

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 53 of 2016, which covers the period from 25 – 31 December.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 145.6 to 180.5 kcfs. Daily average powerhouse forebay elevation ranged from 72.9' to 74.4' msl. Daily average project tailwater ranged from 13.8' to 16.1' msl. Secchi disk measurements remained 7.0' or greater. Daily average water temperature ranged from 39 to 40 °F.
- b. Spill bays 01 and 18 are open 0.5' to provide attraction flow for Cascades Is. and B-branch fishways, respectively. Daily average spill ranged from 1.0 to 1.1 kcfs.
- c. Unit Operation. PH1 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
1	1001 on 28 Dec	1315 on 28 Dec	Rake Trash
2	1318 on 28 Dec	1622 on 28 Dec	Rake Trash
6	1532 on 27 Dec	1632 on 27 Dec	Rake Trash
6	0745 on 28 Dec	0959 on 28 Dec	Rake Trash
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
9	1309 on 27 Dec	1530 on 27 Dec	Rake Trash
10	1013 on 27 Dec	1307 on 27 Dec	Rake Trash
11	0006 on 15 Dec	---	Annual maintenance, FGE mods
12	2007 on 14 Sep	---	Exciter ground
17	1126 on 29 Dec	1535 on 29 Dec	Rake Trash
18	0734 on 29 Dec	1124 on 29 Dec	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 0730 to 0820 on 27 Dec, from 0715 to 0725 on 29 Dec.

(2) FV3-7 was closed for cleaning from 0828 to 0835 on 27 Dec

(3) FV3-9 was closed for cleaning from 0835 to 0856 on 27 Dec.

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 has been rehabbed. New gates for diffusers B5 and B6 have been installed. Diffusers A1 and A2 were removed and will be rehabbed. The Emergency Relief Gate in the DSM is undergoing maintenance. Nav lock maintenance is also underway.

(2) Collection channel replacement diffuser grating is being ordered. C valve diffusers 9 and 10 were inspected and found to be in poor condition; repairs are underway. Overhaul of DSM screen cleaner 3 underway.

3. RESEARCH:

a. Normandeau – Fish counting. Video counting continues.

4. FISHWAYS:

a. Project biologists inspected 27, 28, and 29 December.

b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND – Nothing to report				
12/28,29	A-branch staff gauge	Water over weir > 1.1'	FV3-7 conduit leak	Repair in 2017
12/29	A-branch	FG3-4 closed	Shaft/gate vibration	See below
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 is open in its place.

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 occurred on 28 Dec.
- (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.

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 continue to be installed at PH2, in units 11 – 14 during winter maintenance. VBS plates will also be installed.

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.

- c. The Navigation Lock was taken out of service at 0600 on 12 December for extended maintenance as part of an extended winter maintenance coordinated for the Columbia River system. It will return to service on 9 February.
- d. Repairs to the B-branch apron in the south spillway tailrace will occur starting 09 January.

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

8. TELETYPES CURRENTLY IN EFFECT:

- a. A teletype sent on 30 August provides wintertime spill and lack of load conditions to be used from 01 September 2016 through 31 March 2017.
- b. A teletype sent 13 October states effective immediately until further notice do not spill at BON for lack-of-load conditions. If spill becomes necessary, implement the modified spill patterns provided to the BON control room. This operation is to minimize erosion in the spillway tailrace at B-branch ladder.
- c. A teletype sent on 28 October states the during the official Chum spawning period but no later than 15 January, project outflows may be decreased to 58 kcfs, hard constraint, as long as the Vancouver gauge is maintained at 3.0' or higher. When outflows are reduced due to high water, there is no daily minimum outflow if the 3.0' requirement at the Vancouver gauge is met.
- d. A teletype sent on 21 December states that effective at 1400 on 21 December, until further notice, minimum tailwater elevation is 13.0' during all hours. The intent is to ensure sufficient tailwater elevation to protect Chum redds in the Ives/Pierce Island area during the egg incubation period.

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