

**OFFICIAL COORDINATION REQUEST FOR
NON-ROUTINE OPERATIONS AND MAINTENANCE**

COORDINATION TITLE- 16TDA03 EAL testing in Unit 1

COORDINATION DATE- 14 March 2016

PROJECT- TDA

RESPONSE DATE- 28 March 2016

Description of the problem- The Corps is required by a 2014 Settlement Agreement (Case 2:13-md-02494-LRS filed 8/14/2014) with the Columbia RiverKeeper pursuant to the Clean Water Act to test the feasibility of switching from petroleum based greases to Environmentally Acceptable Lubricants (EAL).

The candidate EAL grease must be tested in a real world environment. **The selected unit must have maximum run time during the test.** Based upon the compatibility testing, four representative units were selected for proof of concept testing (BON15, TDA1, MCN13, and LGN6). These units will be monitored with the current non-EAL grease and with the EAL. The grease will be applied to the wicket gate's grease system. Monitoring of the EAL will be determined by installing transducers on the wicket gate stems, grease lines, servomotor drain lines, and the governor accumulator tank drain. The transducers will measure if the EAL has any adverse effects on the wicket gate system.

Type of outage required- EAL testing in unit 1 will require three outages.

The first outage is planned for 30 May 2016. This outage does NOT require dewatering the unit but the unit will need to be locked out so that transducers can be installed on the wicket gate stems, grease lines, servomotor drain lines, governor accumulator tank drain. This means the unit will be out of service for 3 days while the equipment is being installed.

The second outage work will be part of an existing maintenance outage already planned for 25 July 2016. This means Unit 1 will be out for maintenance and EAL testing from 25 July – 08 September 2016. A dewatered unit is required in order to purge the grease lines of the non-EAL and measure bushings.

The third outage is currently planned for 04 Sept 2017 and will require no dewatering of the unit in order for the bushings to be measured. The unit will not need to be dewatered for 3 working days, from 04 – 07 Sept 2017.

Impact on facility operation- Unit 1 will be unavailable for operation during the outage dates listed. Dewatering the unit in 2017 will require Project support.

Dates of impacts/repairs- Unit 1 will be out of service on the following dates:

30 May – 01 June 2016 (watered unit)

25 July – 08 September 2016 (included within an existing maintenance outage)
04 – 07 Sept 2017 (watered unit)

Length of time for repairs- EALs will be applied during the first outage on 30 May and the performance of equipment will be monitored for up to 15 months.

Expected impacts on fish passage- None. Unit 1 is the westernmost main unit of the powerhouse lending to its effectiveness. Unit 2 will replace it with its sluiceways open. Flow through the sluiceways will replicate what is normally seen on MU1 sluiceways because they will be westernmost gates open. Past research has shown ‘fish will use MU2 and the sluiceway above it if MU1 is closed. We’ve seen no issues operating MU2 and SL2 when MU1 is out of service.’ (persper comm. Fenton Khan, previous PNNL researcher). Results from the PNNL 2005 study ‘Hydroacoustic Evaluation of Juvenile Salmonid Passage at The Dalles Dam Sluiceway’; ‘At the powerhouse, the horizontal distribution showed fish passage was highest at Sluice (SL) 2 and Main Unit (MU) 8 during spring. During summer, passage at the powerhouse was highest at SL 2 and 5 and MU 8. The horizontal distribution of passage was not skewed to the east during summer, as observed in previous studies.’ The largest portion of this operation will be during the later 30% of subyearling outmigration.

Comments from agencies

14 April 2016 FPOM comments:

Commented period ended the end of March. Pending Fredricks wants more detail on Unit 2 being just as good and ok if Unit 1 is out of operation. Just wants more justification written into form regarding no impact due to unit 1 being a priority unit. Cordie said they haven’t done anything yet and could do another Unit possibly. He said that doing the test on Unit 1 would eliminate a gap if Units after 1 were used and he’s not entirely comfortable doing different units and creating a gap. Fredricks would like more information on what is exactly being tested and what was actually being done. Hausmann said they put new lubricant into wicket gate seals and come back after 30 to 45 days run time and check to see if it was successful then they put it back in for a year run time. Morrill asked what the reasoning for testing unit 1 was and Cordie said mainly the fact that it gets so much run time would allow for good testing. ACTION: Hausmann said he has that information and can put that in the MOC.

Final results -this action will go forward as coordinated. Approved at the April FPOM meeting.

Please email or call with questions or concerns.

Thank you,

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