U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#25-2017

Project: McNary
Biologist: Bobby Johnson and Denise Griffith
Dates: August 11 – 17, 2017

Turbine Operation

General Comments: The hard 1% peak efficiency constraint and the saw tooth unit priority for warm water temperature abatement continue.

Yes	No	Turbine Unit Status
☐	☒	All 14 turbine units available for service throughout the week (see Table 1 for outage details below).
☒	☐	All turbine units operated within 1% peak efficiency constraint. Constraint in effect: ☒ Hard ☐Soft.

Table 1. Unit Outages at McNary Project.

Units	Outage Dates	Outage Length	Reason
5	Aug 7 to Oct 7	61 days	9-year overhaul.
2	Aug 14 to 25	11 days	Annual maintenance.
1	Aug 15	24 minutes	Extended-length submersible bar screens (ESBSs) camera inspections.

Adult Fish Passage Facilities

General Comments: McNary fisheries biologists performed measured inspections of the adult fishways on August 11, 13 and 16. National Oceanic & Atmospheric Administration (NOAA) fisheries personnel performed their monthly inspection on August 14. Visual fish counts and video review of lamprey passage continue. Temperature data was collected on August 16.

From August 14 to 16, floating orifice gate (FOGs) replacement was scheduled to occur after 1200 hours each day. The rehabilitated FOGs were moved to the deck on August 14. No in water work occurred that day.

On August 15, after 1200 hours, the three FOGs were assembled and installed in slots 14, 43 and 44 behind the bulkheads. The FOGs have to be assembled in the slot as only two large bolts hold the sections together. No fish pump outage was required.

That day, the biologist was asked about a fish pump outage as the mechanics want to test the fish pump cooling water supply line back flow preventers. Also, the mechanical planner asked for a camera inspection of the trash racks at fish pump 3, which could prove critical to the fish pump replacement design work. With only one day left, the biologist decide to remove the fish pumps from service together instead of trying a phased outage approach to expedite the FOG exchange and to allow for the two other requests, which if done at a later date, would have required more fish pump outages.

On August 16, from approximately 1254 to 1708 hours, all three fish pumps were out of service. This allowed the general maintenance staff to remove the stop logs from slots 14, 43 and 44. Some of these logs were moved into slots 8 and 41. The FOG in slot 8 was removed. During the first hour, the back flow preventers were tested. Also, the trash racks at fish pump 3 were examined. We found the racks were setting on two concrete stop logs, which greatly reduces the intake area. The new fish pump design team will have to reevaluate their data. With FOG

exchange having not been completed, the biologist informed the district biologists that the third in water work day would have to be August 17.

That day, at 1030 hours, the biologist found the general maintenance staff installing stop logs in slot 37. With the guard rail removed and the work begun, the biologist let them complete the work. Installing the logs takes about 30 minutes. The staff was reminded that the in water work was to occur after 1200 hours. From 1200 to 1430 hours, the FOGs in slots 41 and 37 were removed. No fish pump outage was required.

Fish Ladder Exits:

Yes	No	Location, Criteria and Measurements
☒	☐	Oregon Exit (Criteria – Head over weir 1.0' to 1.3')
☒	☐	Oregon Count Station Differential (Criteria – Differential 0.0' to 0.5')
☒	☐	Washington Exit (Criteria – Head over weir 1.0' to 1.3')
☒	☐	Washington Count Station Differential (Criteria – Differential 0.0' to 0.5')

Comments: The trash racks and picketed leads were cleaned as needed, including weekends, at both exits.

Debris loads at the Washington exit and along the shoreline were minimal. The regulating weir tripped an alarm and was reset on August 11. Residual interference at the count station passive integrated transponder (PIT) detector disappeared on August 13 at 1345 hours. No reason was determined.

At the Oregon exit, debris loads were minimal to moderate. Along the shoreline, debris loads were moderate to heavy. The encoder for tilting weir 339 has not been replaced. This weir rarely moves and will be adjusted manually.

Fishway Entrances and Collection Channel:

Criteria Met?

Yes	No	Location, Criteria and Measurements
☒	☐	North Oregon Entrance Head Differential (Criteria – 1.0' to 2.0')
☐	☒	NFEW2 Weir Depth (Criteria – ≥ 8.0'): 7.8' on August 11.
☐	☒	NFEW3 Weir Depth (Criteria – ≥ 8.0'): 7.9' on August 11.
☒	☐	South Oregon Entrance Head Differential (Criteria – 1.0' to 2.0')
☒	☐	SFEW1 Weir Depth (Criteria – ≥ 8.0')
☒	☐	SFEW2 Weir Depth (Criteria – ≥ 8.0')
☒	☐	Oregon Collection Channel Velocities (Criteria –1.5 to 4.0 fps): Averaged 1.9 fps.
☒	☐	Washington Entrance Head Differential (Criteria – 1.0' to 2.0')
☒	☐	WFE2 Weir Depth (Criteria – ≥ 8.0')
☒	☐	WFE3 Weir Depth (Criteria – ≥ 8.0')

Comments: With low tailwater elevations and minor sensor calibration drifts, NFEW2 and NFEW3 were slightly out of criteria on August 11. The panel view at the Oregon north powerhouse entrance returned to service on August 11. The panel view at the south powerhouse entrance was out of service on August 13.

Auxiliary Water Supply System:

Yes	No	In Service?
☒	☐	Washington shore Wasco County PUD Turbine Unit.
☐	☒	Washington shore Wasco PUD Bypass. Service was not required.
☒	☐	Oregon Ladder Fish Pump 1: Blade angle was 20 to 22 degrees.
☒	☐	Oregon Ladder Fish Pump 2: Blade angle was 18 or 20 degrees.
☒	☐	Oregon Ladder Fish Pump 3: Blade angle was 23 degrees.

☒ ☐ Oregon North Powerhouse Pool supply from juvenile fishway.

Comments: As stated above, on August 16 from 1254 to 1708 hours, all three fish pumps were out of service for the FOG exchange, cooling water supply line back flow preventer testing and the trash rack examination at fish pump 3.

Juvenile Fish Passage Facility

General Comments: The fish passage season consists of alternating days of primary and secondary bypass modes, with the switch occurring at 0700 hours each morning. No schedule deviations occurred. This week, 45 juvenile lamprey and 3,785 smolts were bypassed. Juvenile shad are now the predominate species observed in the samples.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	Item
☒	☐	Forebay debris load acceptable? Debris has dissipated.
☒	☐	Trash rack differentials measured? If so, were differentials acceptable? ☒ Yes ☐ No ☐ N/A.
☐	☒	Any debris seen in gatewells?
☐	☒	Any oil seen in gatewells?

Comments: Forebay debris loads near the powerhouse were minimal to very light. Debris loads at the spillway were moderate to heavy. New incoming debris loads were minimal. The debris continues to slowly dissipate. No trash racks were cleaned.

ESBSs/Vertical barrier screen (VBSs):

Yes	No	Item
☒	☐	ESBSs deployed in all slots?
☒	☐	ESBSs inspected this week? If so, were results acceptable? ☒ Yes ☐ No ☐ N/A
☒	☐	VBSs differentials checked this week? If so, were results acceptable? ☒ Yes ☐ No ☐ N/A

Comments: The brush cycles for the screens in 1A, 3B, 7B, 8C, 12B, 14A slots and in unit 11 remained in timer mode. ESBS camera inspections occurred in units 1 and 2 on August 15. No problems were found.

VBS differential monitoring continued. No high differential measurements were recorded. Three screens were cleaned on August 14. No mortalities were observed.

Orifices, Collection Channel, Dewatering Structure, and Bypass Pipe:

Yes	No	Item
☒	☐	Orifices operating satisfactory? 42 orifices were open.
☒	☐	Dewatering and cleaning systems operating satisfactory?

Comments: Orifices were adjusted as required for VBS cleaning. We continued to operate the transition screen cleaning brush manually to insure it completes a full cleaning cycle.

Bypass Facility:

Yes	No	Item
☒	☐	Sample gates on? Yes, during secondary bypass only.
☐	☒	PIT tag system on? The system remains off unless a study is occurring. The facility bypass lines provide a superior route for the fish over the PIT tag sample release lines downstream of the PIT tag sample gates.

Comments: During the bypass season, primary and secondary bypass modes return all fish are to the river. PIT tag detection occurs in the full flow pipe during primary bypass and throughout the facility during secondary bypass. Smolt monitoring occurs only on secondary bypass days.

Four adult lamprey were removed from the sample this week and returned to the river. The sample raceway release flush water was adjusted on August 13. Algae removal from the flumes and tanks continued.

River Conditions

General Comments: River conditions were provided by the biological services contractor, Anchor QEA and are outlined in Table 2 below. Water clarity was provided by the McNary control room. The data period runs from 0700 to 0700 hours each day. Routine summer spill in support of fish passage continues. Fifty percent of river flow is spilled in the summer season.

Table 2. River Conditions at McNary Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature (°F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
149.6	140.4	74.9	70.5	71.4	70.3	6.0	6.0

Comments: Maintenance was performed on the cranes attached to the spillgates in bays 2 and 20 this week.

Anchor QEA continued daily temperature reports. From August 14 to 15, the gatewell slot probe in unit 8 was out of service due to possible human error. The probe was replaced. Weekly data will be reported separately from the smolt monitoring report.

Other

Inline Cooling Water Strainers: Regional discussion and agreement have moved the next cooling water strainer examinations to December.

Invasive Species: The next mussel station examinations will occur on August 20. No Siberian prawns have been observed at McNary so far this season.

Avian Activity: Overall, bird numbers appear greatly reduced so far this season. However, the juvenile shad out migration appears to have attracted more birds this week. Avian counts continued and tailwater numbers are recorded in Table 3 below. Observations were made every morning.

In the spill zone, the pelicans were along the navigation lock wing wall. The terns and gulls were feeding in the spill flow. The gulls and cormorants were roosting on the wing wall. In the powerhouse zone, only one pelican was observed. In the outfall zone, pelicans, gulls, terns and cormorants were observed feeding.

In the forebay zone, four to 14 grebes were observed. They appeared to be roosting more often than feeding. Osprey, gulls, pelicans and cormorants were noted occasionally. A few gulls, pelicans and cormorants were observed on the rocks by the Washington shore boat dock.

No grebes entered the gatewell slots and no pelicans or cormorants were noted in the ladders this week.

Pacific States Marine Fisheries Commission (PSMFC) personnel concluded daily observations of pelican behavior at the outfall and the project fisheries staff concluded counting adult shad fallbacks at the separator on August 14. Pelican numbers will be monitored and observations will resume if numbers at the outfall increase.

United States Department of Agriculture – Animal and Plant Health Inspection Service – Wildlife Services (USDA–APHIS–WS) personnel reported two cormorants and one gull lethally removed in July. The water hazing sprinklers at the outfall functioned satisfactory.

Table 3. McNary Project's Daily Tailwater Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican
Aug 11	Spill	19	0	9	3
	Powerhouse	0	0	0	1
	Outfall	0	3	0	3
Aug 12	Spill	0	0	30	5
	Powerhouse	0	0	0	0
	Outfall	0	0	0	2
Aug 13	Spill	71	0	11	4
	Powerhouse	0	0	0	0
	Outfall	0	0	0	2
Aug 14	Spill	118	0	143	3
	Powerhouse	0	0	0	0
	Outfall	0	3	0	0
Aug 15	Spill	74	6	47	3
	Powerhouse	0	0	0	0
	Outfall	0	5	1	1
Aug 16	Spill	152	3	8	4
	Powerhouse	0	0	0	0
	Outfall	5	3	13	2
Aug 17	Spill	71	0	87	6
	Powerhouse	0	0	0	0
	Outfall	6	5	25	1

Fish Salvage/Rescue**:** No fish salvage/rescue occurred this week.

Research

Item: No onsite research is occurring at this time.

Project: Ice Harbor
Biologist: Ken Fone
Dates: August 11 – August 17, 2017

Turbine Operation

Yes	No	Turbine Unit Status
☐	☒	All 6 turbine units available for service throughout the week (see comments below for outage details).
☒	☐	Available turbine units operated within 1% peak efficiency constraint. Constraint in effect: ☒ Hard ☐Soft.

Comments: Unit 2 was taken out of service on April 25, 2016, at 0606 hours for the runner replacement. Unit 4 was removed from service at 1218 hours on March 6, 2017, when it tripped off due to a problem in the 115 kv section 2 bus. That problem was fixed. The unit 4 hub oil drain valve was replaced to address an oil leak. Annual maintenance is now being performed on the unit. Unit 5 was taken out of service on August 7 at 0715 hours for annual maintenance. Unit 3 was removed from service on August 14 at 1651 hours to investigate the source of oil found in the governor sump. Units 6 and 1 were taken out of service one at a time for STS inspections on August 15 and 16.

Adult Fish Passage Facilities

Fish facility personnel inspected the adult fishways on August 14, 16, and 17.

Fish Ladders:

Yes	No	Location, Criteria and Measurements
☒	☐	North Fish Ladder Exit Differential (Criteria – Head ≤ 0.5’)
☒	☐	North Fish Ladder Picketed Lead Differential (Criteria – Head ≤ 0.3’)
☒	☐	North Fish Ladder Depth over Weirs (Criteria – Head over weir 1.0’ to 1.3’)
☒	☐	South Fish Ladder Exit Differential (Criteria – Head ≤ 0.5’)
☐	☒	South Fish Ladder Picketed Lead Differential (Criteria – Head ≤ 0.3’)
☒	☐	South Fish Ladder Depth over Weirs (Criteria – Head over weir 1.0’ to 1.3’)

Comments: A few sticks are visible at the water surface above the north fish ladder exit, against the bulkhead. The debris may extend down into the ladder exit trash rack, as it could not be pulled free by hand. Repairs are currently being made to the lifting beam so that the bulkheads and trash rack can be removed for cleaning. The bubblers are operating satisfactorily. The south fish ladder picketed leads was out of criteria on the August 16 inspection, with a differential of 0.4’, caused by a buildup of filamentous algae on the leads. The leads were cleaned shortly after the inspection. The leads require twice per day cleaning to keep the differential within criteria.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location, Criteria and Measurements
☐	☐	☒	South Shore Entrance (SFE-1) Weir Depth (Criteria: ≥ 8.0’ or on sill)
☒	☐		South Shore Channel/Tailwater Differential (Criteria: 1.0’ – 2.0’)
☒	☐		South Shore Channel Velocity (Criteria: 1.5 – 4.0 fps)
☐	☐	☒	North Powerhouse Entrance (NFE-2) Weir Depth (Criteria: ≥ 8.0’ or on sill)
☒	☐		North Powerhouse Channel/Tailwater Differential (Criteria: 1.0’ – 2.0’)
☐	☐	☒	North Shore Entrance (NSE-1) Weir Depth (Criteria: ≥ 8.0’ or on sill)
☒	☐		North Shore Channel/Tailwater Differential (Criteria: 1.0’ – 2.0’)

Comments: None.

Auxiliary Water Supply (AWS) System:

Yes	No	In Service and Operating Satisfactory?
☒	☐	South Shore AWS Pumps. Six of the eight south shore AWS pumps were in service.
☒	☐	North Shore AWS Pumps. Two of the three north shore AWS pumps were in service.

Comments: None.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	Item
☒	☐	Forebay debris load acceptable? An average of 12 square yards of debris was observed.
☒	☐	Trash rack differentials measured this week? If so, were differentials acceptable? ☒ Yes ☐ No ☐N/A
☒	☐	Any debris seen in gatewells (i.e: over 10% coverage)? Surface coverage ranged from 0% to 15%.
☐	☒	Any oil seen in gatewells?

Comments: None.

STSs/VBSs:

Yes	No	Item
☐	☒	STSs deployed in all slots and in service?
☐	☒	STSs in continuous-run mode (If not, then STSs are in cycle-run mode)?
☒	☐	STSs inspected this week? If so, were results acceptable? ☒ Yes ☐ No ☐ N/A
☐	☒	VBSs differentials checked this week? If so, were results acceptable? ☐ Yes ☐ No ☒ N/A

Comments: Unit 2 STSs are not installed since the unit will not be returned to service this year. STSs are in cycle-run mode due to the average fork length of subyearling chinook in the Lower Monumental juvenile fish sample being over 120 mm. Units 1, 3, 4, 5, and 6 STSs were inspected on August 15 and 16. No problems were found.

Orifices, Collection Channel, Dewatering Structure, and Bypass Pipe:

Yes	No	Item
☒	☐	Orifices operating satisfactory? How many are open and in service? 19-20.
☒	☐	Dewaterer and cleaning systems operating satisfactory?

Comments: None.

Juvenile Fish Facility: The fish facility is in bypass operation.

Fish Sampling: Sampling is done for the year.

Removable Spillway Weir (RSW): Voluntary spill for fish passage is occurring, including spill through the RSW. The RSW (spill gate #2) was closed on August 17 at 1345 hours, due to decreasing river flows (see Ice Harbor section 2.3.2.7.v. of the Fish Passage Plan).

River Conditions

River conditions during the week are outlined in Table 1 below.

Table 1. River conditions at Ice Harbor Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (ºF)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
31.2	26.8	21.1	16.9	71	71	7.9	7.6

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Turbine cooling water strainer inspections for lamprey are no longer required from July to November.

Invasive Species: No exotic species that are new to the area have been found.

Avian Activity: There were moderate numbers of piscivorous birds observed around the project. Most of the gulls and pelicans were observed foraging in the areas of the spillway downstream of the navigation lock.

Research: No on-site research is occurring at this time.

Project: Lower Monumental
Biologists: Chuck Barnes and Raymond Addis
Dates: August 11 - 17, 2017

Turbine Operation

Yes	No	Turbine Unit Status
☐	☒	All 6 turbine units available for service throughout the week (see comments below for outage details).
☒	☐	Available turbine units operated within 1% peak efficiency constraint.

Constraint in effect: ☒ Hard ☐Soft. Hard constraint began at 0000 hour on April 1.

Comments: Unit 1 was removed from service on December 10, 2014 for Unit Rehabilitation with an estimated return to service date of May 31, 2018. Unit 5 was removed from service on January 17, 2017 due to a turbine oil leak with an estimated return to service of June 18, 2018. Unit 6 was removed from service on July 5 for annual maintenance and to install a digital governor and returned to service at 1636 on August 17. Unit 2 was removed from service on August 2 to investigate a leaking blade seal with an estimated return to service of January 1 2018. Unit 4 was removed from service at 0813 and returned to service at 0905 on August 17 to place a headgate cylinder into headgate slot 4 C.

Adult Fish Passage Facility

The adult fishway was inspected by Corps and Anchor QEA biologists on August 11, 12, 13 and 16.

Fish Ladders:

Yes	No	Location, Criteria and Measurements
☒	☐	North Fish Ladder Exit Differential (Criteria – Head ≤ 0.5’)
☒	☐	North Fish Ladder Picketed Lead Differential (Criteria – Head ≤ 0.4’)
☒	☐	North Fish Ladder Depth over Weirs (Criteria – Head over weir 1.0’ to 1.3’)
☒	☐	South Fish Ladder Exit Differential (Criteria – Head ≤ 0.5’)
☒	☐	South Fish Ladder Picketed Lead Differential (Criteria – Head ≤ 0.3’)
☒	☐	South Fish Ladder Depth over Weirs (Criteria – Head over weir 1.0’ to 1.3’)

Comments: None

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location, Criteria and Measurements
☒	☐	☐	North Shore Entrance (NSE-1) Weir Depth (Criteria: ≥ 8.0’ or on sill)
☒	☐	☐	North Shore Entrance (NSE-2) Weir Depth (Criteria: ≥ 8.0’ or on sill)
☒	☐		North Shore Channel/Tailwater Differential (Criteria: 1.0’ – 2.0’)
☒	☐	☒	South Powerhouse Entrance (SPE-1) Weir Depth (Criteria: ≥ 8.0’ or on sill)
☒	☐	☒	South Powerhouse Entrance (SPE-2) Weir Depth (Criteria: ≥ 8.0’ or on sill)
☒	☐		South Powerhouse Entrance Channel/Tailwater Differential (Criteria: 1.0’ – 2.0’)
☒	☐	☒	South Shore Entrance (SSE-1) Weir Depth (Criteria: ≥ 8.0’ or on sill)
☒	☐	☐	South Shore Entrance (SSE-2) Weir Depth (Criteria: ≥ 6.0’ or on sill)
☒	☐		South Shore Channel/Tailwater Differential (Criteria: 1.0’ – 2.0’)

Comments: South Powerhouse Entrance weirs (SPE-1 and SPE-2) were on sill during all inspections. While on sill readings were 5.5, 6.3, 6.5 and 6.0 feet.
South Shore Entrance weir (SSE-1) was on sill during all inspections. While on sill, SSE-1 readings were 6.0, 7.0, 6.9 and 6.7 feet.

Auxiliary Water Supply System:

Yes	No	In Service and Operating Satisfactory?
☐	☒	AWS Fish Pump 1.
☒	☐	AWS Fish Pump 2.
☒	☐	AWS Fish Pump 3.

Comments: Pump 1 will be out of service throughout this season unless an emergency occurs.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	Item
☒	☐	Forebay debris load acceptable? An average of 3 square yards of debris observed in forebay.
☒	☐	Trash rack differentials measured this week? If so, were differentials acceptable? ☒ Yes ☐ No ☐ N/A.
☒	☐	Any debris seen in gatewells?
☐	☒	Any oil seen in gatewells?

Comments: Gatewell debris ranged from 0 to 10% during inspections.

STSs/VBSs:

Yes	No	Item
☒	☐	STSs deployed in all slots and in service?
☐	☒	STSs in continuous-run mode (Note: if not, then STSs are in cycle-run mode)?
☒	☐	STSs inspected this week? If so, were results acceptable? ☒ Yes ☐ No ☐ N/A
☐	☒	VBSs differentials checked this week? If so, were results acceptable? ☐ Yes ☐ No ☒ N/A

Comments: STS's were operating on cycle mode due to CH0 lengths being over the 120 mm criteria point.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	Item
☒	☐	Orifices operating satisfactory? How many are open and in service? 19.
☒	☐	Dewaterer and cleaning systems operating satisfactory?

Comments: Orifice checks were conducted every six hours during this reporting period.

Collection Facility: Collection into raceways for barge transport ended at 1500 on August 14 and began collecting all fish into holding tanks for truck transport.

Transport Summary: Barging ended with the last barge departing on August 14. Alternate day trucking began on August 14 with the first truck departing on August 16. Trucking is scheduled to continue through 0700 on October 1. A total of 58 fish were collected and 49 were transported.

River Conditions

General Comments.

Table 1. River conditions at Lower Monumental Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature (°F)*		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
30.0	26.0	17.0	13.1	71.8	70.9	7.0	5.0

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on August 16. There were zero live fish. Mortalities included 14 Siberian prawns and 13 YOY American shad.

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on August 3. During this reporting period, SMP personnel euthanized 226 Siberian prawns with a total weight of 301 grams.

Avian Activity: Gulls were the predominant piscivorous bird species observed during fish ladder inspections this week. Tailrace counts ended on July 13.

Research: No onsite research is in progress at this time.

Project: Little Goose
Biologists: Scott St. John & Richard Weis
Dates: August 11 – August 17, 2017

Turbine Operation

Yes No Turbine Unit Status
☐ ☒ All 6 turbine units available for service throughout the week (see Table 1 for outage details).
☒ ☐ Available turbine units operated within 1% peak efficiency constraint.
Constraint in effect: ☒ Hard ☐Soft.

Table 1. Little Goose Unit Outages

Unit	OOS Date	OOS Time	RTS Date	RTS Time	Outage Description
5	14-Apr	14:11	ERTS Feb 2018	17:00	Forced: Excessive Vibration
4	14-Aug	07:50	09-Sep	17:00	Unit Annual

Comments: None.

Adult Fish Passage Facility

The adult fishway was inspected by Corps biologists and Anchor QEA staff on August 13 and August 17.

Fish Ladder:

Yes	No	Location, Criteria and Measurements
☒	☐	Fish Ladder Exit Differential (Criteria – Head ≤ 0.5')
☒	☐	Fish Ladder Picketed Lead Differential (Criteria – Head ≤ 0.3')
☒	☐	Fish Ladder Depth over Weirs (Criteria – Head over weir 1.0' to 1.3')
☐	☒	Emergency Ladder Exit Cooling Water Pumps in Service
☐	☒	Emergency Ladder Exit Cooling Water Pumps Operating Satisfactorily.

Comments: Emergency cooling pump permanent power is scheduled to be installed during the winter maintenance outage.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location, Criteria and Measurements
☐	☐	☒	South Shore Entrance (SSE-1) Weir Depth (Criteria: ≥ 8.0')
☐	☐	☒	South Shore Entrance (SSE-2) Weir Depth (Criteria: ≥ 8.0')
☒	☐		South Shore Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
☐	☐	☒	North Powerhouse Entrance (NPE-1) Weir Depth (Criteria: ≥ 7.0' or on sill)
☐	☐	☒	North Powerhouse Entrance (NPE-2) Weir Depth (Criteria: ≥ 7.0' or on sill)
☒	☐		North Powerhouse Entrance Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
☒	☐	☐	North Shore Entrance (NSE-1) Weir Depth (Criteria: ≥ 6.0' or on sill)
☒	☐	☐	North Shore Entrance (NSE-2) Weir Depth (Criteria: ≥ 6.0' or on sill)
☒	☐		North Shore Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
☒	☐		Collection Channel Surface Velocity (Criteria: 1.5 – 4.0 fps)

Comments: None.

Auxiliary Water Supply System:

Yes	No	In Service and Operating Satisfactory?
☒	☐	AWS Fish Pump 1 (operating).
☒	☐	AWS Fish Pump 2 (operating).
☒	☐	AWS Fish Pump 3 (operating).

Comments: None.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	Item
☒	☐	Forebay debris load acceptable.
☒	☐	Trash rack differentials measured this week? If so, were differentials acceptable? ☒ Yes ☐ No ☐ N/A.
☐	☒	Any debris seen in gatewells (i.e: over 10% coverage)?
☐	☒	Any oil seen in gatewells?

Comments: There is an estimated 100 square feet of floating woody debris currently in the forebay. Track rack differentials on unit 1 were measured on August 12 and were in criteria.

Spillway Weir: The spillway weir was closed for the season on July 19 at 09:00.

ESBS/VBS:

Yes	No	Item
☒	☐	ESBSs deployed in all slots and in service?
☐	☒	ESBSs inspected this week? If so, were results acceptable? ☐ Yes ☐ No ☒ N/A
☒	☐	VBSs differentials checked this week? If so, were results acceptable? ☒ Yes ☐ No ☐ N/A

Comments: VBS differentials were measured on unit 1 on August 12 and were in criteria.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	Item
☒	☐	Orifices operating satisfactory? How many are open and in service? 20 open.
☒	☐	Dewaterer and cleaning systems operating satisfactory? N/A

Comment: Orifices and primary dewatering structure are being backflushed and cleaned every 8 hours.

Collection Facility: Juvenile Fish Facility is currently operating.

Transport Summary: The collection and transportation facility operated in criteria this report period. A total of 2,661 fish were collected and 2,449 were transported during this report period. Barge transportation occurred every other day through August 14, and trucking commenced on August 16. The descaling and mortality rates were 1.0% and 1.2% respectively. This weekly report period saw 15 adult lamprey removed from the raceways or sample and released one mile above the Dam at Little Goose Landing.

River Conditions

River conditions during the week are outlined in Table 2 below.

Table 2. River conditions at Little Goose Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (°F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
29.9	26.5	10.8	9.6	70.9	70.0	5.7	4.8

*Ladder temperature.

Comment: None.

Other

Inline Cooling Water Strainers: Cooling water strainers will be inspected again starting in December.

Invasive Species: No invasive species have been observed on the mussel station.

Avian Activity: USDA bird hazing ended on June 25. See table 3 for USACE counts.

Table 3. Daily Piscivorous bird counts at Little Goose Dam.

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
08-11	12:00	26	4	0	0
08-12	13:30	32	4	0	1
08-13	09:00	28	3	0	2
08-14	07:30	20	0	0	0
08-15	14:00	28	5	0	0
08-16	14:00	19	3	0	0
08-17	13:00	21	4	0	0

Gas Bubble Trauma: GBT sampling was conducted on August 14. There were 100 fish examined, 1 of which showed signs of GBT.

Research: No research is currently being conducted at this time.

Siberian Prawn: Siberian prawns collected in the sample at the Juvenile Fish Facility are humanely euthanized by Oregon Department of Fish and Wildlife and Anchor, frozen and properly disposed of in a landfill. There were 2,153 prawns collected in the sample and euthanized during this report period. Prawn numbers are outlined in Table 4 below.

Table 4. Daily Siberian prawn sample.

Date	Sample	Collection
08-11	287	574
08-12	184	368
08-13	193	386
08-14	208	416
08-15	362	362
08-16	583	583
08-17	336	336
Total	**2153**	**3025**

Project: Lower Granite
Biologists: Elizabeth Holdren and Stephen Hampton
Dates: August 11 – August 17, 2017

Turbine Operation

Yes	No	Turbine Unit Status
☐	☒	All 6 turbine units available for service throughout the week (see comments below for outage details).
☒	☐	Available turbine units operated within 1% peak efficiency constraint. Constraint in effect: ☒ Hard ☐Soft.

Comments: Unit 1 remains out of service for blade/runner repair. Unit 2 currently has hydraulically locked blades that limit operation to the upper end of 1% peak efficiency constraint. Unit 4 was returned to service on August 17 at 1230 hours after completion of annual maintenance.

Adult Fish Passage Facility

General comments: Adult fish facilities were inspected by Corps or Anchor QEA biologists August 11, 12, 13, and 16.

Fish Ladder:

Yes	No	Location, Criteria, and Measurements
☒	☐	Fish Ladder Exit Differential (Criteria – Head ≤ 0.5')
☒	☐	Fish Ladder Picketed Lead Differential (Criteria – Head ≤ 0.3')
☒	☐	Fish Ladder Depth over Weirs (Criteria – Head over weir 1.0' to 1.3')
☒	☐	Ladder Temperature Pumps in Service.
☒	☐	Ladder Temperature Pumps Operating Satisfactorily.

Comments: The fish ladder temperature control system pumps remain in operation.

Fish Ladder Entrances and Collection Channel:

Yes	No	Sill	Location, Criteria and Measurements
☒	☐	☐	South Shore Entrance (SSE-1) Weir Depth (Criteria: ≥ 8.0' or on sill)
☒	☐	☐	South Shore Entrance (SSE-2) Weir Depth (Criteria: ≥ 8.0' or on sill)
☒	☐		South Shore Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
☒	☐	☒	North Powerhouse Entrance (NPE-1) Weir Depth (Criteria: ≥ 8.0' or on sill)
☒	☐	☒	North Powerhouse Entrance (NPE-2) Weir Depth (Criteria: ≥ 8.0' or on sill)
☒	☐		North Powerhouse Entrance Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
☒	☐	☐	North Shore Entrance (NSE-1) Weir Depth (Criteria: ≥ 7.0' or on sill)
☐	☒	☐	North Shore Entrance (NSE-2) Weir Depth (Criteria: ≥ 7.0' or on sill)
☒	☐		North Shore Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
☒	☐		Collection Channel Velocity (Criteria: 1.5 – 4.0 fps)

Comments: NSE2 has been out of service since 2011 and remains set with a chain fall hoist in the closed position to improve channel/tailwater head differential. NPE1 and NPE 2 remain out of service in the sill position until in water work repairs are coordinated. A ROV inspection was conducted August 14 to determine requirements for repairing the gates. Cotter pins on all gates are scheduled to be replaced during the 2017-2018 winter adult fishway outage.

Collection Channel Velocity: Collection channel velocities were in criteria on all inspections.

Auxiliary Water Supply System:

Yes	No	In Service and Operating Satisfactory?
☒	☐	AWS Fish Pump 1 (operating).
☐	☒	AWS Fish Pump 2 (operating).
☒	☐	AWS Fish Pump 3 (operating).

Comments: AWS pump 2 is in standby mode. August 14 at 1226 hours fish pumps were taken offline for ROV inspection on NPE weirs 1 and 2. August 14 at 1431 hours fish pumps returned to service after ROV inspection was completed.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	Item
☒	☐	Forebay debris load acceptable? Debris was observed in the powerhouse forebay this week.
☒	☐	Trash rack differentials measured this week? If so, were differentials acceptable? ☒ Yes ☐ No ☐ N/A.
☐	☒	Debris in gatewells (i.e.: over 10% coverage)?
☐	☒	Oil in gatewells?

Comments: Forebay debris in front of the powerhouse averaged about 35 square yards this week.

ESBSs/VBSs:

Yes	No	Item
☐	☒	ESBSs deployed in all slots and in service?
☐	☒	ESBSs inspected this week? If so, were results acceptable? ☐ Yes ☐ No ☒ N/A
☐	☒	VBSs differentials checked this week? If so, were results acceptable? ☐ Yes ☐ No ☐ N/A

Comments: ESBS were removed August 1-3 as part of early dewatering for Phase 1a bypass upgrades. Screens were inspected for fish following removal. No fish were observed.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

Yes	No	Item
☐	☒	Orifices operating satisfactory? There are 18 orifices operating.
☐	☒	Dewaterer and cleaning systems operating satisfactory?

Comments: The bypass is dewatered.

Collection Facility: The collection facility is dewatered.

Transport Summary: Barge transport from Little Goose and Lower Monumental on even number days continued through August 14. Truck transport started on August 16 from Little Goose and Lower Monumental.

River Conditions

General Comments.

Table 1: River conditions at Lower Granite Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (F°)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
31.22	28.42	18.33	16.48	66.5	68.5	5.0	4.0

*Cooling water intake temperature.

Other

Adult Fish Trap Operations: The adult trap operated Monday through Friday at a 27% sample rate. The adult trap sample rate was reduced to 20% and schedule changed from 5 days per week to 7 days per week at the end of the sample day on August 17th.

Inline Cooling Water Strainers: N/A.

Invasive Species: The Zebra mussel trap was inspected August 13, no signs of mussels were present.

Avian Activity: N/A

Table 2. Daily piscivorous bird counts at Lower Granite Dam.

Date	Time (hours)	Gulls	Cormorants	Caspian Terns	Pelicans
August 11	10:10	5	15	0	0
August 12	11:00	6	17	0	0
August 13	10:10	3	26	0	0
August 14	13:06	2	19	0	0
August 15	15:09	2	15	0	0
August 16	13:14	4	30	0	0
August 17	12:15	1	20	0	0

Spill: The RSW remains closed due to forebay surface water temperature. Lower Granite is operating in according to Fish Passage Plan Table LWG-9.

Gas Bubble Trauma (GBT) Monitoring: N/A.

Research: No on-site research is occurring at this time.