OFFICIAL MEMO of COORDINATION (MOC) FOR NON-ROUTINE OPERATIONS AND MAINTENANCE

COORDINATION TITLE- 17 LGS 02 Reactive Limit Testing; Updated
COORDINATION DATE- February 22, 2017, Updated 23 March 2017
PROJECT- Little Goose Dam
RESPONSE DATE-

1. **Description of problem:** Reactive limit testing on 4 units is scheduled to take place on 07 March, during unit priority. Reactive limit testing is required in accordance to NERC Standards MOD-025-2 and requires 60% of units to be tested by 01 July. Testing will be conducted on 4 units, one at a time, and will likely take just over 1 hour per unit. Throughout testing, unit priority may be impacted.

   Reactive limit testing was conducted as scheduled with no problems. Units 2, 3, 4 and 6 were tested. Testing began at 0710 and was completed at 1340.

2. **Type of outage required:** No unit or spillway outages required.

3. **Dates of impacts/repairs:** March 07

4. **Length of time for repairs:** 7 hrs

5. **Impact on fish facility operation:** No impact on fish facility operation.

6. **Impact on project operations:** Unit priority could be impacted throughout the entirety of the day.

7. **Analysis of potential impacts to fish:** Impacts to adult fish passage should be minimal as steelhead are the only salmonid species crossing Little Goose Dam during the first part of March. Counts for this time of year were last done in 2016, 2004 and 2003 and were 29, 82 and 775, respectively for 07 March (Figure 1). The 2016 adult steelhead run was roughly only 60% of the 10 year average (2007-2016) crossing both Bonneville and Little Goose Dams (Figure 2). Assuming similar adult passage as previous years and incorporating a lower than average return, daily passage is expected to be less than what was seen in 2016. As unit priority is used for fish attraction, fish experiencing disruption of unit priority could potentially experience prolonged upstream migration of several hours.

8. **Comments from agencies.**

Bill Hevlin, NOAA; It is important to NOAA Fisheries that adult steelhead pass quickly upstream through the Little Goose Dam during the month of March. Priority unit operation enhances their attraction to ladder entrances, as you know. On March 7, disruption of unit priority operation will likely increase steelhead delay in the tailrace for that day, as you acknowledge. However, we agree with the COE that this relatively short additional delay will not have any adverse

effect on these fish, and NOAA Fisheries does not have any concerns with the COE's plan for this one day disruption in unit priority operation. Please let me know if you have any questions regarding our comments.

Dave Statler, Nez Perce Tribe; Seems to me that with units off and then on, perhaps multiple times, there is more of a chance for Pacific lamprey macs/larvae to be impinged in the turbine cooling strainers. Are there plans to inspect the strainer units more frequently during testing?

> *Scott St John, Little Goose Dam*; This test will be conducted on 07 Mar, strainers are scheduled to be checked that week already and will likely be checked after this test. That being said, units will not be started and stopped and will not likely cause an increase in cooler water strainer mortality.
>
> The test will include each unit being taken to 4 different set points on the capability curve. We will hold the unit at its max rated MW and mas MVAR point for one hour (one of the four set points). The other 3 set points will be held just long enough to get the reading and should only be a few minutes. In short, a unit could already be running and they are just testing the voltage from an exciter and various loads. This is strictly an electrical test on the exciters and capabilities, not a physical test of a turbine unit.
>
> This test will likely impact the 1% criteria and not so much unit priority, however, according to FPP LGS 4.2.2, the project can operate outside of the 1% range when BPS load requests require units to be operated outside 1%. Therefore, I wrote the MOC specifically for unit priority.

Please email or call with questions or concerns.
Thank you,

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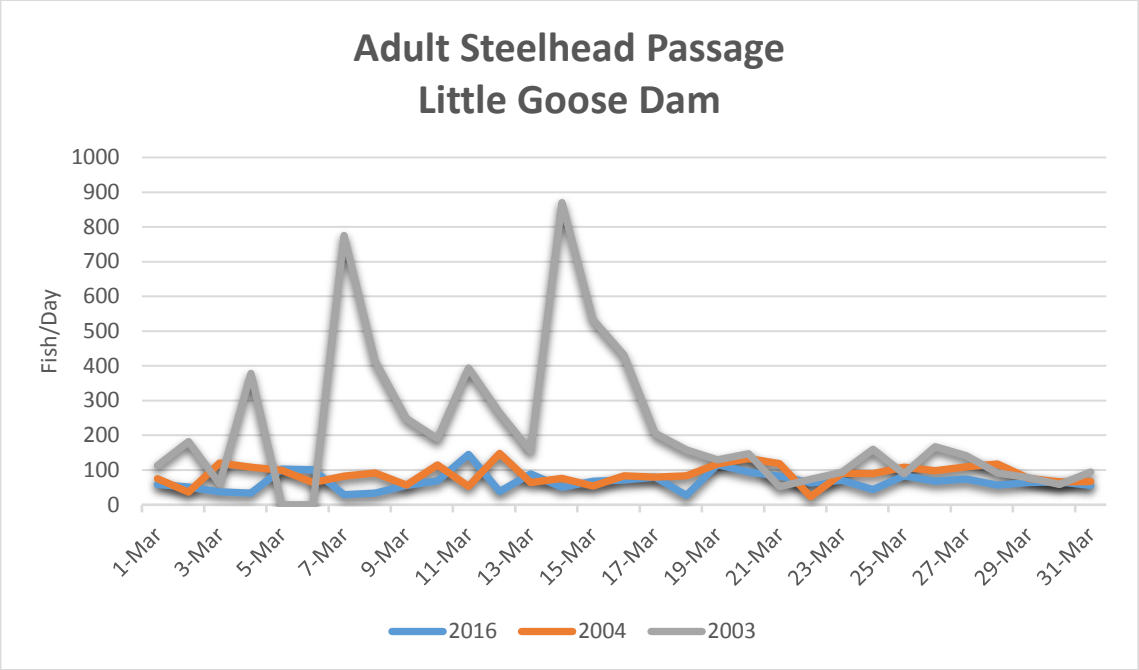

Figure 1. Adult steelhead passage Little Goose Dam: 2003, 2004 and 2016.

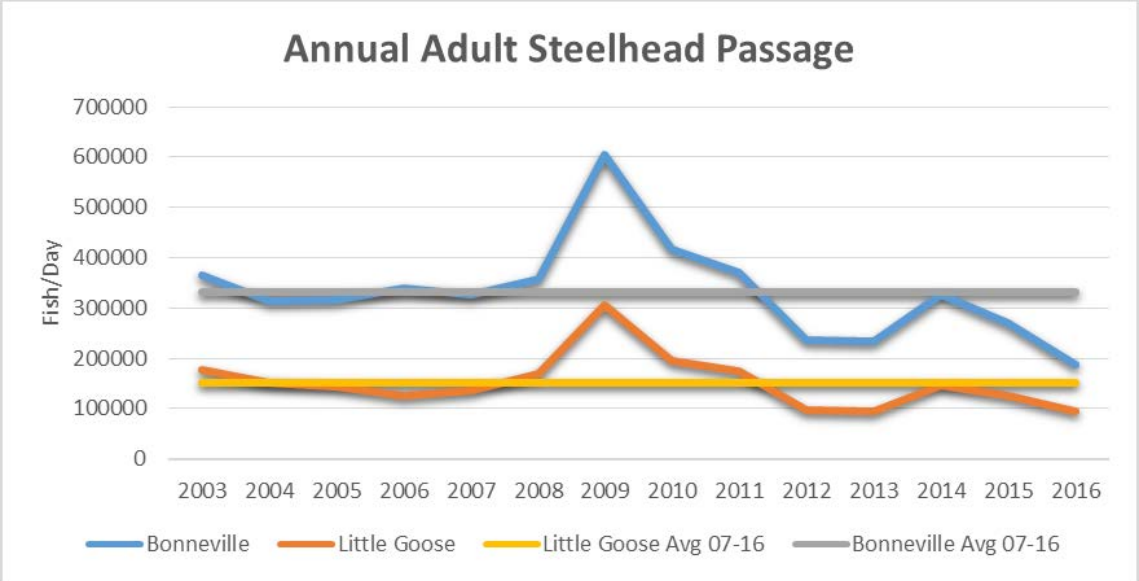

Figure 2. Annual adult steelhead passage for Bonneville and Little Goose Dams.