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POWER SERVICES

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In reply refer to: PGS-5

Memorandum Concerning Operations in the Lower Snake River

On July 12 through July 15, 2008, there were three instances where spill was curtailed at Lower Monumental (LMN), and one instance where spill was curtailed at Ice Harbor (IHR). These reductions were the result of human error as a result of attempting to meet the dual objectives in the biological opinion of reservoir refill and spill along with variability of flow in the Lower Snake River. Spill was curtailed to maintain Minimum Operating Pool (MOP) and minimum generation at the projects. The following chart provides a detailed accounting and explanation of these variances:

Project	Parameter	Date	Time	Hours	Type	Reason
Lower Monumental	Spill	7/12/08	0100-0200	2	Operational Limitations/ Human error	Hourly spill at 16.3 and 9.5 kcfs instead of 17 kcfs. Maintain MOP and minimum generation
Lower Monumental	Spill	7/13/08	0100-0600	6	Operational Limitations/ Human error	Hourly spill at 14.5, 7.1, 6.6, 6.6, 6.6, and 16.3 instead of 17 kcfs. Maintain MOP and minimum generation
Ice Harbor	Spill	7/13/08	0400-0500	2	Operational Limitations/ Human error	Hourly spill at 3.3 and 0 kcfs instead of 15.2 kcfs. Maintain MOP and minimum generation
Lower Monumental	Spill	7/15/08	0400-0800	5	Operational Limitations	Hourly spill at 15.3, 10, 10, 10 and 15 kcfs instead of 17 kcfs. Maintain MOP and minimum generation

In reviewing the operations that resulted in these spill reductions BPA has determined that the primary causes of the variances were a combination of operational conditions and human error. The Corps has reviewed the information and concurs.

On the weekend of July 12-13, BPA was striving to meet the Biological Opinion objective¹ of achieving full pool (1290') at Grand Coulee. As the project approaches full it limits the flexibility associated with the Columbia River projects. In addition, actual loads varied from forecast, units were forced out unexpectedly, and inflows into the Lower Snake projects were lower than forecasted and dropping. Although BPA Hydro Duty Schedulers were operating with the expectation of meeting Fish Operations Plan (FOP) requirements, they made the planning error of operating too close to the minimum end of MOP, in that they expected flows to allow forebay elevations to recover. Unfortunately, despite some corrective actions, actual flow conditions did not allow for that recovery and created the need to reduce spill. Because these projects must be maintained at MOP or above for navigational safety reasons and operation of fish passage facilities within criteria, and because inflows on the Lower Snake were not sufficient to maintain MOP, spill was curtailed. The Corps became aware of this situation and contacted BPA on July 14th.

On July 15th the circumstances were different. The Hydro Duty Scheduler appropriately anticipated the need to reduce generation and dropped generation to minimum generation levels while continuing to spill the required amount four hours in advance of the variances. It appears that the reduction in total discharge resulted in an anomalous wave or "bounce" in the forebay readings that would not normally be anticipated given the extent of the reductions. Four hours after the generation reduction the low side of the wave caused forebay readings below minimum pool. Already at minimum generation, the Hydro Duty Scheduler reduced spill to manage the pool within the MOP operating range.

At the Technical Management Meeting (TMT) on Wednesday, July 16th, the Lower Monumental issue was discussed and the BPA representative acknowledged that the conditions that led to the weekend variances were not acceptable to BPA. He also stated that BPA had already taken steps to decrease the possibility of deviating from MOP and the required FOP spill. On Wednesday, July 16th after TMT, the Corps met with BPA and discussed the operation on the Snake River, its effect on not providing FOP fish spill and Lower Granite navigational concerns. Since barges were having navigational difficulties, BPA agreed to further attempt to smooth flows out between Little Goose and Lower Monumental. In addition, BPA reported that the Little Goose forebay elevation would be operated at the top half foot of MOP as a soft constraint to alleviate navigational issues.

Remedial Actions

In response to these events BPA has reiterated instructions in official operations logs, direct communication and written memo to Hydro Duty Schedulers that if there is any risk of

¹ Grand Coulee refill is specified in both the 2004 BiOp and the 2008 Water Management Plan Spring/Summer update as finalized and approved by TMT on May 22, 2008. The specific language states: Grand Coulee will operate to refill by about June 30 to provide summer flow augmentation, except as specifically provided by the TMT. The target date was updated to July 14 at TMT on June 18th. The purpose of this objective is to maximize available storage of water for the benefit of summer listed species migrants.

impacting mandated spill levels, they should reserve as much as possible of the MOP operating range at the Snake Projects to manage Snake flow uncertainty over time. This includes planning for several hours into the future to minimize the risk that current operating decisions will place a project at MOP in a future hour.

Conclusion

While BPA Hydro Duty Schedulers took appropriate action during the hours in question to maintain MOP, there were instances where prior real time planning was insufficient to minimize the risk to MOP and spill. In this case the variances were related to a combination of operational conditions and human error in within-day planning. Variances of this sort would normally be reported to the court as part of the monthly spill reports. The Federal Agencies are keenly aware, however, of the Court's May 23, 2007, Order regarding Federal Defendant's obligations and the subsequent Court Response to Clarification Request of June 11, 2007 that require reporting of situations where power needs are placed before those of listed species. In this case power needs were not the cause of the variances - BPA purchases and sales activity over the weekend were driven by operational concerns to achieve the Grand Coulee objective, not power marketing activity. However, due to the complexity of the situation Federal Defendants wanted to clarify the situation as soon as practical.