OFFICIAL COORDINATION REQUEST FOR
NON-ROUTINE OPERATIONS AND MAINTENANCE

COORDINATION TITLE – 22 LGS 02 AWS Weir Crest Elevation During Navigation Hazard
COORDINATION DATE – 28~~15~~ April 2022
PROJECT – Little Goose Dam
RESPONSE DATE – 18 April 2022

Description of the problem- The ASW weir at Little Goose Dam was raised 3 ft from the standard high crest setting of 622 ft elevation to 625 ft elevation as result of increase in the forebay elevation to MOP+3 because of a navigational hazard.

Damage to barge hulls reported from tugboat operators prompted an investigation at Little Goose Dam. On 11 April, an ROV survey in the forebay navigation channel confirmed the new floating guide wall anchor bracket was the source of the barge damage, as indicated by damage to that bracket. At MOP, the bracket sits at approximately an 11' depth, and a loaded barge drafts up to 13'-6". A temporary repair is being organized to move the guidewall cables to the old bracket, which sits 2 ft deeper, and remove the new bracket. A dive contractor has been tentatively scheduled to perform this work 27-29 April. Until repairs can be made, Little Goose forebay elevation has been raised to MOP+3, as coordinated through TMT 12 April, to reduce the navigation hazard to barge traffic. With current low flows, the ASW at Little Goose Dam is in the high-crest position (622 ft elevation) and with the higher forebay elevation the higher flow through the ASW enhances formation of an eddy in the tailrace and impacts passage conditions for adult and juvenile salmon. To reduce this eddy formation, the ASW crest was raised 3 feet to 625 ft elevation on 14 April. This MOC is to alert FPOM of this operational change and request comments and questions.

Type of outage required- Raise ASW crest from standard high crest elevation concurrent with change in MOP from 633 ft to 638 ft elevation until the guidewall cables can be moved and the navigation hazard can be removed.

Impact on facility operation (FPP deviations)- Raise ASW crest from standard high crest elevation of 622 ft to 625 ft elevation until the guidewall cables can be moved and the navigation hazard can be removed, approximately 2 weeks. Spill levels called for in the FPP and FOP will be maintained.

Impact on unit priority- None.

Impact on forebay/tailwater operation- Forebay elevation was raised to MOP+3 because of the navigation hazard.

Impact on spill- Spill operations called for in the FPP and FOP will be maintained.

Dates of impacts/repairs- Raised weir crest elevations will be during 15–29 April 2022.
Length of time for repairs- Repairs will occur 27-29 April

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;

   10-year adult fish count averages for Chinook salmon and steelhead for 14-29 April are 27,466 and 368, respectively.

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

   Predictions for Chinook salmon and steelhead runs are similar to 2021 returns and below the 10-year averages.

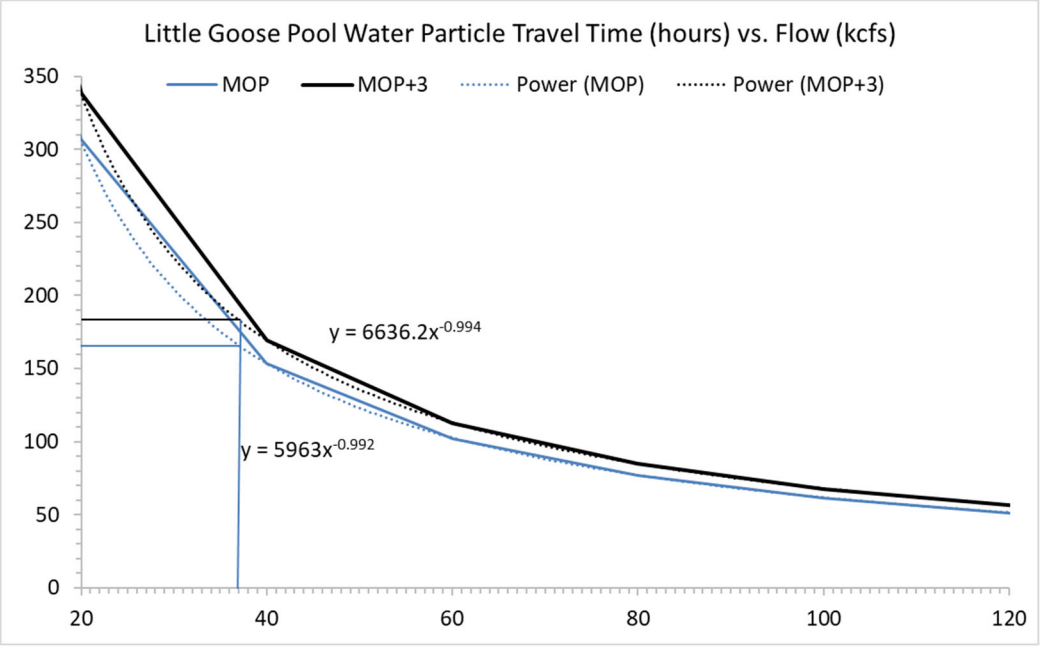
3. Estimated exposure to impact by species and age class (i.e., number or percentage of run exposed to an impact by the action);

   Estimated exposure will be 3.8% of the adult Chinook salmon run, 0.2% of adult steelhead. Mean smolt index values during 14-29 April are approximately 52% for Chinook salmon and 66% for steelhead for the 1 April – 31 October period (see Table LGS-2 in the FPP for run timing).

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.);

   This operation should improve tailrace conditions for adult passage at the dam by reducing strength of the tailrace eddy. Fewer juvenile salmonids may be passed through the ASW at the raised crest elevation but tailrace egress conditions should be improved.

   Raising the Little Goose pool to MOP+3 increases the pool volume and decreasing flow velocity, resulting in a decrease in water particle travel time, and thus potentially smolt travel time. Flows at Little Goose Dam averaged 36.9 kcfs during 14-27 April 2022, equating to estimated travel times of 165.9 hrs at MOP and 183.3 hrs at MOP+3, a difference of 17.4 hrs or a 10.5% increase in travel time (see Figure below).



Summary statement - expected impacts: Improved juvenile and adult salmon passage through the tailrace.

Downstream migrants: Raising the ASW may reduce number of fish passing this route but may improve tailrace egress, resulting minimal impact. Raising the Little Goose pool to MOP+3 may increase smolt downstream travel time through Little Goose pool by an estimated 10.5%.

Upstream migrants (including Bull Trout): Improved tailrace passage**.**

Lamprey: N/A

Comments from agencies:

Final coordination results: Consensus reached

After Action update: Little Goose Dam staff and contractors moved the floating guidewall bracket and reattached cables by the close of business on April 27, 2022. Operators were sent a Columbia Basin Teletype to adjust forebay elevations to MOP+1 by April 29 at 24:00 which is required for safe navigation in the Lower Granite Dam tailrace. The ASW crest height will also be returned to 622' (FPP, Chapter 8, 2.3.2.7.b.ii.).

Please email or call with questions or concerns.

Thank you,
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