

Supplement Analysis
for the
Columbia River System Operations Environmental Impact Statement
(DOE/EIS-0529/SA-01)

Bonneville Power Administration
Department of Energy



Background

In September of 2020, Bonneville Power Administration (Bonneville) along with the U.S. Army Corps of Engineers (Corps) and Bureau of Reclamation (Reclamation) issued a Record of Decision (ROD) for the Columbia River System Operations Environmental Impact Statement (CRSO EIS) (DOE/EIS-0529). The CRSO EIS dated July 2020 addressed the ongoing operations, maintenance, and configuration of the 14 federal Columbia River System (CRS) projects on the Columbia and Snake rivers. The 14 projects are Libby, Hungry Horse, Albeni Falls, Grand Coulee, Chief Joseph, Dworshak, Lower Granite, Little Goose, Lower Monumental, Ice Harbor, McNary, John Day, The Dalles, and Bonneville. The co-lead agencies (Corps, Reclamation, and Bonneville) share responsibility and legal authority for managing the CRS. These three co-lead agencies coordinate the operation of the CRS and worked together to develop the EIS. The Corps and Reclamation develop operating requirements for their projects. These are the limits within which a reservoir or dam must be operated. Some requirements are established by Congress when a project is authorized, while others are established by the agencies based on operating experience. Within these operating limits, Bonneville schedules and dispatches power. This process requires continuous communication and coordination among the three agencies. The co-lead agencies identified the Preferred Alternative, as described in detail in Chapter 7 of the Final EIS, as the Selected Alternative in the ROD.

As part of the CRSO EIS, the agencies considered six alternatives to CRS operations, maintenance, and configuration. The agencies analyzed the effects of these alternatives on the human environment, including environmental, economic, and social impacts. On February 28, 2020, the co-lead agencies released for public comment the Draft CRSO EIS describing the effects of these alternatives and identifying the agencies' Preferred Alternative. The 45-day public comment period ended on April 13, 2020, and the agencies reviewed and responded to these comments in the Final CRSO EIS. The co-lead agencies released the Final EIS on July 28, 2020, and the agencies issued a joint ROD on September 28, 2020.

Modifications to some of the operational measures identified under the Selected Alternative have been proposed to be implemented through April 2, 2023 on the lower Snake River and April 9, 2023 on the lower Columbia River. This supplement analysis (SA) was prepared to determine whether the proposed modifications to certain measures in the Selected Alternative are considered a substantial change to the Selected Alternative or significant new circumstance

or information relevant to environmental concerns that were not addressed by the EIS, such that either would warrant the need for a supplemental EIS.

Proposed Modifications

This SA analyzes modifications to certain operational measures at five of the CRS projects on the lower Snake and lower Columbia rivers. Except as described below, the agencies will implement CRS operations consistent with the Selected Alternative as outlined in the CRSO EIS ROD. Additionally, as discussed in the CRSO EIS ROD, operations will continue to be implemented consistent with other guiding documents including the annual Fish Passage Plan, including the Fish Operations Plan, Water Management Plan, and seasonal Water Management Plan updates. This includes, but is not limited to, reservoir elevation operations (or minimum operating pool) on the lower Snake and Columbia rivers and the summer spill component of the *Juvenile Fish Passage Spill Operation* measure.

As described in Section 7.6.3.14 in the CRSO Final EIS and Section 6.3.1.1.5 in the CRSO EIS ROD, the *Zero Generation Operations* measure would begin as early as October 15 and could continue through February 28, when power markets warrant and when river conditions make it feasible. Under the proposed modifications, the *Zero Generation Operations* measure would occur from early or mid-December through February 28 (based on an implementation trigger); reverting back to the operations contained in the No Action Alternative and described in detail in System Operational Request 2005-22 available here:

<http://pweb.crohms.org/tmt/sor/2005/2005-22.pdf>. Bonneville would operate this way during 2021 and 2022 consistent with System Operational Request 2021-6 available here: pweb.crohms.org/tmt/sor/2021/0915_SOR_2021-6.pdf.

Similarly, Bonneville will not exercise the flexibility it has for *Within Day Load Shaping at Dworshak Dam* and would not implement that operation during 2022 and 2023 consistent with System Operational Request 2021-1 (updated February 24, 2021 version) available here:

http://pweb.crohms.org/tmt/sor/2021/SOR_2021-1.pdf.

Next, the agencies propose to modify the spring component of the *Juvenile Fish Passage Spill Operations* measure described in the CRSO Final EIS in Section 7.6.3.9 and the CRSO EIS ROD in Section 6.3.1.1.1 for 2022 at five projects. The modification to the spill level fits within the *Set juvenile fish passage spill to not exceed 125 percent TDG* measure described in CRSO Final EIS Section 2.4.6.1; however, the dates when this spill level would be implemented are reduced from the *Set juvenile fish passage spill to not exceed 125 percent TDG* measure and would remain consistent with the Selected Alternative: April 3 to June 20 at the lower Snake River projects and April 10 to June 15 at the lower Columbia River projects.

Finally, the agencies propose to modify the *Surface Spill to Reduce Take of Overshooting Adult Steelhead* measure described in Section 7.6.4.3 of the CRSO Final EIS and CRSO EIS ROD Section 6.3.1.1.2 for 2022. The modification to the spill duration is consistent with *Spill through surface passage structures for steelhead overshoots, overwintering steelhead and kelt* measure described in CRSO Final EIS Section 2.4.6.1 as well as the National Marine Fisheries Service (NMFS) 2020 CRS Biological Opinion (Term and Condition G. i.-iv.). Term and Condition G.iv. indicates that the expansion into September could be warranted through adaptive

management processes and by inference would provide additional benefit, if implemented. The CRSO EIS ROD Section 6.3.1.1.2 also references the potential for adaptive management of the time period of spill. This modification does not contemplate expansion into the month of February given a lack of current information indicating a biological benefit that would justify the expansion.

Analysis

The proposed modifications are limited to certain operational measures related to daily load shaping at Dworshak Dam, time periods of use for zero generation operations, and fish passage spill operations for juveniles in the spring (April – June) at five projects and adults in the fall and late winter (expanding into September). Based on the analysis of the Selected Alternative and the other alternatives in the CRSO EIS and associated Endangered Species Act (ESA) consultations, these modifications could result in a slight change in effects to water quality, fish, and power generation. These modifications would result in similar effects to resources considered in the CRSO Final EIS. When these modifications are considered in the context of all of the measures included as part of the Selected Alternative, the modifications do not represent a substantial change to the Selected Alternative and are consistent with the effects described in the CRSO Final EIS.

Through discussions with NMFS and U.S. Fish and Wildlife Service (USFWS), the co-lead agencies have confirmed that the modifications to the Selected Alternative are within the range of effects considered in the ESA Section 7 consultations on the operations and maintenance of the CRS and would not require reinitiation of Section 7 consultation. Similarly, the proposed modifications would comply with all applicable laws, including the Clean Water Act and existing water quality standards, the National Historic Preservation Act, and the Northwest Power Act.

For the modifications related to the *Zero Generation Operations* measure, actions would revert back to the No Action Alternative as described in the CRSO Final EIS. The approximate two-month decrease in *Zero Generation Operations* would result in a negligible effect to total systemwide CRS power generation and would have a negligible to minor beneficial effect to migrating adult salmonids (CRSO Final EIS Section 3.5.3.5 for a discussion of expanded *Zero Generation Operations* under MO2) relative to the Selected Alternative. Therefore, there would be no substantial change to the Selected Alternative or significant new circumstance or information relevant to environmental concerns. Similarly, the co-lead agencies would not exercise the flexibility they have for *Within Day Load Shaping at Dworshak Dam*, so there is also no anticipated change or significant new circumstance or information relevant to environmental concerns from that proposed modification.

The proposed modification of the *Surface Spill to Reduce Take of Overshooting Adult Steelhead* measure under the Selected Alternative would extend the beginning date of surface spill operations from October 1 to September 1. The Selected Alternative adopted adaptive management processes specifically identifying modifications to surface spill operations for adult steelhead that would be initiated at the time of the spill operation to address potential effects to fish and other resources as they arise with equally or more protective operations than the Selected Alternative (Final EIS Section 7.6.4.3, page 7-49; FEIS Appendix R, Part 2; ROD Section 6.3.1.1.2; ROD Attachment 2, pages A2-6 and A2-7). NMFS indicated in its 2020

Biological Opinion that these adaptive management processes may have the potential to result in beneficial effects to steelhead (Term and Condition G. i–iv). Similarly, this adaptive management approach is identified in the Biological Assessment (Final EIS Appendix V part 1, Section 2.6.3.5, page 2-119) for ESA-listed species under USFWS management and is assumed to benefit bull trout. The approximate one-month expansion of *Surface Spill to Reduce Take of Overshooting Adult Steelhead* would result in a negligible effect to power generation (FEIS Section 7.7.9). Accordingly, extending this measure by one month and continuing adaptive management processes under the Selected Alternative is a proposed modification that does not represent a substantial change to the Selected Alternative or significant new circumstance or information relevant to environmental concerns.

Modifications to *Juvenile Fish Passage Spill Operations* would extend the timeframe (number of hours during the day between April 3 and June 20 at lower Snake River projects and April 10 and June 15 at lower Columbia River projects) to implement the *Set juvenile fish passage spill not to exceed 125 percent TDG* measure at five of the lower Snake and lower Columbia River projects. As such, compared to the Selected Alternative, this modification could result in a slight change in effects to water quality, fish, and power generation. Because this modification has the greatest potential to change the level of effects, additional analysis for water quality, fish, and power generation is provided below. As discussed in more detail below, the anticipated effects from the proposed modifications fall within the scope of effects analyzed in the Final EIS, which analyzed effects from the *Juvenile Fish Passage Spill Operations*, including the *Set juvenile fish passage spill to not exceed 125 percent TDG* measure, across all hours—the highest spill level analyzed in the Final EIS. Accordingly, the following discussion specifically evaluates the proposed *Juvenile Fish Passage Spill Operations* modification relative to the impacts evaluated in the Final EIS and the Selected Alternative for water quality, fish, and power to determine whether the modification represents a substantial change to the Selected Alternative or significant new circumstance or information relevant to environmental concerns.

1. Water Quality

The modification to the spring component of the *Juvenile Fish Passage Spill Operation* measure is anticipated to slightly extend periods of elevated total dissolved gas (TDG) levels at certain dams. In Section 3.4.3.7, the Final EIS specifically analyzed effects from the *Set juvenile fish passage spill to not exceed 125 percent TDG* measure, generally finding increases in TDG saturation (Final EIS Section 3.4.3.7, pages 3-286 and 3-287) over both the spring and summer spill seasons. Under the Selected Alternative, the co-lead agencies would continue to monitor effects from increases in TDG from the proposed modified *Juvenile Fish Passage Spill Operations* in the spring and could exercise their ability to modify spill to adhere to state water-quality standards (Final EIS Section 3.3.3.2, page 7-218; ROD Section 3.9; ROD Attachment 2, page A2-1). The Selected Alternative also includes a mitigation action measure *Temporary Extension of Performance Standard Spill Operation* (Final EIS Section 7.6.4.2, page 7-44; ROD Section 2.7.3) if there are TDG levels that result in impacts to salmonid or resident non-salmonid fishes or if increased spill levels result in delays to adult passage. If certain biological conditions for gas bubble trauma in the state water quality standards are exceeded or if a delay in adult salmon and steelhead upstream passage is observed, operations would revert to performance standard spill until the adverse impact to fish is resolved. Because the proposed

modifications are smaller than the water quality effects from the *Set juvenile fish passage spill to not exceed 125 percent TDG* measure analyzed in the Final EIS, and the co-lead agencies would continue to monitor TDG levels and utilize the *Temporary Extension of Performance Standard Spill Operation* mitigation measure and existing off-ramps in other guiding documents such as the annual Fish Passage Plan, including the Fish Operations Plan, Water Management Plan, and seasonal Water Management Plan updates, if necessary, this modification does not represent a substantial change to the Selected Alternative or significant new circumstance or information relevant to water quality effects.

2. Fish

The proposed *Juvenile Fish Passage Spill Operations* measure modification in spring would increase the volume of juvenile fish passage spill resulting in slight increases in effects that are consistent with the fish effects analyzed in the Final EIS. In Section 3.5.3.7, the Final EIS addresses the effects resulting from the operational measure *Set juvenile fish passage spill to not exceed 125 percent TDG* at the eight lower Snake River and lower Columbia River projects during juvenile fish passage spill in spring and summer, finding that higher spill has the net effect of routing greater numbers of juvenile salmon and steelhead into spill routes with fewer individuals traveling through powerhouse routes, such as fish bypass and turbine routes. The Final EIS also found that increased spill under that measure reduces instances of fish injury and shifts overall benefits to the abundance of returning salmon and steelhead (Final EIS Section 3.5.3.7, pages 3-626 to 3-628). The Final EIS analysis also considered potentially adverse effects to fish resulting from potential TDG exposure due to the higher and prolonged spill levels during the longer time period from March 1 to August 31, finding an increase in reach-average exposure to TDG during those months (Final EIS Section 3.5.3.7, page 3-627). The Final EIS also found that TDG exposure has the potential to delay adult upstream passage for migrating salmon and steelhead (Final EIS Section 3.5.3.3, page 3-401). In addition, the Final EIS found that higher spill operations can result in large eddies that slow juvenile migration (Final EIS Section 3.5.3.7, page 3-649). For bull trout, the Final EIS found increased potential for delayed upstream dam passage due to higher spill resulting in elevated TDG levels that potentially degrade feeding, migrating, and wintering habitat in the mainstem Snake River, as well as affect bull trout individuals leaving the CRS in May and June (Final EIS Section 3.5.3.7, page 3-675).

The proposed *Juvenile Fish Passage Spill Operations* modification in the spring would continue mitigation adopted for the Selected Alternative to temporarily extend performance standard spill upon observing a delay in upstream passage ("*Temporary Extension of Performance Spill Standard*" in Final EIS Section 7.6.4.2, page 7-44; ROD Section 2.7.3). Performance standard spill protects against unexpected fish effects, such as adult-migration delay and gas bubble trauma from spill up to 125% TDG (Final EIS Section 7.6.3.9, page 7-34). The Final EIS found that implementing this mitigation measure as part of the Selected Alternative reduces a potentially adverse effect from TDG to migrating fish (Final EIS Section 7.6.3.9, page 7-34).

For the reasons explained above, the proposed modification to *Juvenile Fish Passage Spill Operations* in spring would result in effects to fish consistent with those analyzed in the Final EIS, and with the implementation of the mitigation measure and existing off-ramps in other guiding documents such as the annual Fish Passage Plan, including the Fish Operations Plan,

Water Management Plan, and seasonal Water Management Plan updates, there would be no substantial change to the Selected Alternative relevant to fish effects.

3. Power

The proposed modification to the spring component of the *Juvenile Fish Passage Spill Operations* measure would reduce hydropower generation during the daily duration for spill operations between April and June at some projects. Additionally, the modification to the *Surface Spill to Reduce Take of Overshooting Adult Steelhead* measure would extend surface spill operations beginning September 1 and between the end of March to the beginning of spring spill. The highest levels of spill are expected to occur in April. In Section 3.7.3.6, the Final EIS analyzed the effects resulting in changes to power generation from large increases in spring and summer fish passage spill, and found that the largest decreases occur between March to the end of August when the eight fish-passage projects would operate only at minimum generation levels except for the wettest years under the *Set juvenile fish passage spill to not exceed 125 percent TDG* measure (Final EIS Section 3.7.3.6, page 3-978). In addition, the Final EIS analyzed the potential for reliability issues associated with the reduction of hydropower generation during these months and found increased potential for loss of load probability (Final EIS Section 3.7.3.6, page 3-980). The proposed modification to the spring component of the *Juvenile Fish Passage Spill Operations*, however, would fall well within this range of effects analyzed in the Final EIS because anticipated decreases in hydropower production would only occur during a period of low regional loads in the spring and would not impact the summer and winter months when demand is higher (e.g., “Firm Load Forecast” affected environment discussion in Final EIS Section 3.7.2.7, page 3-835). Thus, there would be little to no change in effects compared to the Selected Alternative. In addition, Bonneville holds contingency reserves under the Selected Alternative during fish passage spill operations to maintain grid reliability (Final EIS Section 7.6.3.10), which can have the effect of reducing planned spill levels in some circumstances. In addition, the Fish Operations Plan includes routine reliability tools and contingency operations to resolve adverse transmission conditions. For these reasons, the proposed operational modifications do not represent a substantial change to the Selected Alternative or significant new circumstance or information relevant to power concerns.

Overall, the proposed modifications would not result in a substantial modification to the Selected Alternative and are consistent with the effects described in the CRSO Final EIS, so do not represent significant new circumstance or information relevant to environmental concerns since the issuance of the Final EIS and ROD in 2020. Therefore, Bonneville determined the proposed modifications do not warrant preparation of a supplemental or new EIS.

Findings

Bonneville finds that the proposed activities and potential impacts related to the proposed operational changes are similar to those analyzed in the CRSO Final EIS (DOE/EIS- EIS-0529 2021). There are no substantial modifications in the CRSO EIS ROD Selected Alternative and no significant new circumstances or information relevant to environmental concerns bearing on the Selected Alternative or its impacts within the meaning of 10 CFR § 1021.314(c)(1) and 40 CFR §1502.9(d). Therefore, no further NEPA analysis or documentation is required.

/s/ Jeff Maslow

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Concur:

/s/ Katey Grange

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