

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

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 51 of 2016, which covers the period from 11 – 17 December.

**1. OPERATION SUMMARY:**

- a. Daily average river flows ranged from 136.1 to 154.1 kcfs. Daily average powerhouse forebay elevation ranged from 73.1 to 73.9' msl. Daily average project tailwater ranged from 13.9 to 14.6' msl. Secchi disk measurements remained 7.0' or greater. Daily average water temperature ranged from 43 to 45 °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 2.5 to 6.7 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
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
10	0001 on 12 Dec	1518 on 14 Dec	Annual maintenance
11	0006 on 15 Dec	---	Annual maintenance, FGE mods
12	2007 on 14 Sep	---	Exciter ground
13	0700 on 16 Dec	0950 on 16 Dec	STS removal
14	0951 on 16 Dec	1103 on 16 Dec	STS removal
15	1104 on 16 Dec	1234 on 16 Dec	STS removal
16	1246 on 16 Dec	1527 on 16 Dec	STS removal
17	1527 on 16 Dec	1652 on 16 Dec	STS removal
18	0630 on 17 Dec	1012 on 17 Dec	STS removal

- 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 0815 to 0919 on 12 Dec, from 0730 to 0800 on 13 Dec, from 0739 to 0753 on 14 Dec, and from 0739 to 0838 on 15 Dec.
- (2) FV3-7 was closed for cleaning from 1022 to 1152 on 12 Dec.
- (3) FV3-9 was closed for cleaning from 1022 to 1152 on 12 Dec, from 0825 to 0856 on 13 Dec, from 0803 to 0820 on 14 Dec, and from 1001 to 1045 on 15 Dec.

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

Unit	Date	Action
11 – 12	--	OOS (installed)
13 – 17	12/16	Removed
18	12/17	Removed

### c. Dewatering and Fish Salvages.

- (1) On 15 December, Project Biologists recovered 8 juvenile salmonids, 15 juvenile lamprey, dozens of smallmouth bass, shad, sculpin, and two crappie from the dewatered Navigational Lock.
- (2) On 13 December, Project Biologists recovered 1 adult steelhead mortality (see 16BON121) and 1 peamouth from the Navigational Lock North Sill.

### d. Winter Maintenance update.

- (1) FV6-9 has been removed and is being rehabbed. New gates for diffusers B5 and B6 are being installed. Diffusers A1 and A2 were removed this week and will be rehabbed. The Emergency Relief Gate in the DSM is also undergoing maintenance.

## 3. RESEARCH:

- a. Normandeau – Fish counting. Video counting continues.

## 4. FISHWAYS:

- a. Project biologists inspected 12, 13, and 15 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>				
12/12	A-branch, B-branch, Bradford Island	Water over weir < 0.9'	FV1-1 debris loading	Cleaned 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, 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 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 is open intermittently with spill, per FPP section 2.2.7.
- (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 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 early 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 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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