

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 07 of 2017, which covers the period from 12 February to 18 February.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 214.7 to 267.6 kcfs. Daily average powerhouse forebay elevation ranged from 72.6' to 74.4' msl. Daily average project tailwater ranged from 18.3' to 21.7' msl. Secchi disk measurements stayed between 3 and 5.0'. Daily average water temperature ranged from 35 to 36°F.
- b. Spill bays 01 and 18 are open 0.5' to provide attraction flow for Cascades Is fishways, respectively. Daily average spill ranged from 0.8 to 62.7 kcfs.
- c. Unit Operation. PH1 remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed.

(1) Table 1. Unit Outages.

Unit	OOS Date	RTS Date	Reason
1	0820 on 15 Feb	0924 on 15 Feb	Rake Trash
2	1001 on 15 Feb	1147 on 15 Feb	Rake Trash
3	1538 on 14 Feb	1633 on 14 Feb	Rake Trash
3	0734 on 15 Feb	0817 on 15 Feb	Rake Trash
4	1320 on 14 Feb	1535 on 14 Feb	Rake Trash
5	1043 on 14 Feb	1318 on 14 Feb	Rake Trash
6	0846 on 14 Feb	1043 o 14 Feb	Rake Trash
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
9	1449 on 13 Feb	1608 on 13 Feb	Rake Trash
9	0714 on 14 Feb	0844 on 14 Feb	Rake Trash
10	1304 on 13 Feb	1435 on 13 Feb	Rake Trash
11	1409 on 15 Feb	1529 on 15 Feb	Rake Trash
12	2007 on 14 Sep	---	Exciter ground
13	1534 on 15 Feb	1619 on 15 Feb	Rake Trash
14	0857 on 11 Feb	1622 on 16 Feb	FGE Mods
15	0741 on 16 Feb	0839 on 16 Feb	Rake Trash
16	0845 on 16 Feb	1030 on 16 Feb	Rake Trash
17	1033 on 17 Feb	1114 on 16 Feb	Rake Trash
18	1306 on 15 Feb	1407 on 15 Feb	Rake Trash

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

(1) F1 and F2 went OOS for winter maintenance at 0300 on 25 November.

2. MAINTENANCE ACTIVITIES:

a. Auxiliary Water System Closures.

- (1) FV1-1 was closed for cleaning from 0702 to 0724 on 13 Feb, and from 0719 to 0722 on 16 Feb.
- (2) FV3-7 was closed for cleaning from 0733 to 0830 on 13 Feb, and from 0737 to 0830 on 16 Feb.
- (3) FV3-9 was closed for cleaning from 0733 to 0805 on 13 Feb, 0737 to 0830 on 16 Feb.

b. STS/VBS inspections. No inspections were conducted this week.

c. Dewatering and Fish Salvages. No salvages were conducted this week.

d. Winter Maintenance update.

- (1) FV6-9 was being worked on by electricians. B-valves are complete. A-valves are complete. C-valves are complete. The Emergency Relief Gate in the DSM is up and running. Crowder work is underway. Fish units were found to be water tight. STS maintenance is completed. WA shore fishway exit channel was cleared of mud and debris.

3. RESEARCH:

a. Normandeau – Fish counting. Video counting continues.

4. FISHWAYS:

a. Project biologists inspected 13, 15, and 16 February.

b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND				
1/17 to present	A-branch	FG3-5 closed	Bad hardware alarm	See below
12/29 to present	A-branch	FG3-4 closed	Shaft/gate vibration	See below
2/13,15, 16	A-branch staff gauge	Water over weir > 1.1'	FV3-7 conduit leak	Repair in 2017
2/16	PH1 Collection Channel	South differential <0.9'	Unknown	Monitor
CASCADES ISLAND - Nothing to report				
WASHINGTON SHORE – OOS				

- (2) FG3-3 is currently open and unplugged. The diffuser cannot be repaired until the north PH1CC area is dewatered. The next opportunity will be the 2017-18 winter maintenance period. It should be closed below tailwaters of 8.2' msl.
- (3) The FG3-4 diffuser shaft was found to be vibrating unusually. The diffuser was closed on 29 Dec and will be kept closed until the 2017-18 dewatering to prevent further damage to the gate. FG3-5 was opened in its place, but a "bad hardware alarm" has stopped that valve from working. It will also be kept half way open.

c. Adult Fishways.

- (1) The WA shore ladder, including the UMT, is dewatered.
- (2) The Cascades Island exit was opened at ~1300 on 23 November. A bulkhead is placed at the south end of the UMT to separate it from WA shore.
- (3) The AFF is dewatered.
- (4) Sensor calibration was not completed this week.
- (5) SLEDS remain installed in the operating fishways (CI, B-branch, PH1).

d. Juvenile Fishways.

- (1) The ITS remains in service.
- (2) The hydro-cannon is off.
- (3) The B2CC is open intermittently with spill, per FPP section 2.2.7.
- (4) The DSM was taken out of service on 11 December. The flushing valve ran until 15 December.

- (5) Bonneville had the majority of its avian lines broken due to the ice storm (not including the lines that were already removed for the spillway work). These broken lines will be replaced in March when the spillway lines are reinstalled.

e. Lamprey Fishways.

- (1) All LPSs are out of service.

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

5. WATER QUALITY MONITORING:

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

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

6. CONSTRUCTION:

a. Flow control plates as part of the FGE modifications are installed in units 11, 12, and 13 at PH2. Unit 14 work is on hold pending river conditions.

b. Lamprey flume extensions and modifications are occurring in the upper WA shore ladder during winter maintenance. Orifice plating has been installed in the lower fishway. Rest boxes are installed.

c. The Navigation Lock was returned to service at 1100 on 09 February.

d. Repairs to the B-branch apron in the south spillway tailrace started 23 January and will go through February.

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

8. TELETYPES CURRENTLY IN EFFECT:

a. A teletype sent on 16 February provides wintertime spill and lack of load conditions to be used from 14 February 2017 through 31 March 2017.

b. A teletype sent on 04 Jan states that effective at 1400 on 04 Jan, minimum tailwater at Bonneville is 12.5 feet during all hours for Chum incubation.

c. A teletype sent on 16 Jan states that effective immediately and continuing through 20 March, all effort be made to avoid exceeding 84.8 feet at the Dalles tailwater. The intent is to protect workers and equipment in the de-watered Nav Lock.

- d. A teletype sent on 21 Jan states that until further notice, spill at Bonneville is to be avoided to the greatest extent possible. The Bonneville forebay is to be held at a maximum of 75.5 feet, soft constraint, to reserve space for capturing potential spill. BPA is requested to notify the Bonneville control room at least 3 hours prior to anticipated spill, and, if spill is imminent, an order of operations is outlined.
- e. A teletype sent on 13 Feb states that from 0800 to 1200 on 14 Feb Bonneville Dam forebay is to operate between 74.5' and 75.5' if flow is under 215 kcfs, 74.0' to 75.0' if over 215 kcfs, for shipping operations near Bingen, Washington.

JERRY A. CARROLL
Operations Manager
Bonneville Project