

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Lock & Dam, Fishway and Fish Activities for Week 14 of 2024, which covers the period from 31 March 2024 to 06 April 2024.

**1. ITEMS OUT OF CRITERIA (OOC):**

- **Table 1.** FPP Items Out of Criteria.

<b>Date</b>	<b>Location</b>	<b>FPP Violation</b>	<b>Cause</b>	<b>Response</b>
03/31 – 04/06	BON	Unit Priority – U2, U3, U4, U5, U6, U7, U8, U9 & U10 F.O.	U2, U3, U4, U5, U6, U7, U8, U9, & U10 F.O., Oil Leak Investigation	PDT Team in place
03/31– 04/06	BON	Unit Priority – U12 F.O.	U12 F.O., Stator Ground	W.O., Next Available Unit Ran in Place
3/31	BON	Spill Pattern Out Of FPP Compliance	Failed Transducers, Bays 4, 5, 14, 15	W.O., Next Available Spillbay Ran in Place
<b>PH1:</b>				
03/31 – 04/06	PH1CC	FG 2-19 Stuck in the Mostly Closed Position, Should be Open	Mechanically Bound	W.O.
03/31 – 04/06	PH1CC	FG 2-21 Closed, Should Be Open	Mechanically Bound	W.O.
<b>Bradford Island:</b>				
03/24, 3/27 - 3/30	A-Branch	A-Branch Staff Gauge High >1.1’	Unknown	N/A
<b>Cascades Island:</b>				
3/31 -4/01	Cascades Island	FG6-11 Closed, Should Be Open	Mechanically Bound	W.O.
04/01	Cascades Island	FG6-19 Closed, Should be Open	Unknown	W.O.
<b>Washington Shore:</b>				
03/31 – 04/06	WA Shore Fishway	Weir 37 High, >1.1’	Weir 37 Blowdown Valve OOS	W.O.
03/31 – 04/02, 04/04 -04/06	WA Shore Fishway	Weir 38 High, >1.1’	Weir 37 Blowdown Valve OOS	W.O.
04/05	WA Shore Fishway	NDE <1’ Tailwater	Unknown	Investigation

- PH1 Collection Channel diffuser FG 2-19 was found mechanically bound in the mostly closed position on 02/24/22 by PH1 Mechanics. No repairs can be made until the PH1CC can be dewatered.
- PH1 Collection Channel diffuser FG 2-21 was found mechanically bound in the closed position by PH1 Mechanics on 02/24/24. No repairs can be made until the PH1CC can be dewatered.
- The Cascades Island Fishway diffuser FG 6-11 is mechanically bound in the closed position due to stripped shaft threads. A work order has been created and repairs will be made during the next full dewater of the Cascades Island Fishway.

- Cascades Island Fishway diffuser FG 6-18 was found stuck in the open position with limiter problems in the fall of 2022. A work order has been created and repairs have been attempted, but full repair requires complete dewatering of the fishway. These repairs will be made during the next full dewater of the Cascades Island Fishway.
- PH1 Unit Priority: Multiple oil sheens have been observed in the PH1 tailrace by Bonneville Staff on several occurrences over the past year. Please refer to MFRs 24BON001, 24BON003, 24BON004, 24BON005, 24BON007, and 24BON009 for details. Consequently, Units 2, 3, 4, 5, 6, 7, 8, 9, and 10 have been forced out of service and will remain OOS until a full dewater, inspection, and investigation of each Unit has been completed.

**2. OPERATION SUMMARY:**

a. Daily average river flows ranged from 139.6 to 163.0 kcfs. Daily average powerhouse forebay elevation ranged from 73.5' to 74.6' msl. Daily average Project tailwater ranged from 12.8' to 14.7' msl. Secchi disk measurements ranged from 6' to 7.0+'. Daily average water temperature ranged from 47 to 49°F.

b. Daily average spill ranged from 1.4 to 20.1 kcfs. Failed transducers on Spillbays 4, 5, 14, and 15 caused BON to run out of FPP Spillway criteria 31 March.

c. Unit Operation: **PH2** remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed.

• **Table 2. Main Unit Outages**

Unit	OOS	RTS	Reason	Duration
4	1631 on 29 Mar 2023	---	F.O., Oil Leak Investigation/5-YR Overhaul	---
3	1105 on 12 Jun 2023	---	F.O., Oil Leak Investigation	---
6	1714 on 03 Jan	---	F.O., Oil Leak Investigation	---
10	1714 on 03 Jan	---	F.O., Oil Leak Investigation	---
12	0731 on 05 Jan	---	F.O., Stator Ground	---
9	1220 on 11 Jan	---	F.O., Oil Leak Investigation	---
7	1409 on 15 Feb	---	F.O., Oil Leak Investigation	---
2	1013 on 26 Feb	---	F.O., Oil Leak Investigation	---
8	1359 on 26 Feb	---	F.O., Oil Leak Investigation	---
5	1433 on 26 Feb	---	F.O., Oil Leak Investigation	---
18	1316 on 27 Mar	1029 on 03 Apr	F.O., STS Repair	3 hours, 58 minutes

- Fish Units: Second Powerhouse Fish Units provide attraction flow for the Washington Shore (WS) fish ladder.

Fish Unit Outages: Fish Units are periodically paced into reserve shutdown (RS) to float trash when debris differentials become excessive and trash raking is not possible.

**Table 3.** Fish Unit Outages: Nothing to report

- **Table 4.** Fish Unit Drawdowns, in Feet.

<b>Date</b>	<b>F1</b>	<b>F2</b>
03/31	0.3'	0.3'
04/01	0.2'	0.3'
04/02	0.4'	0.4'
04/03	0.3'	0.6'
04/04	0.4'	0.6'
04/05	0.2'	0.4'
04/06	0.2'	0.4'

**2. MAINTENANCE ACTIVITIES:**

- a. Auxiliary Water System Closures:
  - FV 6-9 was closed for cleaning from 0722 to 0726 on 02 April
- b. STS/VBS Inspections: Nothing to report.
- c. Dewatering and Fish Salvages: Nothing to report.

**3. RESEARCH**

- a. Four Peaks Environmental - Fish counting contract: Daytime video counting (0400 to 2000 PDT) began on 01 December. Fish counts can be viewed [here](#).
- b. USFWS – Lamprey Metamorphosis Study: Juvenile lamprey researchers are onsite and the work is underway.
- c. Pacific States Marine Fisheries Commission – Smolt Monitoring: Sample collections at the Smolt Monitoring Facility (SMF) began on 02 March at 0700. Debris at the primary dewatering structure (PDS) and fish/debris separator ranged from light to moderate consisting mostly of sticks and other woody debris. Fallbacks observed this week: 12 steelhead.  
 A total of 22 fin clips were obtained from Pacific Lamprey macrophthalmia for Columbia River Inter-Tribal Fish Commission’s genetic studies this week.  
 The Bonneville Smolt Monitoring Facility was placed in Bypass mode at 0700 on 04 April. This action was taken in response to an emergency release of approximately 11 million Tule fall Chinook from Spring Creek NFH due to a disease outbreak at the hatchery. Due to the quantity of fish released and the proximity of the hatchery to the Project, it was necessary to suspend sampling to prevent incursion of pathogens into the facility. Sampling will likely be suspended for 7-10 days, to allow the bulk of these fish to pass the Project.

**4. FISHWAYS:**

- a. Project Biologists inspected from 31 March – 06 April
- b. Adult Fishways:
  - (1) The AFF was watered up and placed into bypass mode 10 April
  - (2) Sensor calibration checks occurred on 03 April
  - (3) SLEDs are installed at all locations.
  - (4) Bradford Island, Cascades Island, and Washington Shore Fishways remain in service.

c. Juvenile Fishways:

- (1) The ITS remains in service.
- (2) The hydro-cannon remains in service.
- (3) The B2CC remains in service, operating 24 HRS/day.
- (4) The DSM remains in service.
- (5) STSs remain in service.

d. Lamprey Fishways:

- (1) BI, CI, and WA Shore LPS's were put into service 1557 on 28 March. BI LPS Low water level alarm found after start-up. Pumps were removed 08 April and replaced with new pumps 10 April.
- (2) The Bradford Island Wetted Wall (BIWW) remains out of service.
- (3) The PH2 Lamprey Flume Structure (LFS) remains out of service.
- (4) The 2023 lamprey trapping and translocation activities have concluded for the 2023 season.
- (5) Avian Monitoring: Avian counts are recorded 01 April – 31 October. Avian hazing began 09 April

**5. WATER QUALITY MONITORING:**

- a. Fishway Temperatures: Fishway temperature monitoring has concluded for the 2023 season.
- b. Zebra Mussel Monitoring: No signs of colonization were observed this reporting week.

**7. CONSTRUCTION:** Nothing to report.

**8. HAZMAT, SPILLS AND CLEANUP:** Nothing to report.

**9. TELETYPES CURRENTLY IN EFFECT:**

- A teletype was distributed on 05 April replacing the previous teletype BON R 122023 1131 Tailwater Operation for Chum Incubation 5. This 6<sup>th</sup> revision to the teletype states: Effective, Wednesday 10 April 2024, at 0001 HRS, until further notice, Bonneville Dam may resume normal tailwater operations. Please see teletype BON R 040524 0742 for detailed operational guidance.
- A teletype was distributed on 03 April updating the spring spill caps and lack of load spill priority list for Snake and Columbia River Projects and BPA. This teletype is to be used from 03 until further notice. In the table provided in this teletype, Level 1 contains the spill level at the applicable State Water Quality Standard (WQS). For fish passage projects, the WQS is the level of spill specified in the 2024 Fish Operations Plan (FOP). The spill rate for the 125% gas cap is in the Level 2 for fish passage projects. The table provides lack of load spill levels (kcfs) and the order in which to spill from top to bottom, exhausting the complete list at each level before proceeding with the spill order at the next level. Please see teletype BON R 040324 for detailed operational guidance.
- A teletype was distributed on 05 April describing Spring Spill for juvenile fish passage at Bonneville. Effective Monday, 10 April at 0001 HRS, through Monday, 15 June at 2359 HRS, operate Bonneville Dam in accordance with the 2023 Fish Operations Plan (FOP) to provide spring spill for juvenile fish passage as described below:

- Pursuant to FOP Table 3, the 2023 spring spill operation at Bonneville Dam is as follows: 125% gas cap, 24 HRS/day. During all hours, spill at the rate defined in the Level 2 of the most recent spill priority list teletype. This spill rate is estimated to meet but not exceed 125% total dissolved gas (TDG) in the Bonneville Dam Tailrace (unless otherwise adjusted due to Project constraints or current conditions). The spill cap for Bonneville Dam will not exceed a maximum of 150 kcfs to avoid causing erosion in the spillway stilling basin.

Distribute spill according to spill patterns in the 2024 Fish Passage Plan (FPP) Table BON-16. Follow the pattern in the table for the spill rate that is closest to the target. Actual spill may range up to +/- 3 kcfs from the target due to Project operational limitations described in the FOP Sections 3 and 8.8.3.

Operate turbine unites within the operating ranges defined in FPP Section 4.2.1.1 (PH1) and 4.2.1.2 (PH2), unless otherwise instructed via teletype.

During periods of high spill, there may be a need to temporarily reduce spill or modify patterns to maintain safe navigation in the tailrace (per FOP Section 4.6).

If river flow is too low to maintain FOP spill and minimum generation requirements in FOP Table 1, operate at minimum generation and spill the remainder of outflow. This operation supports power system reliability during low flows.

Please see teletype BON R 040523 1237 for more thorough details.

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