**OFFICIAL COORDINATION REQUEST FOR**

**NON-ROUTINE OPERATIONS AND MAINTENANCE**

**COORDINATION TITLE-** 24JDA17 – Response to Delayed Repairs on JDA SFL AWS Turbines 1 and 2

**COORDINATION DATE-** 9/24/24

**PROJECT-** John Day Dam

**RESPONSE DATE- 10/10/2024**

**Description of the problem –** The John Day Project (JDA) south fish ladder (SFL) has 3-auxiliary water supply (AWS) turbines for attraction flow. AWS turbine Unit 3 was rehabbed in 2011. Turbines Units 1 and 2 were not. They are currently >50-years old and in need of repairs. The Units’ bearings are past their useful life and fail on a frequent basis. Project personnel have implemented temporary repairs that last approximately 6 months before failure occurs again. The reliability of the temporary repairs is low (hence the 6 month lifespan) and has been described by the Technical Lead as ‘a Band-Aid on an artery’. Design work is currently progressing to repair these turbines, specifically the bearings, and it is planned to have a Construction Contract awarded in June of 2025. Initially, the plan was to start on AWS turbine Unit 2 during the 2024/2025 winter maintenance window. However, due to funding issues JDA anticipates a delayed start date as previously indicated. There are currently two construction work window options being explored by JDA based on project schedule development.

Option 1: Begin repairs ASAP, which means starting January 2026 (2025/2026 winter maintenance season). Starting that late in winter maintenance means repairs will likely run into the 2026 adult passage season (ETR: May 2026, possibly April 2026), and JDA would be running the SFL with *2-tubines and no backup*. See figure 1 for fish impacts.

Option 2: Hold off on repairs and start work in November 2026 (2026/2027 winter maintenance) instead (starting 1-month before winter maintenance but finishing within the winter maintenance window). The concern is that AWS turbine 1 & 2 would be running an additional season with makeshift-repairs and could fail at any time. Ultimately resulting in JDA still running the fish ladder with *2-turbines and no backup* and being 11-months behind. See figure 2 for fish impacts.

Note: The SFL would likely be run in 2-turbine operation, with 1-turbine serving as a backup similar to 2024 (see 24JDA01).

Project Preference: JDA prefers to start the repairs as soon as possible in January 2026 (option 1). This approach will lead to less dependency on the makeshift-repairs, and both turbines will be repaired sooner. If one of the turbines happen to fail, there are procedures in place to keep the SFL operational (FPP: JDA 3.2.4.1). Also, if option 2 is utilized JDA would likely request to run the SFL in 2-turbine operation (with 1-turbine used as a backup) to increase the longevity of makeshift-repairs (similar to 2024 – 24JDA01). Therefore, the only advantage to option 2 would be the availability of a backup turbine for 2-3 months.

There are other potential consequences that should be considered if a failure, such as a seized bearing, should occur. The consequence may be:

1. Suspension of power production for up to a day so that Operations staff can get the flooding under control.
2. Direct life-safety concerns of Operations Staff if in the immediate area of failure.
3. Oil spillage in the river due to uncontrolled flooding.

**Type of outage required –** SFL AWS turbine-2 would be unavailable for part of the 2025/2026 adult passage season (ETR: May 2026).

**Impact on facility operation –** The SFL will be run in 2-turbine operation and will be without a backup AWS turbine for ~3-months during the Spring adult passage season.

**Dates of impacts/repairs –** The outage is anticipated to run from January 2026 – May 2026.

**Length of time for repairs** – 5-months

**Analysis of potential impacts to fish-** Regardless of the option chose, the SFL will likely run in 2-turbine operation similar to the 2024 passage season (see 24JDA01). If repairs are made in January 2026, there wouldn’t be an available backup turbine until repairs were complete (ETR May 2026, possibly April 2026), and the project would have to run the SFL in accordance with FPP guidelines for 1-turbine operation (FPP: JDA 3.2.4.1). Delaying repairs may ultimately lead to the same outcome, but with an 11-month delay for turbine repairs.



Figure 1: Option 1 impacts. Fish passage through the south and north fish ladder, by month, for the past 10-years (2015 -2024) and the 10-year average (2015 -2024). Note: March counts only occur every 5-years. There were no bull trout, coho, pink, or chum passing JDA during this time.



Figure 2: Option 2 impacts. Results from November counts at JDA from 2015-2024. November counts only occur every 5-years. There were no sockeye, lamprey, bull trout, pink, or chum salmon counted during this time.

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**Summary statement – expected impacts on:**

 **Downstream migrants:** There is no expected impact to downstream migrants.

**Upstream migrants (including Bull Trout):** There were no bull trout, coho, pink, or chum that passed JDA between March 1 and May 31 over the past 10-years. There were about ~36,000 Chinook, , ~300-stellhead, ~6-sockeye, and ~130-lamprey on average (10-year) that utilized the SFL during the proposed outage window(see Figure 1). The NFL will still be running in normal operation.

JDA has been running in a modified 2-turbine operation (see 24JDA01) to conserve turbine longevity until these repairs can be performed. Repairs will help ensure better future passage conditions. Foregoing this work may still result in AWS turbine failure during this window, except having to wait longer for the work to begin/finish.

**Lamprey:**. Impacts to lamprey are relatively low. The majority of lamprey passing the project, this time of year, prefer the SFL almost exclusively. However, there are only ~130 lamprey, on average, that pass the project between March 1 and May 31.

**Comments from agencies**

**Final coordination results**

Please email or call with questions or concerns.

Thank you,

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