OFFICIAL COORDINATION REQUEST FOR
NON-ROUTINE OPERATIONS AND MAINTENANCE

COORDINATION TITLE- 24 IHR 04 – TW6 transformer testing
COORDINATION DATE- May 15, 2024
PROJECT- Ice Harbor Dam
RESPONSE DATE-

Description of the problem
On April 8, foreign material (see photo below) was found in the TW6 transformer oil recirculating line, forcing the emergency outage of the transformer and unit 6. The contaminated oil and foreign material were removed from the transformer and recirculating lines. TW6 has been refilled with oil, additional filtration and oil purification is occurring, and additional oil samples will be taken after the unit and transformer are test-operated. The testing requires that unit 6 run at speed-no-load for two continuous hours and run within the 1% operating efficiency range for 10 continuous hours. Operations will be conducted at night to reduce impacts to fish passage.

Type of outage required

Impact on facility operation (FPP deviations)
Unit 6 will be operated out of priority for 12 hours including below the 1% operating efficiency range for the two hours of testing at speed-no-load.

Impact on unit priority
The May 13 STP forecast for the days of testing is for roughly 102-103 kcfs of inflow to the project. At this level of river flow, one unit will be operating to provide minimum generation while the rest of the water is supposed to be spilled for fish passage. Unit 6 will be providing minimum generation while on-line for the 10-hour test run and will be operated ahead of unit 2 as the only unit operating. During the 2-hour testing at speed-no-load, approximately 4 kcfs of water will pass through unit 6 while unit 2 is operated at minimum generation. Unit 1 is out of service for the runner replacement and stator rewind.

Impact on forebay/tailwater operation
None.

Impact on spill
None.

Dates of impacts/repairs
May 21-22, 2024.

Length of time for repairs
The testing will occur from 1630 hours on May 21 to 0500 hours on May 22. Unit 6 will first run at speed-no-load from 1630 hours to 1830 hours, then operated at minimum generation from 1900 hours to 0500 hours. Unit 6 will be turned off from 1830 hours to 1900 hours to collect an oil sample from the transformer.

Analysis of potential impacts to fish

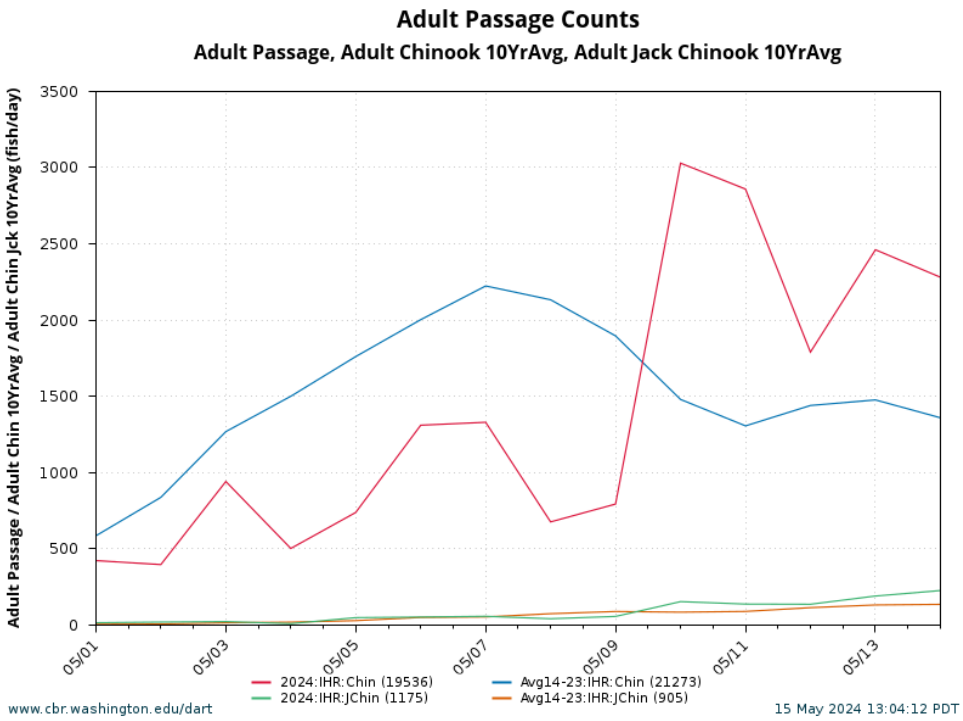
1. 10-year average passage by run during the period of impact for adults and juvenile listed species, as appropriate for the proposed action and time of year;

   The 10-year average of adult Chinook counted in the fish ladders at Ice Harbor Dam is 986 on May 21 and 1007 on May 22. The average number of jack Chinook is 234 on May 21 and 258 on May 22. Average numbers of other species counted were very low to none.

   There are moderate to high numbers of juvenile steelhead and spring chinook migrating downstream past the dam. Peak passage occurred towards the end of April.

2. Statement about the current year's run (e.g., higher or lower than 10-year average);

   The current season's counts of adult Chinook were lower than the 10-year average until May 10. Since then, the numbers have been above average (see graph below).



3. Estimated exposure to impact by species and age class (i.e., number or percentage of run exposed to an impact by the action);

   The percentage of adult fish passing the dam exposed to the action is estimated from daytime counts at less than 4.0% of spring Chinook and less than 8.5% of jack spring Chinook. Actual exposure will likely be lower because operations will be conducted at night when fish passage is typically low.

4. Type of impact by species and age class (increased delay, exposure to predation, exposure to a route of higher injury/mortality rate, exposure to higher TDG, etc.);

   When unit 6 is run at speed-no-load, below the 1% operating efficiency range, smolts and adult fallbacks passing through the unit may be exposed to a less-favorable physical environment. Most of the fish heading towards the unit would be diverted by the submersible traveling screens (STSs) away from the turbine and into the juvenile fish bypass.

   Upstream-migrating adult fish may experience passage delays into the south fish ladder when unit 6 is the only unit operating. However, fish attracted towards the unit 6 discharge may find there way into the nearby central fish entrance or floating orifice of the south fish ladder. The impact is lessened by doing the 10-hour test run of unit 6 during the evening and nighttime hours when there are fewer adult salmonids entering the fish ladders.

Summary statement - expected impacts on:

Downstream migrants
The impacts should be minimal as only a small fraction of downstream migrants will pass through unit 6 turbine while it is operating below the 1% operating efficiency range.

Upstream migrants (including Bull Trout)
The negative impacts on adult salmonids of operating unit 6 singly should be significantly reduced by doing the 10-hour test run in the evening and at night. Very few bull trout have been observed using the fish ladders during the last 10 years.

Lamprey
The impacts on juvenile lamprey should be minimal as most lamprey would be diverted away from unit 6 turbine by the STSs. Adult lamprey tend to use the fish ladders at night, but there are very few adult lamprey migrating upstream this time of year.

Comments from agencies

Final coordination results

After Action update (After action statement stating what the effect of the action was on listed species. This statement could simply state that the MOC analysis was correct and the action went as expected, or it could explain how the actual action changed the expected effect (e.g., you didn't need to close that AWS valve after all, so there was no impact of the action). List any actual mortality noted as a result of the action)

Please email or call with questions or concerns.
Thank you,

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Fish Biologist

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