

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 49 of 2015, which covers the period from 29 November – 05 December 2015.

1. OPERATION SUMMARY:

a. Daily average river flows ranged from 119.1 to 148.7 kcfs. Daily average powerhouse forebay elevation ranged from 73.4 to 74.6 msl. Daily average project tailwater ranged from 11.7 to 13.4 msl. Secchi disk measurements ranged from 6.0 to 7.0' or greater all week. Daily average water temperature ranged from 45 to 47°F.

b. Spill bays 1 and 18 are open 0.5' during daytime hours to provide attraction flow to the B-branch and Cascades Island fish ladders. Daily average spill ranged from 0.5 to 1.0 kcfs.

c. Unit Operation. Powerhouse two remains the priority powerhouse. Main unit draw downs are measured every Monday and more frequently as needed.

(1) Table 1. Unit Outages.

Unit	OOS Date	RTS Date	Reason
9	1053 on 17 Nov	---	5-year overhaul, bank 9/10 maint
10	1015 on 16 Nov	---	Annual maintenance and air gap
11	1003 on 31 Aug	1543 on 04 Dec	Kaplan pipe leak, T11 outage
12	0001 on 1 Sep	1543 on 04 Dec	T11 outage
13	0001 on 1 Sep	1543 on 04 Dec	T11 outage
14	0001 on 1 Sep	1543 on 04 Dec	T11 outage
15	0834 on 03 Dec	1503 on 03 Dec	STS removal
18	1239 on 30 Nov	1346 on 30 Nov	Rake trash

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

(1) The fish units were placed on standby to float trash, or to allow trash to be raked on units 17 and 18 without causing debris to be pulled to the fish units, during the following times:

F1: 0104 to 0343 on 29 Nov
 1234 to 1407 on 29 Nov
 2320 on 29 Nov to 0231 on 30 Nov
 1634 on 30 Nov to 0204 on 01 Dec

F2: 1234 to 1404 on 29 Nov
 2320 on 29 Nov to 0233 on 30 Nov
 1630 on 30 Nov to 0205 on 01 Dec
 1857 to 2116 on 01 Dec

1933 to 2113 on 01 Dec
 1852 to 2101 on 02 Dec
 0932 to 1340 on 03 Dec
 1703 to 1839 on 03 Dec
 2041 on 03 Dec to 0302 on 04 Dec
 0418 to 0601 on 04 Dec
 0812 to 0848 on 04 Dec
 1854 to 2017 on 04 Dec
 2217 on 04 Dec to 0420 on 05 Dec

1852 to 2102 on 02 Dec
 0930 to 1342 on 03 Dec
 1645 to 1838 on 03 Dec
 2041 on 03 Dec to 0302 on 04 Dec
 0418 to 0600 on 04 Dec
 0812 to 0846 on 04 Dec
 1335 to 1414 on 04 Dec
 2217 on 04 Dec to 0427 on 05 Dec

(2) Table 2. Fish unit drawdowns, in feet. (Measured at night, drawdowns taken throughout the day not included.)

Date	F1	F2
11/29	4.0	5.5
11/30	18.3	0.3
12/1	1.2	1.4
12/2	0.9	8.0
12/3	4.0	12.0
12/4	0.5	5.0
12/5	0.4	0.4

2. ACTIVITIES:

a. Auxiliary Water System Closures.

- (1) FV1-1 was closed for cleaning from 0718 to 0754 on 30 Nov, from 0703 to 0719 on 01 Dec, from 0736 to 0815 on 2 Dec, from 0723 to 0747 on 3 Dec.
- (2) FV3-7 was closed for cleaning from 0808 to 0900 on 30 Nov, and from 0900 to 0923 on 02 Dec.
- (3) FV3-9 was closed for cleaning from 0808 to 0900 on 30 Nov, from 0747 to 0802 on 1 Dec, from 0856 to 0923 on 2 Dec, and from 0801 to 0845 and 1610 to 1627 on 03 Dec.
- (4) At 0930 on 05 Dec, Bradford Island fishways were taken to orifice flow and fish valves 1-1, 3-7, 3-9, 4-3, and 4-4 were closed.

b. STS/VBS inspections. Table 2a.

Unit	Date	Comments
11-13	12/1	STS removed
14	12/2	STS removed
15	12/3	STS removed
16-17	11/25	STS removed
18	11/24	STS removed

c. Dewatering and Fish Salvages.

- (1) On 03 December, Project Biologists recovered 4 Steelhead Trout, 10 Pacific Lamprey, 1 catfish, and ~2000 resident fishes composed of shad, suckers, pikeminnow, and peamouth from the AFF fish ladder. The Pacific Lamprey and salmonids were returned to the forebay. All other fishes were returned to the WA shore main ladder.

3. RESEARCH:

- a. Normandeau – Fish Counting. Visual counting continues.

4. FISHWAYS:

- a. Project biologists inspected 29 November – 02 December.
 b. Fish passage plan observations.

(1) Table 3. FPP out of criteria items.

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND – See below				
12/1-2	A-branch	Water over weir > 1.1'	Suspected conduit leak	None
11/29-12/1	PH1CC	S entrance < 1.0'	WG-1 failure	See 4.b.2
CASCADES ISLAND – None				
WASHINGTON SHORE – See below				
11/30-12/2	PH2CC	Diff gate B5 open	Removed for repair	See 4.b.5
11/30	Weir 37	Water over weir > 1.1'	Unknown	None

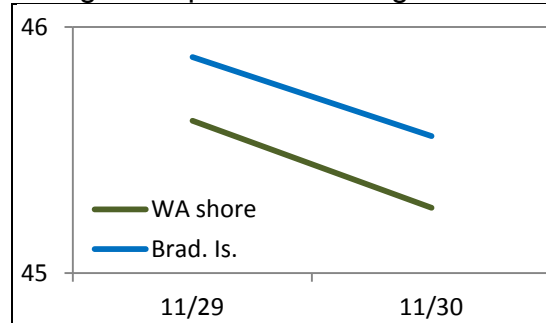
- (2) WG-1, one of the south PH1CC entrances, experienced a gate failure on 17 November. Divers recovered the gate’s picking beam on 04 August. Repairs are ongoing. The gate is estimated to return to service during the 2015/16 winter maint.
- (3) A-branch diffuser FG3-3 is mechanically bound. Repairs are not possible until A-branch is dewatered below tailwater during the 2015/16 winter maintenance period.
- (4) B-branch gate 4N, adjacent to the fish entrance, had a bad motor. It was removed on 27 July and has been repaired. It’s waiting reinstallation during the 2015/16 winter maintenance. 4N is closed and 4S is open in its place. Both gates should be open below tailwaters of 9.0 msl.
- (5) PH2CC diffuser A2 was unable to be repaired during winter maintenance and remains closed. It should be open when tailwater is above 13.0 msl. The gate for diffuser B5 was removed for repairs and therefore cannot be closed. It should be closed below tailwaters of 12.0 msl.

c. Fishway Temperatures. Temperatures are taken from 01 March through 30 November. Forebay temperatures can be found [online](#).

(1) Table 4. Daily Average Temperature in Degree Fahrenheit (°F).

Date	Fishways	
	Brad. Is.	WA shore
11/29	45.9	45.6
11/30	45.6	45.3

(2) Chart 1. Daily Average Temperature in Degree Fahrenheit (°F).



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

e. Avian Monitoring. Bird counts are made between 01 April and 31 October.

f. Adult Fishways.

(1) Calibration occurred on 03 December.

(2) 11 of 12 floating orifice gates (FOGs) are installed; one gate is out for maintenance. FOG SLEDs are installed.

(3) SLEDs were installed in the PH2 entrances on 26 October and in Cascades Island upon its RTS on 25 November. The PH1 SLEDs are removed.

(4) The Bradford Island fish ladders were placed in orifice flow on 05 December.

g. Juvenile Fishways.

(1) The ITS remains open.

(2) The hydro-cannon remains in service.

(3) The B2CC is opened according to [FPP](#) section 2.4.2.5.t and teletype c, below.

(4) The DSM remains in service.

h. Lamprey Fishways.

(1) All LPSs remain out of service.

5. CONSTRUCTION: Nothing to report.

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

7. TELETYPES CURRENTLY IN EFFECT:

a. A teletype sent on 30 March updates the spill caps and lack of load conditions to be used from 0000 on 01 April until further notice.

b. A teletype sent on 6 November states that effective 0600 on 7 November until further notice, operate BON tailwater in the range of 11.5 – 12.5'. If necessary due to outflows, tailwater may be operated up to 13.0' at any time, returning to the target range whenever possible. Then if necessary, tailwater may be operated in the following order: up to 18.5' from the hours 1700 – 0600, then in the range of 13.0 – 16.5' during daytime hours (0600 – 1700) and up to the maximum within ramp rate limits at night. This operation is for Chum spawning below BON at the Ives/Pierce Island complex.

c. A teletype sent on 24 November states that effective immediately until no later than 15 December, operate the B2CC during daytime hours as defined in Table BON-5 in the FPP, to provide an alternate fallback route for fish since PH2 STSs are pulled.

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