

## MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 50 of 2016, which covers the period from 04-10 December.

**1. OPERATION SUMMARY:**

- a. Daily average river flows ranged from 130.6 to 169.8 kcfs. Daily average powerhouse forebay elevation ranged from 72.7' to 74.5' msl. Daily average project tailwater ranged from 13.0' to 14.8' msl. Secchi disk measurements ranged from 6.0' to 7.0'. Daily average water temperature ranged from 44°F to 50°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 17.5 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	0011 on 05 Dec		Annual Maintenance
3	0904 on 06 Dec	1014 on 06 Dec	BPA work
4	0902 on 06 Dec	1015 on 06 Dec	BPA work
5	0901 on 06 Dec	1016 on 06 Dec	BPA work
6	0902 on 06 Dec	1017 on 06 Dec	BPA work
11	1121 on 06 Dec	1200 on 06 Dec	Line Tripping
13	1121 on 06 Dec	1201 on 06 Dec	Line Tripping
14	1121 on 06 Dec	1202 on 06 Dec	Line Tripping
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
12	2007 on 14 Sep	---	Exciter ground

- 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 from 0747 to 0857 on 08 December for trash rack cleaning.
- (2) FV1-1 was closed from 1335 to 1417 on 08 December for trash rack cleaning.
- (3) FV3-9 was closed from 0829 to 0850 on 06 December for trash rack cleaning.
- (4) FV3-9 was closed from 0952 to 1028 on 08 December for trash rack cleaning.

### b. STS/VBS inspections. Table 2a.

Unit	Date	Run Hours	Comments
11	12/6	374	OK
12	12/6	---	OOS
13	12/6	274	OK
14	12/6	222	OK
15	12/6	115	OK
16	12/6	82	OK
17	12/6	298	OK
18	12/6	326	OK

### c. Dewatering and Fish Salvages.

- (1) On 06 December, Project Biologists recovered several sculpin and 1 smallmouth bass from the PH2 south monolith collection channel.
- (2) On 07 December, Project Biologists recovered 1 steelhead, 2 lamprey, and a variety of approximately 200 cyprinids and catostomids from the PH2 collection channel and north monolith.

## 3. RESEARCH:

- a. Normandeau – Fish counting. Visual counting concluded on 30 November when video counting began.

## 4. FISHWAYS:

- a. Project biologists inspected 06 December – 08 December.
- b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
<b>BRADFORD ISLAND – Nothing to report</b>				
12/8	A-branch	Water over weir > 1.1'	FV3-7 conduit leak	Repair in 2017
12/7	South entrance	Differential < 0.9'	FV1-1 debris loading	Clean trash racks
<b>CASCADES ISLAND – Nothing to report</b>				
<b>WASHINGTON SHORE – Nothing to report</b>				

(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.

c. Adult Fishways.

(1) The WA shore ladder was dewatered to tailwater on 28 November with the UMT bulkheaded at both ends to retain water. The exit channel (serpentine to river exit) was dewatered on 29 November with no fish found. The UMT, as well as the south monolith (bulkhead placed south of unit 11) was dewatered on 30 November. The north monolith (bulkhead placed north of unit 12) remained watered up until the following week.

(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 did not occur 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 was opened from 1513 to 0241 on 07 December, 1500 to 0400 on 08 December, 1550 to 0205 on 09 December, and 2010 on 10 December to 0205 11 December.

(4) The DSM remains in service.

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 will be installed in the lower fishway.
- c. The Navigation Lock will be out of service 12 Dec – 9 Feb for extended maintenance as part of an extended winter maintenance coordinated for the Columbia River system.

## 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 22 November states effective 1200 on 22 November, operate BON tailwater in the following order for Chum spawning: at all hours, 11.5 – 13.0'. If necessary, then up to 16.5' at night (1500 – 0900) with highest elevations at ~2400 hours. Then, if necessary up to 18.5' at night. Then, if necessary 13.0 – 16.5' during the day (0900 – 1500) and up to max project 24-hour ramp rate limits during night. If spill is necessary, spill according to modified spill patterns referenced in the CBT.

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