

OFFICIAL COORDINATION REQUEST FOR NON-ROUTINE OPERATIONS AND MAINTENANCE

COORDINATION TITLE- 16 JD01

COORDINATION DATE- 2/23/2016

PROJECT- JOHN DAY DAM

RESPONSE DATE- Preferably by 1 March but will be discussed at the 10 March FPOM.

Description of the problem – The John Day-South (JD-S) fishway has an auxiliary water supply (AWS) powered by three “turbines”, which feeds water to the entrance area of the JD-S fish ladder (Figure 1). Each turbine design is complex and consists of a turbine, gear box, and the pump itself. The bearing of AWS turbine #1 was discovered to have failed by JD Maintenance on 2/08/16 during an “in depth” winter inspection, which occurs every few years. Inspection of turbine #2 started on 2/17/16 and it was discovered that its pump’s lower bearing was also in a failed condition. JD Maintenance has been working on retrofitting a spare fitting from turbine #3 into turbine #2 temporarily so that they can start the fish passage season on 1 March with two functioning AWS turbines. It’s unknown how long repairs to turbine #1 will take.

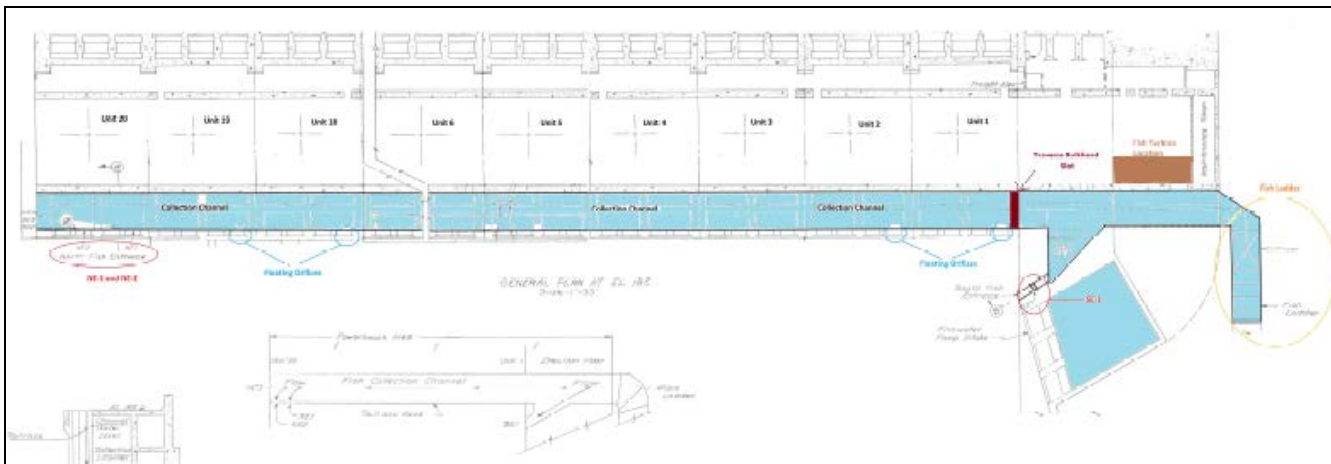


Figure 1. Schematic of the JD-S fishway with the location of the AWS turbine pumps (brown) and the locations of potential operational measures described in the text.

All three JDS AWS Turbines are required in service to meet the full FPP criteria. The FPP provides operational guidance for AWS turbine failures. However, the one-turbine operations require ramping up the two remaining turbines to compensate for the lost hydraulic output and this would place more stress on turbine #2 which could potentially cause it to fail. Therefore this MOC provides specialized operations in anticipation of:

1. One Turbine Operation – if two remaining AWS turbines won’t be available by March 1.

2. Two Turbine Operation – if one out of three AWS turbines won't be available by March 1.

Type of outage required – Refer to Figure 1 for description:

1. One Turbine operation will support only the SE-1 entrance in service (red circle on right in Figure 1), while NE-1 & -2 gates (red circle on left in Figure 1) and 4 FOGs (blue circles) will be OOS/ closed. This will be accomplished by the transverse bulkhead (dark red bar) installed just downstream of “fork”, where SE-1 splits away from the Collection Channel.

2. Two Turbine operation will support SE-1 and NE- 1 & -2 entrances, while 4 FOGs will be OOS /closed.

Impact on facility operation – See above.

Dates of impacts/repairs – March 1, 2016 until the AWS turbines #1 & #2 are repaired and are available for service.

Length of time for repairs – Unknown. JD Maintenance is laboring to get turbine #2 to working order by 1 March.

Expected impacts on fish passage –

1. One Turbine Operation could possibly cause upstream migration delays for some adult salmon populations due to fewer entrance options. It is unknown however, how quickly they will find the remaining entrances, JD North and JD SE (telemetry evaluation is the only tool useful in such determination.)

2. Two Turbine Operation has a lesser potential to impact the upriver migration of adult salmon populations due to a relatively minor reduction of only 4 FOGs OOS/ closed. Both SE and NE entrances will be in service/ fully available and will meet all FPP criteria. (It is not proven that 4 JD FOGs are even necessary and their permanent removal should be subject to the future discussions and telemetry evaluations.)

Comments from agencies

Final results

Approved at the 3-10-2016 FPOM meeting

Please email or call with questions or concerns.

Thank you,

Ida

Ida Royer

NWP Operations Division Fishery Section
Columbia River Coordination Biologist
Ida.M.Royer@usace.army.mil