

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 03 of 2017, which covers the period from 15 – 21 January.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 157.3 to 192.4 kcfs. Daily average powerhouse forebay elevation ranged from 72.1' to 72.9' msl. Daily average project tailwater ranged from 15.1' to 16.4' msl. Secchi disk measurements ranged from 6 to 7.0' or greater. Daily average water temperature ranged from 33 to 34°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 0.5 to 0.8 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 | --- | |
| 11 | 0006 on 15 Dec | 1317 on 20 Jan | Annual maintenance, FGE mods |
| 12 | 2007 on 14 Sep | --- | Exciter ground |
| 15 | 1324 on 17 Jan | 1414 on 17 Jan | Rake Trash |
| 13 | 0950 on 20 Jan | --- | FGE Mods |

- 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 0743 to 0900 on 17 Jan, and from 0905 to 0957 on 19 Jan.
- (2) FV3-7 was closed for cleaning from 0955 to 1300 on 17 Jan, and from 1010 to 1100 on 19 Jan.

- (3) FV3-9 was closed for cleaning from 0955 to 1028 on 09 Jan, from 1010 to 1045 on 19 Jan, and from 1241 to 1313 on 21 Jan.
- (4) FV5-9 was closed for cleaning from 1350 to 1400 on 17 Jan.

- 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.

(2) Fishway maintenance was been slowed by ice storms and project closures this week. Nav lock maintenance is underway.

3. RESEARCH:

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

4. FISHWAYS:

- a. Project biologists inspected 17 and 19 January.
- b. Fish passage plan observations.

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

| Date | Location | FPP Items | Cause | Response |
|--|----------|--------------|----------------------|-----------|
| BRADFORD ISLAND – Nothing to report | | | | |
| 1/17 | A-branch | FG3-5 closed | Bad hardware alarm | See below |
| 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 was opened in its place, but a “bad hardware alarm” has stopped that valve from working. It will also be kept closed.

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 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 the first half of March when the removed lines were scheduled to be 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 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 23 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 04 Jan states that effective at 1400 on 04 Jan, minimum tailwater at Bonneville is 12.5 feet during all hours for Chum incubation.
- e. A teletype sent on 06 Jan sets a modified spill pattern and a 3 hour minimum notification time for spill for erosion repairs along Bradford Island B branch bank. It also sets a maximum forebay elevation of 75.5 for capturing potential spill and providing time for notification.
- f. 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.

- g. A teletype sent on 18 Jan states that on 20 Jan a spill test of no more than two hours will be conducted at Bonneville to evaluate tolerable levels for in-water erosion repairs along the Bradford Island bank.
- h. A teletype sent on 18 Jan states that on 20 Jan, from 0800 to 1200, Bonneville forebay is to be operated from 74.5 to 75.5 feet hard constraint, and 75 to 75.5 feet, soft constraint. The purpose is for barge loading and shipping ops near Bingen, WA.
- i. 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.

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