CENWP-ODB 7 December, 2020

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for **Week 49** of 2020, which covers the period from **29 November – 5 December.**

1. OPERATION SUMMARY:

a. Daily average river flows ranged from 135.3 to 146.5 kcfs. Daily average powerhouse forebay elevation ranged from 72.6' to 73.2' msl. Daily average project tailwater ranged from 11.9' to 12.9' msl. Secchi disk measurements remained at 7'. Daily average water temperature ranged from 45-48°F.

b. Daily average spill ranged from 0.1 to 1.0 kcfs.

c. Unit Operation. PH2 was the priority powerhouse until 01 December, when PH1 became the priority powerhouse during PH2 winter maintenance. PH1 will remain the priority powerhouse until the end of February 2021. Main unit drawdowns are measured every Monday and more frequently as needed.

- Table 1. Main Unit Outages.

Unit	OOS	RTS	Reason
7	1950 on 29 Nov	0719 on 30 Nov	Forced outage, failed turbine pump
1	0700 on 30 Nov	---	Station service work
2	0700 on 30 Nov	---	Station service work
18	1250 on 30 Nov	---	4 yr overhaul

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

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

- Table 2. Fish Unit Outages.

Unit	OOS	RTS	Reason	Duration
F1	0610 on 01 Dec	---	2 yr overhaul/WA Shore Fishway outage	---
F2	0610 on 01 Dec	---	2 yr overhaul/WA Shore Fishway outage	---

- Table 3. Fish Unit Drawdowns, in Feet.

Date	F1	F2
11/29	0.2'	0.7'
11/30	0.3'	0.8'

2. MAINTENANCE ACTIVITIES:

a. Auxiliary Water System Closures.

- The WA Shore North UMT bulkhead was installed at 0730 on 02 December.
- FV 1-1 was closed for cleaning from 0720 to 0828 on 03 December.
- FV 3-7 was closed for cleaning from 1024 to 1150 on 03 December.
- FV 3-9 was closed for cleaning from 1024 to 1150 on 03 December.
- PH1 OWS was placed into manual for the TD4100 weekly PM at 1028 and returned to auto at 1107 on 03 December.

- The BI OWS was bypassed to Lagoon for SQ1 work at 1111 on 04 December and was back to normal at 1300.

b. STS/VBS Inspections. Nothing to report.

c. Dewatering and Fish Salvages.

- At 1500 on 30 November, project fishery biologists entered the U18 scroll case to salvage fish. No fish were recovered.
- At 0845 on 01 December, project fishery biologists entered the U18 draft tube to salvage fish. No fish were present.
- On 02 December, the Cascades Island Fishway was dewatered for winter maintenance. Several fish salvages commenced.
  (a) Location 1: Cascades Island Fish Ladder. 1 adult salmonid, 12 juvenile salmonids, 2 sculpin, and 5 smallmouth bass were recovered. All fish were in good condition and released above the nav lock.
  (b) Location 2: UMT. 10 adult salmonids, 20 juvenile salmonids, and a mix bag of approximately 200 suckers, peamouth, and smallmouth bass were recovered. All fish were in good condition and released above the nav lock except for one tank of predominately juvenile salmonids which was released at the Hamilton Island boat launch.
  (c) Location 3: Cascades Island 5-3/5-4 screen pit. 1 juvenile salmonid and 20 juvenile shad were recovered. All fish were in good condition and released into the forebay.
- On 03 December the Washington Shore Fish Ladder was dewatered to tailwater for winter maintenance. Approximately 100 adult salmonids (including 3 adult chum), 30 juvenile salmonids, and a mix bag of approximately 200 other species including peamouth, pikeminnow, suckers, sculpin, and smallmouth bass were recovered and released into above the nav lock. 1 adult salmonid was discovered as a mortality while the remaining fish were in good condition. No sturgeon or lamprey were present. It can be noted that there were more adult salmonids present in the serpentine weirs than expected.

3. RESEARCH:

a. Four Peaks Environmental - Fish counting contract: Daytime video counting (0400 to 2000) began on 01 December. Fish counts can be viewed here.

b. USFWS – Lamprey Metamorphosis Study: Juvenile lamprey are onsite and the work is underway.

c. State Agency Pinniped Trapping- Sea lion trapping has concluded for the year.

d. ODFW- ODFW fish biologists continue to accompany USACE Project Biologists for fish salvage operations in CI Fishway and WA Shore Fishway to collect data from any sturgeon collected.

4. FISHWAYS:

a. Project biologists inspected 29-30 November and 1 December.

b. Fish passage plan observations.

- Table 5. FPP Items Out of Criteria.

Date	Location	FPP Violation	Cause	Response
Bradford Island				
11/30, 12/01	PH1CC	S. Ent. Diff. < 1.0’	Possible Equipment Calibration issues	NA
Cascades Island – Nothing to report.				

11/29	CI Entrance	CI Ent Diff < 1.0’	NA	NA
Washington Shore – Nothing to report.				

- FG6-11 (Cascades Island) is broken in the partially open position. The diffuser shaft broke away from the motor. Due to the subsidence issues at Cascades Island, repairs cannot occur until crane support is allowed in the vicinity. FG6-11 should be open at tailwaters ≥ 14.0’.

- FG6-12 (Cascades Island) is mechanically bound in the open position. The diffuser should only be open with tailwaters ranging from 11.0’-33.0’. Due to the subsidence issues at Cascades Island, repairs cannot occur until crane support is allowed in the vicinity.

c. Adult Fishways.

(1) The Cascades Island Fishway went out of service and into orifice flow at 0610 on 01 December.

(2) The Washington Shore Fishway went out of service and into orifice flow at 0610 on 01 December.

(3) At 0730 on 02 December, the Washington Shore UMT bulkhead was installed.

(4) At 1045 on 02 December, the CI UMT bulkhead was placed on sill.

(5) At 1442 on 03 December, the WA Shore Fishway exit bulkhead was installed.

(6) The AFF was taken out of service for the winter on 25 Nov.

(7) Sensor calibration occurred on 30 Nov.

(8) SLEDs are installed at all locations.

d. Juvenile Fishways.

(1) The ITS remains in service (auto-chain gates 3B, 6C, & 10B only).

(2) The hydro-cannon remains in service.

(3) The B2CC remains out of service.

(4) The DSM remains in service.

(5) STSs are installed.

e. Lamprey Fishways.

(1) LPSs 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 AFF lamprey trap remains out of service.

(5) The CI Lamprey trap remains out of service.

f. Avian Monitoring. Avian counts are recorded 01 April – 31 October.

5. WATER QUALITY MONITORING:

a. Fishway Temperatures. Temperature logs are no longer being taken this year, data collection will begin again 01 March, 2021.

b. Zebra Mussel Monitoring. No signs of colonization were observed this reporting week.

6. CONSTRUCTION: Nothing to report.

7. HAZMAT, SPILLS AND CLEANUP: Nothing to report.

8. TELETYPES CURRENTLY IN EFFECT:

- A teletype was sent out on 21 October that became effective starting 01 November at 0600 and remains in effect until further notice. The Bonneville Dam must operate at all hours with a project outflow to provide a tailwater with the elevation in the range of 11.5-13 feet. If necessary, to increase project outflow, the tailwater may be operated up to 16.5 feet during nighttime hours (1700-0600) with the highest concentrations around 2400. If necessary, after that, tailwaters may be operated to up to 18.5 feet elevation during nighttime hours to increase project outflow. Then, if the increasing river flow precludes the ability to manage the tailwater in the previous steps, Bonneville Dam may operate at 13.0-16.5 feet during daytime hours (0600-1700) and up to the maximum within project 24-hour ramp rate limits during nighttime hours (1700-0600). The reason for this operation is to improve the conditions at the Ives/Pierce Island Complex for Chum Salmon spawning.
- On 24 November, a teletype was sent out stating that the Bonneville Dam spillway would be tagged out and not available on 02 December between 0730 and 1500 hours to support an ROV survey conducted below the Bonneville Dam.

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