(<https://www.uppco.com/our-company/helping-the-environment/efforts/hydroelectrical/hydrodata/>)

If you have any questions, please feel free to reach out.

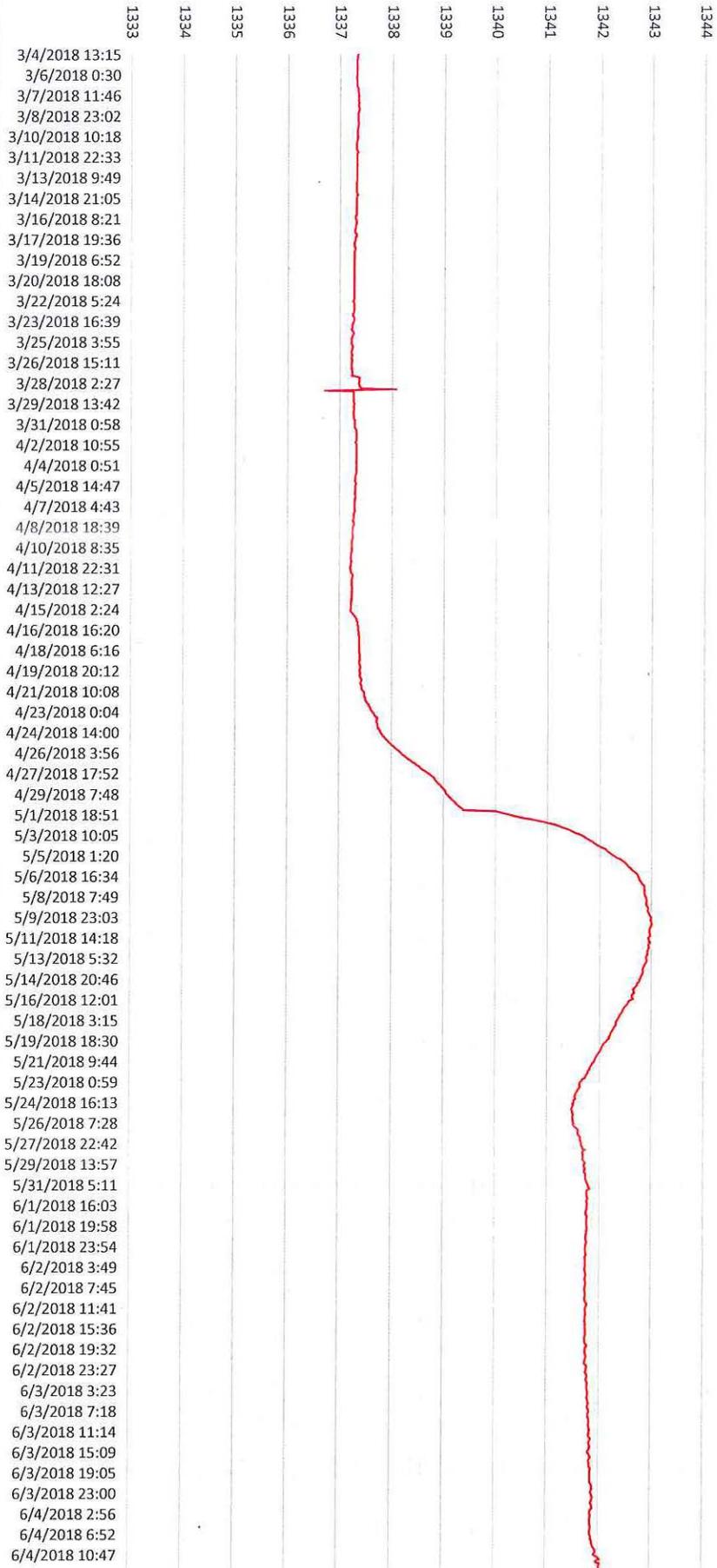
Regards,

Josh Ball
Generation Supervisor
Upper Peninsula Power Company
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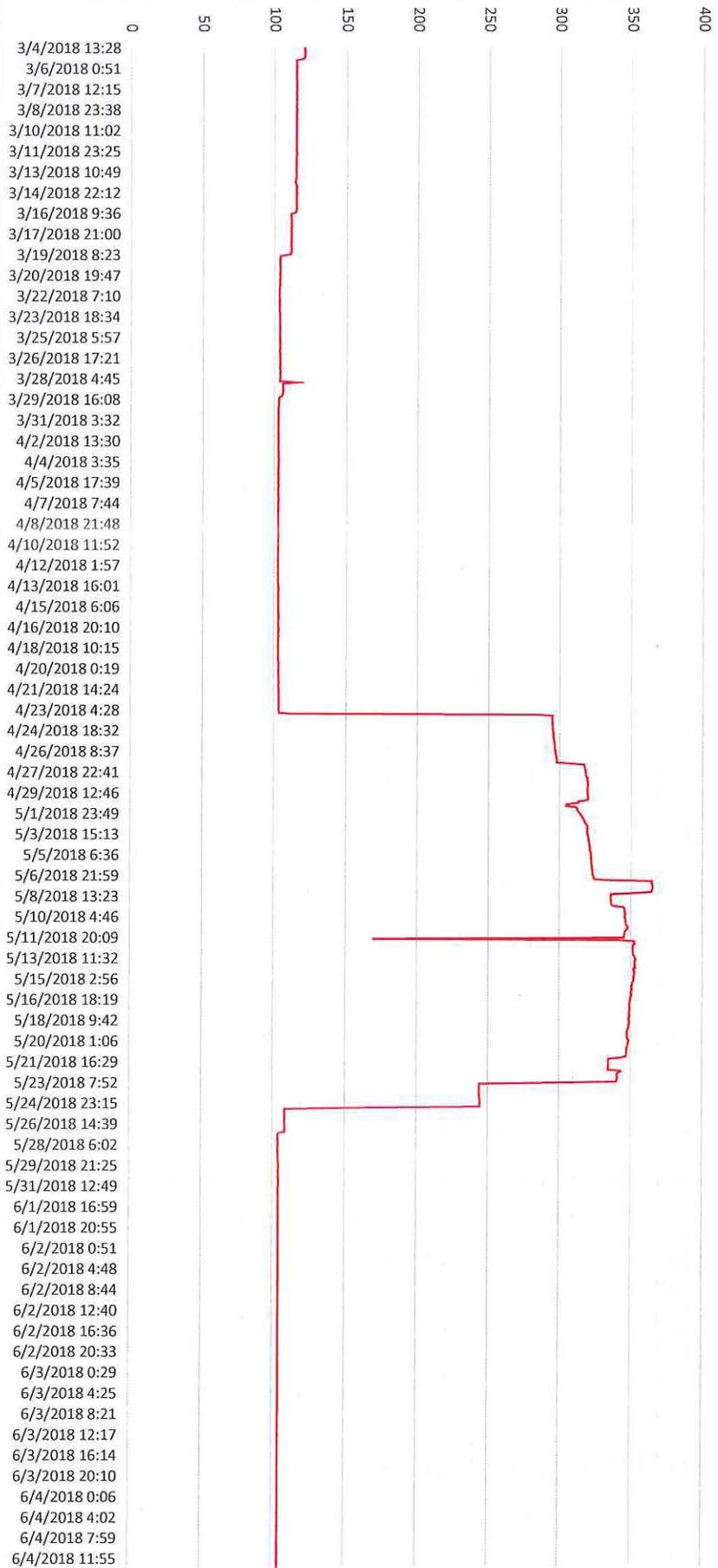
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Appendix B: Operational Data

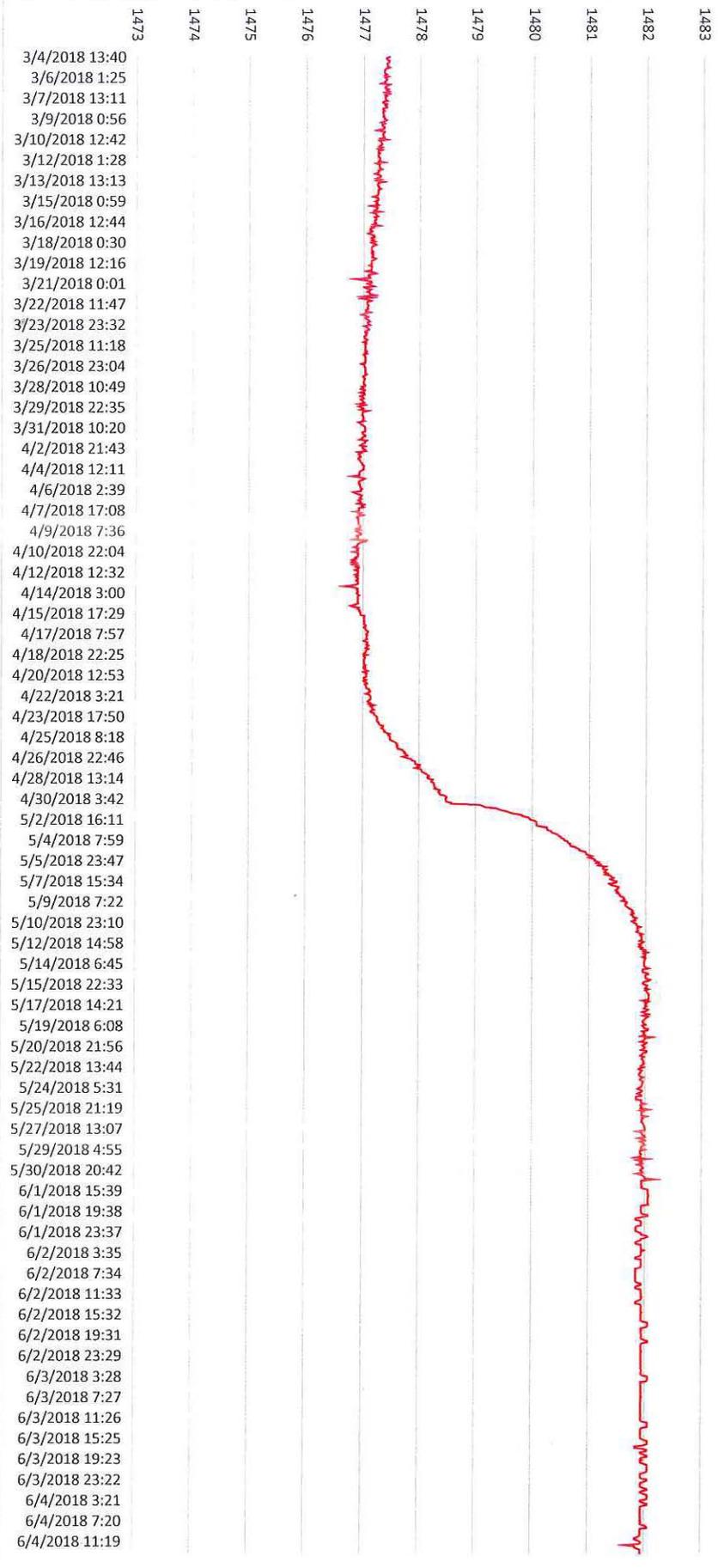
Hoist Headwater



Hoist Total Plant Flow



Silver Lake Headwater



Silver Lake Total Plant Flow

