

Lopas, Sarah

From: Lopas, Sarah
Sent: Monday, March 12, 2012 12:03 PM
To: 'Thomas Lovullo'; 'john.aedo@ferc.gov'
Cc: 'Vail, Lance W'; Masnik, Michael; Haque, Mohammad; Kuntzleman, Nancy; Becker, James M; Southard, Susan L; 'Krieg, Rebekah'; Miley, Terri B
Subject: Nintey-Nine Islands Project Seasonal Flow Limitations

TJ and John,

Thank you for the telecon last Wednesday to discuss the implications of the order amending license Article 402 of the Ninety-Nine Islands Project, FERC No. 2331 ([FERC Order Amending Min Flow Requirement, Article 402](#)). Below is a table illustrating the NRC's understanding of the water withdrawals that would be allowed by the proposed Lee Nuclear Station from the reservoir behind the Ninety-Nine Islands dam. We are requesting that you confirm these example flows to ensure that we are interpreting the license correctly:

Month	Inflow to Ninety-Nine Islands Project (cfs)	Withdrawal Allowed (cfs)
January	967	(967-966)=1
January	995	(995-483)=512
May	726	(726-725)=1
May	724	(724-483)=241

If you have any questions, please call me at 443-708-7002 today, or the rest of the week at 301-415-1147. We can also schedule another telecon if you think that would be helpful.

Thanks!
Sarah

Sarah L. Lopas
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Please consider the environment before printing this email.

Lopas, Sarah

From: Thomas Lovullo [Thomas.Lovullo@ferc.gov]
Sent: Monday, March 26, 2012 8:50 AM
To: Lopas, Sarah
Cc: John Aedo
Subject: RE: Nintey-Nine Islands Project Seasonal Flow Limitations

Follow Up Flag: Follow up
Flag Status: Flagged

Sarah,

We looked into your question regarding minimum flow requirements below the Ninety-Nine Islands Project (FERC No. 2331). Our review indicates that your hypothetical table (with the revised inflow scenario of 965, not 995 cfs for the second entry under January) may represent a theoretical interpretation under the current license requirements, but may not represent a practical scenario. In the theoretical interpretation, the table does represent the amount of flow required below the dam in the first four hypothetical situations you present. We also added two more hypothetical situations to the table, should anyone have additional questions regarding minimum flows concerning the July to November period.

That said, it is important to remember that just because the requirements of license article 402 stipulate that outflow can be significantly reduced if project inflow is below the identified monthly requirement that does not automatically mean that Duke Energy can consumptively use the flow differential. As stated in the recent amendment to article 402, the intent of the minimum flow requirement is “for the protection of fish resources below the project in the Broad River.” Any potential water withdrawal from the project reservoir, and its result on flow downstream of the project, would need to ensure that aquatic resources are protected. Additionally, Article 412 (c) of the project license allows the licensee to convey easements for water intake or pumping facilities that do not extract more than one million gallons per day (GPD) from a project reservoir. Any consumptive use above the one million GPD has to be approved by the Commission. So hypothetically speaking, Duke Energy possibly may be able to consumptively use (some of) the flow differential if inflow was below the monthly requirement, but any consumptive use greater than 1 M GPD would have to be reviewed by the natural resource agencies, public noticed, and reviewed and approved by the Commission under its regulations and procedures first (which is essentially where we will end up when Duke Energy files for this approval sometime next year).

Also what needs to be kept in mind is that any consumptive water use could reduce the surface water elevation of the project reservoir. Though not previously discussed, license article 401 requires that Duke Energy limit the maximum reservoir drawdown to one foot below full pool during March, April, and May, and two feet below full pool June through February. Any theoretical water withdrawal model needs to account for the fact that these reservoir elevations need to be maintained during the aforementioned months. For example, the reservoir elevation requirements could potentially be exceeded during the transition from February to March if the reservoir is already at the minimum February elevation level and water is still being actively withdrawn, so as to impede filling the reservoir to the increase March elevation requirement. I suppose that deviations from the water surface could also occur in a scenario where the return water system failed and water was still being actively withdrawn, thus causing the reservoir elevation to decrease. There are likely other scenarios when deviations from the reservoir elevation requirements could occur.

Lastly, it is important to reiterate that although the third column uses the word “potential” the flow differentials may not accurately reflect the practical amount of water that can be withdrawn. The minimum flow requirement is the lowest flows required not the optimum for fishery and/or other aquatic resources. Article 402 is for the protection of aquatic resources (which comprises many animal species and life histories with different flow requirements for different life stages) and 483 cfs was established in part for drought contingency purposes. Answering hypothetical questions often leads to misunderstanding and I hope that doesn't occur here. Our answer to your question does not predefine any speculative operational purposes. It is in cooperation as a participating agency in the environmental review process. The NRC's biologist, hydrologists and engineers should not speculate on the volume of flow that will or will not be available for withdrawal purposes. That, as I indicated, will be part of Duke's pre-filing consultation with the resource agencies and stakeholders followed by the Commission's review of Duke's non-project use of project waters application.

I hope our answer helps clarify the minimum flow requirement at the Ninety nine Islands Project.

Regards,

Table 1.0

Month	Inflow to Ninety-Nine Islands Project (cfs)	Potential Maximum Withdrawal Allowed (cfs)
January	967	(967-966)=1
January	965	(965-483)=482
May	726	(726-725)=1
May	724	(724-483)=241
August	484	(484-483)=1
August	482	0 (Must release all inflow. Applies to all months with flow below 483. Also reservoir elevation and operational restrictions apply in all months.)

From: Lopas, Sarah [mailto:Sarah.Lopas@nrc.gov]
Sent: Monday, March 12, 2012 1:12 PM
To: Thomas Lovullo; John Aedo
Subject: FW: Nintey-Nine Islands Project Seasonal Flow Limitations

Whoops – correction below...

From: Haque, Mohammad
Sent: Monday, March 12, 2012 12:23 PM
To: Lopas, Sarah
Subject: RE: Nintey-Nine Islands Project Seasonal Flow Limitations

I think you meant the second line January inflow to be 965 instead of 995?

Mohammad

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