

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

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 38 of 2017, which covers the period from 17-23 September.

**1. OPERATION SUMMARY:**

- a. Daily average river flows ranged from 102.8 to 129.5 kcfs. Daily average powerhouse forebay elevation ranged from 74.4' to 75.2' msl. Daily average project tailwater ranged from 9.9' to 11.6' msl. Secchi disk measurements ranged from 6.0' to 7.0'. Daily average water temperature ranged from 69° to 71°F.
- b. Daily average spill remained at 1.3 kcfs.
- c. Unit Operation. PH2 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   |
|------|-----------------|-----------------|--|
| 2    | 1420 on 12 Sept | 1431 on 21 Sept | Governor CAC issues                                    |
| 5    | 1037 on 21 Sept | 1215 on 21 Sept | U1 testing & switching                                 |
| 6    | 1037 on 21 Sept | 1216 on 21 Sept | U1 testing & switching                                 |
| 7    | 0103 on 22 Feb  | ---             | Annual, bank 7/8 outage, main unit breaker replacement |
| 8    | 0103 on 22 Feb  | ---             |  |
| 9    | 1110 on 21 Sept | 1211 on 21 Sept | U1 metering issues                                     |
| 11   | 0026 on 18 Sept | ---             | PO Roof Repair   |
| 12   | 0026 on 18 Sept | ---             | PO Roof Repair   |
| 13   | 0026 on 18 Sept | ---             | PO Roof Repair   |
| 14   | 0026 on 18 Sept | ---             | PO Roof Repair   |
| 18   | 0930 on 21 Aug  | ---             | Exciter trip   |

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

(1) Table 2. Fish unit drawdowns, in feet.

| Date | F1   | F2   |
|------|------|------|
| 9/17 | 2.8' | 1.4' |
| 9/18 | 0.1' | 0.2' |
| 9/19 | 0.1' | 0.1' |
| 9/20 | 0.3' | 0.2' |
| 9/21 | 0.1' | 0.1' |
| 9/22 | 0.1' | 0.2' |
| 9/23 | 2.0' | 0.1' |

## 2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures.  
(1) FV 1-1 was closed for cleaning from 0715 to 0734 on 19 Sept.
- b. STS/VBS inspections. None.
- c. Dewatering and Fish Salvages. 8 sculpin, 2 catfish, 3 sunfish, and 2 ammocoetes were salvaged from Unit 8 tail logs on 18 September. 1 adult Pacific Lamprey was salvaged from Unit 2 tail logs on 21 September.

## 3. RESEARCH:

- a. CRITFC – Adult sampling. Annual adult sampling in the AFF continues Monday through Friday.
- b. Normandeau – Fish counting. Visual counting continues.
- c. PSMFC – Smolt Monitoring. Normal sampling resumed on 15 September (sample end-date of 16 September) when average river temperatures dropped below 69.5°F. Gas Bubble Trauma (GBT) monitoring activities have concluded for the season. Please follow [this link](#) to the FPC web page for further details. Truck releases of summer/fall out-migrants originating from Snake River dams began on 16 August and occur every other day. No truck releases occurred this week due to wildfires. Fallbacks observed this week: two steelhead, three salmon and one unknown salmonid.
- d. USFWS – Fish Health Survey. Juvenile & adult shad, and juvenile hatchery Chinook will be collected from the fish facilities as part of the annual survey. BON mortalities will also be sent to the USFWS for pathogen analysis.
- e. University of Idaho – Video monitoring. A DIDSON camera study began in late April to monitor fish in the UMT junction area near the new LPS extension.

#### 4. FISHWAYS:

- a. Project biologists inspected 17-23 September.
- 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> |          |                        |         |          |
| 9/17-21,23                                 | WG-02    | Submergence < 8.0'     | Unknown | Monitor  |
| 9/17-23                                    | WG-64    | Submergence < 8.0'     | Unknown | Monitor  |
| <b>CASCADES ISLAND – Nothing to report</b> |          |                        |         |          |
| <b>WASHINGTON SHORE</b>                    |          |                        |         |          |
| 9/20                                       | Weir 37  | Water over weir < 0.9' | Unknown | Monitor  |
| 9/19                                       | Weir 38  | Water over weir < 0.9' | Unknown | Monitor  |

- (1) 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.
- (2) The FG3-4 diffuser shaft was found to be vibrating unusually. The diffuser was closed on 29 Dec 2016 to prevent further damage to the gate. The next opportunity for repair is the 2017-18 winter maintenance period.
- (3) FG3-8 was found to be banging loudly on 11 May. It was closed until repairs can be made. It should be open above tailwaters of 28.2' msl.
- (4) Bonneville had the majority of its avian lines broken due to ice storms during the 2016/17 winter. Avian lines will be replaced after the new FY & pending results from hydro surveys scheduled to occur 25-26 September.
- (5) PH2 diffuser B4 was discovered to have its stem bent on 24 May. It likely occurred while trying to close and is believed to be open. It should be closed at tailwaters above 31.0' and below 11.0' msl.
- (6) The NDE cannot open past 5' putting the entrance into FPP violation for submergence (>13.0'). It is believed to be full of sand. The NDE gate will have to be removed at a future date and the sand sucked in order for this entrance be in compliance.

b. Adult Fishways.

- (1) The AFF remains in service.
- (2) Sensor calibration did not occur this reporting week.
- (3) SLEDs are installed in all fishway entrances.

c. Juvenile Fishways.

- (1) The ITS remains in service.
- (2) The hydro-cannon is on.
- (3) The B2CC is out of service.
- (4) The DSM remains in service.

d. Lamprey Fishways.

- (1) The WA AWS, CI, and BI LPS all remain in service. The NDE LFS/LPS went out of service for the season at approximately 1030 on 24 August due to extremely low fish counts.

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

| <b>Date</b> | <b>Gulls</b> | <b>Cormorants</b> | <b>Terns</b> | <b>Wh. Pelicans</b> | <b>Grebes</b> |
|-------------|--------------|-------------------|--------------|---------------------|---------------|
| 9/17        | 0            | 0                 | 0            | 0                   | 0             |
| 9/18        | 0            | 0                 | 0            | 0                   | 0             |
| 9/19        | 43           | 2                 | 0            | 0                   | 0             |
| 9/20        | 50           | 5                 | 0            | 0                   | 0             |
| 9/21        | 23           | 3                 | 0            | 0                   | 0             |
| 9/22        | 0            | 0                 | 0            | 0                   | 0             |
| 9/23        | 0            | 0                 | 0            | 0                   | 0             |

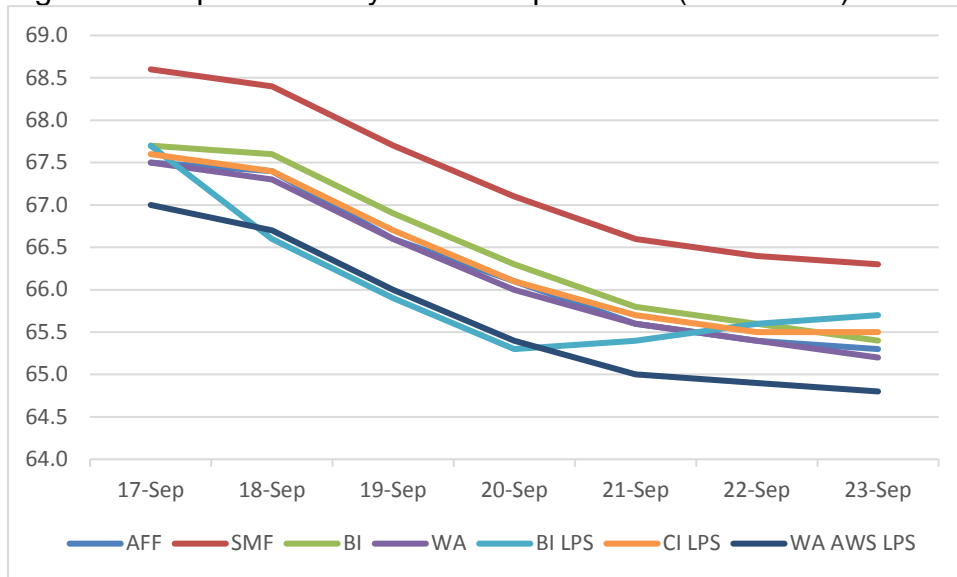
**2. WATER QUALITY MONITORING:**

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

(1) Table 4. Average daily fishway water temperatures (Fahrenheit)

| Date   | AFF  | SMF  | BI   | WA   | BI LPS | CI LPS | WA AWS LPS |
|--------|------|------|------|------|--------|--------|------------|
| 17-Sep | 67.5 | 68.6 | 67.7 | 67.5 | 62.7   | 67.6   | 67.0       |
| 18-Sep | 67.4 | 68.4 | 67.6 | 67.3 | 66.6   | 67.4   | 66.7       |
| 19-Sep | 66.6 | 67.7 | 66.9 | 66.6 | 65.9   | 66.7   | 66.0       |
| 20-Sep | 66.1 | 67.1 | 66.3 | 66.0 | 65.3   | 66.1   | 65.4       |
| 21-Sep | 65.6 | 66.6 | 65.8 | 65.6 | 65.4   | 65.7   | 65.0       |
| 22-Sep | 65.4 | 66.4 | 65.6 | 65.4 | 65.6   | 65.5   | 64.9       |
| 23-Sep | 65.3 | 66.3 | 65.4 | 65.2 | 65.7   | 65.5   | 64.8       |

b. Figure 1. Graph of fishway water temperatures (Fahrenheit).



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

**3. CONSTRUCTION:**

a. Powerhouse 2 roof repairs continue.

**4. HAZMAT, SPILLS AND CLEANUP:** Nothing to report.

**5. TELETYPES CURRENTLY IN EFFECT:**

a. A teletype updated on 21 June provides spill caps and lack of load spill conditions to be used from 0000 on 01 April until further notice.

- b. A teletype sent on 11 August states that effective immediately and continuing until further notice operate in accordance with an adjusted turbine unit operating priority order. Unit 15 will be operated as last on, first off. This is to minimize operation due to loose bolts on the flow restrictor plate until repairs can be made.
- c. A teletype sent on 22 September sets forebay operational requests for treaty fisheries. The request that Bonneville forebay operate within a 1.5' hard constraint from 0600 on 25 September to 1800 on 29 September.
- d. A teletype sent on 08 September requests that from 1400 to 1800 on 25 September the Bonneville forebay be 75.5' to 76.5', soft constraint to facilitate moving sailboats near the Hood River.
- e. A teletype sent on 21 September requests that from 1130 to 1700 on 25 September the Bonneville forebay be 75.5' to 76.5', soft constraint to provide high and steady tailwater conditions at the Dalles Dam for a Bathymetry Survey.
- f. A teletype sent on 21 September requests Bonneville close spill bays 1 and 18 from 1200 to 1700 for a hydro-survey.

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