

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

COORDINATION TITLE- 16BON93 EAL testing at Bonneville

COORDINATION DATE- August 9, 2016

PROJECT- Bonneville

RESPONSE DATE- August 12, 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 grease to Environmentally Acceptable Lubricants (EAL).

The candidate EAL grease must be tested in a real world environment. Based upon the compatibility testing, four representative units were selected for proof of concept testing (BON15, TDA1, MCN13, and LWG6). EALs will be applied to these unit's wicket gate grease systems. 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 transducer will measure if the EAL has any adverse effects on the wicket gate system. **16BON10 EAL Testing was coordinated and approved in April 2016.**

Type of outage required- The EAL testing in unit 15 requires three outages. The first outage was completed on 04 AUG 2016, the other two major outages are described below. Dates shown below may deviate but duration of outage is not expected to change.

During the second outage the grease in the turbine will be converted over to EAL grease. The work required during the second outage will be done concurrently with an existing maintenance outage already planned for 31 OCT to 03 NOV 2016. This means Unit 15 will be out for maintenance and EAL testing from October 31 to November 03. A dewatered unit is required in order to purge the grease lines of the non-EAL and measuring bushings.

The third outage is currently planned for 12 DEC 2017 and will require dewatering of the unit in order for the bushings to be measured. The unit will need to be dewatered for 5 working days, from 11-15 DEC 2017.

The monitoring testing will not require a dewatered unit but may require a brief outage (2-3 hours) in order to quickly mount transducers. The unit will need to be operated through its available operating range (depending on 1% table limitations) for approximately 3 hours.

Impact on facility operation- Unit 15 will be unavailable for operation during the outage dates listed. Dewatering the unit will require Project support.

Dates of impacts/repairs- Testing is planned to begin in August 2016 thru December 2017 and planned to last up to 18 months.

First Outage: 2016 August 04 dewatered unit

Second Outage: 31 October 2016–03 November 2016 For Unit Overhaul-not able to run until after RTS dewatered unit.

Third Outage: 2017 Dec 11-15 dewatered unit

During fish passage season, all testing (baseline, periodic monitoring) will be within existing 1% limits. Testing / operation up to generator limits will only occur during periodic monitoring tests that fall during non-fish passage months.

Summary of Scheduled of Outages and Periodic Monitoring Tests as follows:

<u>Description</u>	<u>Date</u>	<u>Notes</u>
Unit Outage	04 August 2016 (Already Completed)	Instrumentation installation and Baseline Operational Testing
Unit Outage	31 October- 03 November 2016	Pre-Test Bushing Measurements
Periodic Monitoring Test	15 November 2016	No Unit Dewatering
Periodic Monitoring Test	14 December 2016	No Unit Dewatering
Periodic Monitoring Test	15 February 2017	No Unit Dewatering
Periodic Monitoring Test	17 May 2017	No Unit Dewatering
Periodic Monitoring Test	15 November 2017	No Unit Dewatering
Unit Outage	11-15 December 2017	Post-Test Bushing Measurements

Length of time for repairs- The EAL-bushing monitoring period at Bonneville will be approximately 18 months, starting in August 2016 and finishing in December 2017.

Two days are allotted for initial baseline testing; the first day for instrumentation, setup, and troubleshooting/calibration, and the second day for operational testing. One day of testing is allotted for the remaining periodic tests (months 0, 1, 3, 6, 12) with the new EAL grease. The third outage may require a three to five day outage in order to measure the bushings and collect grease.

Expected impacts on fish passage- None. BON 15 is not a priority fish attraction unit.

Comments from agencies:

Comments from 16BON10 MOC EAL TESTING:

-----Original Message-----

From: Gary Fredricks - NOAA Federal [mailto:gary.fredricks@noaa.gov] Sent:

Wednesday, March 16, 2016 3:28 PM

To: Mackey, Tammy M NWP <Tammy.M.Mackey@usace.army.mil>

Cc: Hausmann, Ben J NWP <Ben.J.Hausmann@usace.army.mil>; Lorz, Tom
<lorz@critfc.org>

Subject: [EXTERNAL] Re: FPOM: Official Coordination - 16BON09 EAL testing in U15

Tammy, I agree that it is unlikely that this work would impact fish since it is highly unlikely the unit would be needed to avoid operation of PH1 units in August. That should probably be mentioned in the MOC just to cover the juvenile passage base. Thanks, Gary

**April FPOM: 16BON10 MOC EAL testing U15 – Comment period ended the end of March.
Approved**

**Final results – This MOC updated the dates of the original MOC that was approved
at the April FPOM meeting.**

Please email or call with questions or concerns.

Thank you,

Ben Hausmann

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