March 2010

APPENDIX A: LOWER MONUMENTAL

Lower Monumental Dam[1]

1. Special Project Operations.

1.2. **Spill**. Spill for fish passage will be provided during the outmigration season in accordance with spill specifications in Appendix E and as coordinated through TMT. Alternative spill patterns to control dissolved gas levels or change fish passage conditions will be coordinated through the FPOM. During periods of high river flow, spill volumes and the elevation of Lower Monumental reservoir may need to be manipulated on a daily or every-other-day basis to provide safe conditions for loading the fish barge at the juvenile fish facility below the dam.

1.3 Doble Tests. Transformer bank T1 and turbine units 1, 2, 3, and 4 will be taken out of service for Doble testing in 2010. The outage is tentatively scheduled for 26-30 July 2010. This work will require a total powerhouse outage, and 100% spill (except for station service) for up to 4 hours. By then, all clearance tags should be hung, and the line could be re-energized allowing generation availability of Units 5 and 6. Turbine unit 1% efficiency operations and turbine priorities will continue to follow fish passage plan requirements during these tests. Another total plant outage will be required on the last day of testing to remove clearance tags and restore T1 bank.

1.4 Navigation. Tailrace Transit – Fish Transportation Barge. Transit across the Lower Monumental tailrace, docking at and disembarking from the fish collection facility requires some degree of flow control depending on tug/barge size and power, wind, pilot experience, current and other factors. Spill needs to be reduced to the level needed for safe passage. Towboat captain may request zero spill during this transit. During juvenile fish loading operations, spill is typically reduced to 15 kcfs, but can be reduced further if needed for safety reasons. Loading periods can take up to 3.5 hours. Because of the time needed to complete loading, the Little Goose Project Biologist notifies the Little Goose Operator when the fish barge departs. BPA scheduling is then provided advance notice for spill control at Lower Monumental Dam. Reducing spill may cause Lower Monumental project to briefly operate outside of MOP conditions.

1.5 Precise Level Surveys. Dam safety has scheduled the performance of Precise Level surveys at Lower Monumental Lock and Dam, in the February/March/April 2010 time frame. This requires the contracted surveyors to have a direct line of sight across the top of the embankment and roadway deck of the powerhouse, spillway, non-overflow sections, and Navigation lock and that the brass cap survey markers do not have anything set over the top of them.

1.6 Bridge Inspections. Bridges as appurtenance structures to the dam are inspected every two years based on the Federal DOT Bridge Inspection Program. Those

[1] The purpose of this section is to notify regional interests of planned activities that will or may affect fish passage. Further coordination may occur as needed.

Bridges include the spillway road way deck bridges and the Navigation lock downstream Bridge. Inspections require using a boat to inspection under the bridge in the spillway forebay or the use of a snooper truck from the road way deck. No underwater inspection of piers will be accomplished. Inspection of the spillway bridges will be attempted to be accomplished before the spill season.

1.7 Steady State Model Validation Testing. Western Electricity Coordinating Council requires steady state model validation testing on a periodic basis to ensure the generating equipment will meet real and reactive power ratings. All units will be tested on a 1-2 year cycle. Test will involve running the unit out of fish priority sequence and outside the 1% criteria. Testing can take place at any time except from 1 April to 31 August due to fish considerations. Tests will preferably be conducted just after unit annual maintenance, but may happen at other times. Tests will last for a standard of 30 minutes at maximum load with additional time to run the unit along the maximum real/reactive power curve to the minimum settings. Total test time is anticipated to be 90 minutes or less. Test durations will be minimized to the extent possible and will only be run for the purpose of completing the required model validation testing.

1.8 Model Validation (Governor Step response) Western Electricity Coordinating Council (WECC) requires a Governor response calibration to ensure the generating equipment responds as planned to system requirements and disturbances. Unit calibrations will be accomplished on all six units at Lower Granite. Calibration will involve running each unit in the manual GDACS mode and stepping the MW set point by 5 MW through the 1% range. To accomplish this, at least two other units will need to be operating in automatic to ensure a steady plant output while stepping through the operating range. This may result in operating units out of the sequence of the fish season priorities when calibrating units 4-6 if there is not sufficient water to operate four units. Each unit's calibration is expected to take approximately 1 day. Calibration will take place between March 29 and April 16.

2. Studies

2.1 Bull Trout PIT Tag Study. Incidental bull trout passing through the Lower Monumental Juvenile Fish Facility will be collected and held for PIT tag insertion, then released through the Lower Monumental primary bypass outfall. Project duration begins and ends with scheduled juvenile fish facility operations. No special turbine or spill operations will be necessary.

2.2 Developing a separator for Juvenile Lamprey. Juvenile lamprey collected at McNary may be moved to the Lower Monumental Juvenile Fish Facility raceways to study behavior and passage success through the LMO raceway screen material. No special project or facility operations are expected for the research.