Federal Agency Response to SYSTEM OPERATIONAL REQUEST 2022-1

The following Federal Agencies have participated in and support this response to SOR 2022-1: Bonneville Power Administration, Bureau of Reclamation, and U.S. Army Corps of Engineers

TO: Technical Management Team State and Tribal Fish Managers

DATE: January 21, 2022

SOR 2022-1: The Federal Agencies have received SOR 2022-1, which contains the request "that the following clarification be used to guide the frequency of zero-generation operation implementation: zero-generation at any single dam on the Lower Snake River will be implemented no more than 1 out of every 3 to 5 days, between the date of initiation (see SOR 2021-6) until the last day of February." The justification for this request includes no alleged impacts on fish species listed under the Endangered Species Act (ESA). The request also states that "[t]he Term Sheet for Stay NWF v. NMFS, ECF 2411-1 (3:01-cv-00640-SI) includes implementation of zero generation operations per date and abundance criteria described in SOR 2021-6. These criteria were met on December 17 in 2021."[1]

Agency Response: The implementation of zero generation operations in 2021 – 2022 tracks the duration and frequency described in the 2020 Biological Assessment of Effects of the Operations and Maintenance of the Federal Columbia River System on ESA-Listed Species (2020 CRS BA) and the analysis performed by National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS) in the 2020 Columbia River System Biological Opinions.[2] The 2020 CRS BA described the operation as follows:

> Between October 15 and February 28, when power market conditions warrant and when river conditions make it feasible, power generation at Snake River projects may cease during nighttime hours, most commonly implemented between 2300 and 0500 hours when demand for power is lowest and other renewable resources are generating surplus power (or both). This operation will end no later than 2 hours before dawn between October 15 and November 30. During the operation between December 15 and February 28, daytime hours will no longer be excluded from this operation, and up to 3 hours of daytime cessation will be part of the Proposed Action. This shift in current operation would allow operators to save water in low demand periods to use for hydropower generation during higher demand periods. The timing and need for ceasing power generation during this

[1] See http://pweb.crohms.org/tmt/sor/2022/0119_2022-1.pdf

[2] *Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Continued Operation and Maintenance of the Columbia River System*, National Marine Fisheries Service (July 24, 2020) ("2020 NMFS BiOp"), Section 2.8.3.1.4; *Biological Opinion addressing Operations and Maintenance of the Columbia River System in Washington, Oregon, Idaho, and Montana*, U.S. Fish and Wildlife Service (July 24, 2020) ("2020 USFWS BiOp"), Section 5.1.4.3.

> period of time is difficult to predict. However, based on previous operations between December 15 and February 28 and during nighttime hours only, Bonneville estimates the use of this operation may occur one out of every 3 to 5 days at each project. See the WMP [Water Management Plan] for additional details.[3]

The Federal Agencies will continue to implement the proposed action as described in the 2020 CRS BA, as adjusted by the *Term Sheet for Stay of Preliminary Injunction Motion and Summary Judgment Schedule* (Term Sheet).[4] The Term Sheet memorialized the agreement between the Federal Agencies, the Nez Perce Tribe, the State of Oregon[5], and others that the zero generation operation "as described in the CRSO EIS ROD will no longer commence as early as October 15, and will instead commence once the previously defined implementation trigger of 'few, if any' actively migrating anadromous fish (as described in SOR 2005-22) has been met. This trigger will be implemented in relation to both date (implementation will be limited to periods between December 1 and through February 28) and abundance."[6] To assist in the region's understanding of this zero generation operation, we offer the following additional information.

The language in the 2020 CRS BA described the historical frequency of implementation of the zero generation operation at all four lower Snake River projects as an average over multiple years and not as an in-season constraint. The frequency of implementation in any week or year has historically varied significantly depending on regional air temperature, power prices, river conditions, and conditions at the projects. Considering the year-to-year variability of implementation, the average provided in the 2020 CRS BA was intended to assist in the analysis of effects to ESA-listed species of this operation across multiple years and varying conditions and was not intended to provide a new set of in-season operational constraints. NMFS and USFWS analysis followed this description of operations; neither biological opinion conflated the BA's multi-year averages with a specific yearly constraint.

In accord, the actual implementation of this operation at each of the projects will reflect the historical usage patterns that vary from year-to-year. Implementation of this operation—both currently and historically—has tended to be in clusters of days because flow conditions or cold temperatures resulting in increasing power demand or the appropriate market conditions can be similar for consecutive days. In rare, extended, extremely cold periods in the region, the use has exceeded two weeks of consecutive days of implementation. The opposite is also common; mild regional temperatures and relatively flat power market conditions can result in very little implementation of this operation for extended periods of time. The 2021 zero generation operations are illustrative. In February 2021, a significant cold snap extended across the region and zero generation was implemented on consecutive days for approximately 12-18 days (the number of days varied by project). Outside of this cold snap, zero generation implementation in the 2021 operating year was significantly less.

---

[3] 2020 CRS BA at 2-65.
[4] ECF 2411-1, *NWF et al. v. NMFS et al.,* 3:01-cv-00640-SI (10/21/21).
[5] Both the Nez Perce Tribe and the State of Oregon's Department of Fish and Wildlife participated in the preparation and support SOR 2022-1.
[6] Term Sheet at Section III.B. SOR 2005-22 can be accessed here: http://pweb.crohms.org/tmt/sor/2005/2005-22.pdf

As of January 13, 2022, zero generation was implemented on several consecutive days at some projects during a recent cold snap.[7] Once regional temperatures rose, the implementation of zero generation subsided. This frequency of implementation is consistent with historic use of the zero generation flexibility and with the historical use average provided in the 2020 CRS BA. Once the date and abundance criteria were met on December 17, 2021, the zero generation operations were also implemented consistently with the Term Sheet.

Conclusion: SOR 2022-1 does not provide any grounds justifying a change in planned operations through adaptive management; the SOR proponents identified no fish impacts or new information that would justify adaptively managing or modifying operations. Because of this, the SOR merely seeks to modify an operation the Federal Agencies previously agreed to implement in the Term Sheet. We decline to modify the operation. And, for the 2022 operational season, we will not entertain future SORs or requests that seek only to revisit prior operations agreed to in the Term Sheet.

Expected use of zero generation: The expected future use of zero generation flexibility on the lower Snake River projects is estimated to be consistent with the historical use as observed since 2004. This use can range from several consecutive days of use to very little use across the four lower Snake River projects during the period of available days and hours as described in the WMP (See Figures 1 and 2 along with Tables 1 and 2). And the appropriate scale for measuring frequency and duration is multi-year averages, not single season durations (so long as the Term Sheet and the 2020 CRS BA's criteria are satisfied).

[7] See TMT meeting agenda and materials shared on historical use, zero generation flexibility 2021-2022 usage (12/20/2021 – 1/4/2022), and historical use of zero generation flexibility 2004 – current, 1/4/2022.

Figure 1. Compilation of historical use of zero generation from 2004 to 2020. Percent of available number of days (or hours) of zero generation used from the start of the operation after the biological trigger had been met through the month of February.

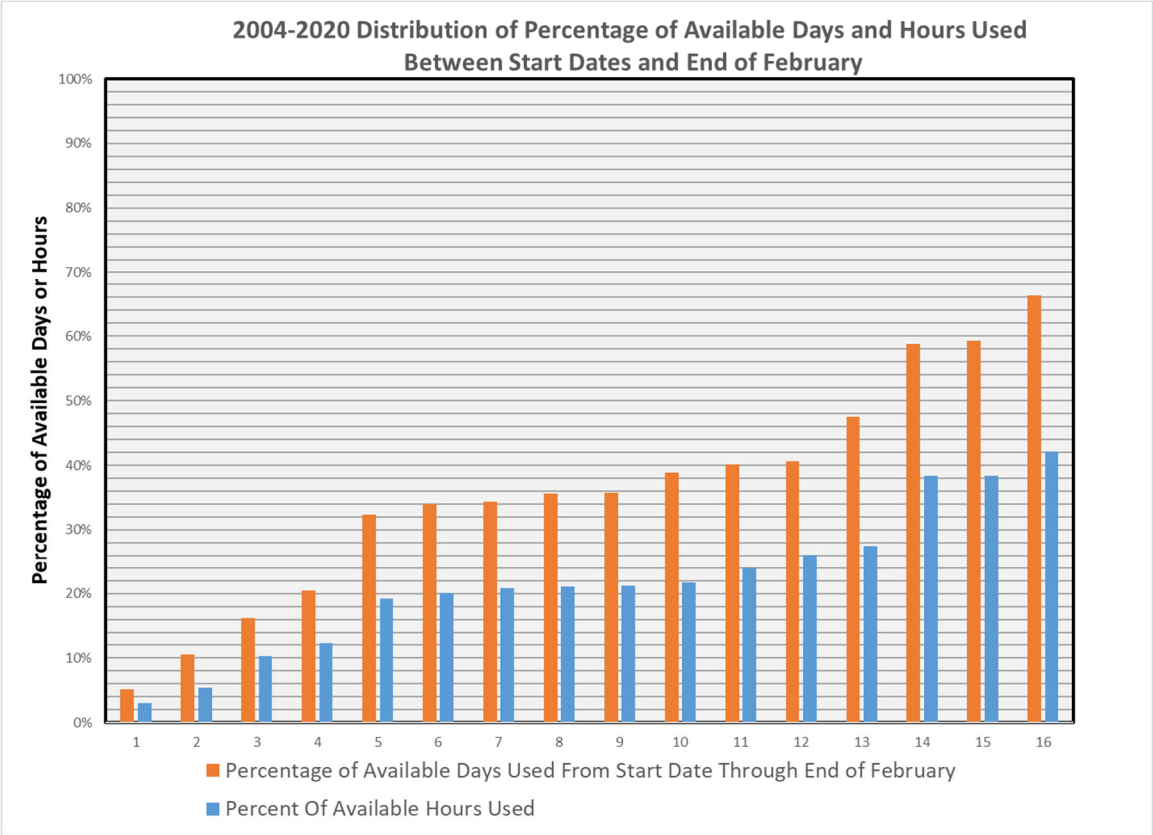

Table 1. Percent of available hours used between official start dates through the month of February, 2004-2020. See 2020 WMP for additional information (http://pweb.crohms.org/tmt/documents/wmp/2020/).

	LWG	LGS	LMN	IHR	Average
2004-2005	36.5%	46.6%	45.9%	39.5%	42.1%
2005-2006	0.8%	2.6%	4.9%	3.8%	3.0%
2006-2007	8.0%	14.9%	14.4%	12.0%	12.4%
2007-2008	11.5%	21.9%	24.5%	27.2%	21.3%
2008-2009	18.1%	20.8%	20.3%	17.8%	19.3%
2009-2010	21.6%	30.5%	30.0%	27.9%	27.5%
2010-2011	19.6%	22.6%	22.4%	19.8%	21.1%
2011-2012	32.2%	42.3%	40.6%	38.3%	38.3%
2012-2013	26.8%	31.9%	24.5%	12.5%	23.9%
2013-2014	18.6%	24.7%	23.1%	20.4%	21.7%
2014-2015	4.6%	17.0%	11.0%	8.7%	10.3%
2015-2016	19.3%	21.7%	19.7%	19.7%	20.1%
2016-2017	18.5%	23.1%	20.8%	21.1%	20.9%
2017-2018	8.0%	9.6%	0.5%	3.5%	5.4%
2018-2019	30.2%	37.9%	29.1%	7.2%	26.1%
2019-2020	39.9%	43.5%	40.6%	29.6%	38.4%
Average Percentage of Available Hours Used	**19.6%**	**25.7%**	**23.3%**	**19.3%**	**22.0%**

Table 2. Percent of available days used between official start dates through the month of February, 2004-2020. See 2020 WMP for additional information (http://pweb.crohms.org/tmt/documents/wmp/2020/).

	LWG	LGS	LMN	IHR	Average
2004-2005	60%	71%	70%	64%	66%
2005-2006	1%	4%	9%	7%	5%
2006-2007	13%	25%	24%	20%	20%
2007-2008	26%	38%	48%	49%	40%
2008-2009	31%	35%	32%	32%	32%
2009-2010	36%	51%	53%	51%	48%
2010-2011	33%	35%	35%	34%	34%
2011-2012	52%	60%	61%	61%	59%
2012-2013	45%	51%	41%	19%	39%
2013-2014	32%	38%	38%	35%	36%
2014-2015	8%	20%	20%	17%	16%
2015-2016	34%	35%	34%	34%	34%
2016-2017	33%	38%	36%	36%	36%
2017-2018	16%	17%	1%	8%	11%
2018-2019	46%	55%	48%	13%	41%
2019-2020	59%	64%	63%	51%	59%
Average Percentage Of Days Used	**33%**	**40%**	**38%**	**33%**	**36%**

Figure 2. Number of instances or occurrences of consecutive day use at each of the lower Snake River dams between the start date of the zero generation operation and through the month of February, 2004-2020. There have been limited conditions where two projects have utilized the zero generation operation up to 26 consecutive days.