

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Lock & Dam, Fishway and Fish Activities for Week 01 of 2024, which covers the period from 31 December 2023 to 06 January 2024.

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

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

Date	Location	FPP Violation	Cause	Response
01/02	BON	Unit Priority – U3 F.O.	U3 F.O., Oil Leak Investigation	W.O.; Next Available Unit Ran in Place
<b>Bradford Island: Nothing to Report.</b>				
<b>Cascades Island:</b>				
01/02 – 04	CI Fishway	FG 6-12 Closed, Should be Open	Mechanically Bound	W.O.
01/02 – 04	CI Fishway	FG 6-18 Open, Should be Closed	Mechanically Bound	W.O.
<b>Washington Shore:</b>				
01/02 – 04	WA Shore Fishway	Weir 37 High, >1.1’	Weir 37 Blowdown Valve OOS	W.O.
01/02 – 04	WA Shore Fishway	Weir 38 High, >1.1’	Weir 37 Blowdown Valve OOS	W.O.

- 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 6-12 is mechanically bound in the closed position for unknown reasons. 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 limitorque 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.

**2. OPERATION SUMMARY:**

- a. Daily average river flows ranged from 117.3 to 127.8 kcfs. Daily average powerhouse forebay elevation ranged from 72.6’ to 75.0’ msl. Daily average project tailwater ranged from 11.5’ to 12.1’ msl. Secchi disk measurements remained at 7.0+’. Daily average water temperature ranged from 43 to 44°F.
- b. Daily average spill remained at 0.5 kcfs.
  - Spillbay 18 remains closed for the duration of IWWP and winter maintenance activities in the Bradford Island Fishway.
- 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	---
11	0731 on 05 Jan	0846 on 05 Jan	F.O., Generator Ground Alarm	1 hour, 15 mins
12	0731 on 05 Jan	---	F.O., Stator Ground	---

- 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. Single Fish Unit Operations (FPP Table BON-12) began on 04 December when F2 was placed OOS for a 2-YR OH.

**Table 3. Fish Unit Outages**

Unit	OOS/RS	RTS	Reason	Duration
F2	0001 on 04 Dec	---	P.O., 2-YR Overhaul	---

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

Date	F1	F2
12/31	0.6'	---
01/01	0.9'	---
01/02	0.2'	---
01/03	0.2'	---
01/04	0.1'	---
01/05	0.1'	---
01/06	0.1'	---

**2. MAINTENANCE ACTIVITIES:**

- a. Auxiliary Water System Closures:
  - FV 6-9 was placed into manual for cleaning from 0840 to 0851 on 02 January.
  - FV 6-9 was placed into manual for cleaning from 1607 to 1615 on 04 January.
- b. STS/VBS Inspections: STS's remain OOS for the winter maintenance season.
- c. Dewatering and Fish Salvages:
  - Project Biologists fished the FG 3-21 diffuser pit in the afternoon of 02 January as part of winter maintenance activities. 3 juvenile salmonids, 1 adult lamprey, 12 sculpin, and 1 stickleback were recovered in good condition and released downstream.
  - Project Biologists also fished the FG 3-9 diffuser pit in the afternoon of 02 January. 13 juvenile salmonids, 2 adult lamprey, 2 sculpin, 1 stickleback, and 4 other non-gamefish were recovered in good condition and released downstream.
  - Project Biologists fished the FG 3-8 diffuser pit in the afternoon of 04 January. 2 rainbow trout, 1 juvenile salmonid, 5 sculpin, and 2 other non-gamefish were recovered in good condition and released

downstream.

### 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.

### 4. FISHWAYS:

- a. Project Biologists inspected 02 – 04 January.
- b. Adult Fishways:
  - (1) The AFF remains out of service for the winter maintenance season.
  - (2) Sensor calibration checks occurred on 03 January.
  - (3) SLEDs are installed at all locations.
  - (4) The Cascades Island and Washington Shore Fishways remain in service. The Bradford Island Fishway was taken out of service for the winter maintenance season on 05 December.
- c. Juvenile Fishways:
  - (1) The ITS remains in service.
  - (2) The hydro-cannon remains out of service for the season.
  - (3) The B2CC was closed for the season on 01 September but remains available to flush trash or provide surface passage for fish if involuntary spill occurs outside of fish passage spill season. (**FPP BON Section 2.2.2.**)
    - The B2CC was opened to float trash from 0715 to 1155 on 03 January.
  - (4) The DSM was taken out of service on 18 December for the winter maintenance season.
  - (5) STSs remain out of service for the winter maintenance season.
- d. Lamprey Fishways:
  - (1) BI, CI, and WA Shore LPS's remain out of service.
  - (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.

**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:**

- Installation of the B-Branch LPS in the B-Branch Entrance Bay is underway.

**8. HAZMAT, SPILLS AND CLEANUP:**

- On Wednesday 03 January 2024 at approximately 0940, Bonneville Staff observed a sheen that had formed at the North end of the PH1 tailrace between Units 6 and 10. Project spill response crews were deployed by boat at approximately 1030 to deploy an absorbent boom. A sample was collected from the tailrace to be sent for laboratory analysis and comparison. The estimated sheen size was 10' x 80'. The sheen was not observed beyond the tailrace. This event resulted in the shutdown of PH1 Units 6 and 10. Plans for a full inspection and investigation of both units to determine the source of this oil sheen are currently underway. Units 6 and 10 will remain out of service (OOS) until the source of the leak can be determined.

**9. TELETYPES CURRENTLY IN EFFECT:**

- A teletype was distributed on 30 August detailing the fall/winter spill priority list and fall/winter spill caps. This teletype provides the order that projects spill for lack of load conditions and is to be used until further notice. Please see teletype BON R 083023 1555 for further details.
- A teletype was distributed on 20 December, replacing the previous teletype BON R 110623 1459 Tailwater Operation for Chum Spawning 3. This 4<sup>th</sup> revision to the teletype states: Effective, Sunday 31 December 2023, at 0001 HRS, until further notice, the Bonneville Dam minimum tailwater elevation is 11.5 ft during all hours. The intent of this operation is to ensure sufficient tailwater elevation to the protect chum redds in the Ives/Pierce Island area during the egg incubation period. Please see teletype BON R 122023 1131 for more details.
- A teletype was distributed on 20 December replacing the previous teletype BON R 122023 1131 Tailwater Operation for Chum Incubation 4. This 5<sup>th</sup> revision to the teletype states: Effective, Sunday 31 December 2023, at 0001 HRS, until further notice, Bonneville Dam minimum tailwater elevation is 11.3 ft during all hours. The intent of this operation is to ensure sufficient tailwater elevation to protect chum redds in the Ives/Pierce Island area during the egg incubation period. This 5<sup>th</sup> revision's updated minimum tailwater elevation was based on an updated WDFW chum salmon survey data that occurred on 20 December. Please see teletype BON R 122023 1340 for more details.

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