

**U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#01-2019**

Project: McNary

Biologist: Bobby Johnson and Denise Griffith

Dates: March 1 to 7, 2019

Turbine Operation

Yes	No	Turbine Unit Status	Hard	Soft
	X	All 14 turbine units available for service. (See table & comments below for details).		
X		Available turbines operated within 1% peak efficiency? Constraint in effect.		X

Table 1. McNary Unit Outages (OOS) and Return to Service (RTS).

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
3	3/4	1033	3/4	1640	Speed switches.

Comments: The hard constraint will begin April 1.

Adult Fish Passage Facilities

McNary fisheries biologists performed measured inspections of the adult fishways on March 1 and 7. Preparing for the juvenile collection channel water test consumed most of the time during the week as described below. The biologist did review the ladders control system panel view on March 4 and 6. Winter maintenance at the Washington and Oregon ladders occurred in January and February, respectively. Due the severe winter weather, the Oregon ladder returned to service as outlined in Table 2 below.

Table 2. Oregon Shore Ladder Return on March 1.

Time	Phase
NA	Ladder was on orifice flow on February 28 by 1631 hours.
0840	Exit weirs to automatic mode.
0903 to 1053	Restart all three fish pumps but pump 3 trips differential and over current alarms.
1140	Fish pump 1 returns to service.
1150	Fish pump 2 returns to service. Entrances to automatic mode.
1158 to 1203	Fish pump 3 declared out of service (relay). Pumps 1 and 2 blade angles increased to 26 degrees.
1337 to 1352	Fish pump 2 out of service due to noise. Fitting and screen adjusted.
1352	Ladder fully functional with two fish pumps.

Fish Ladder Exits:

Yes	No	Location	Criteria	Comments
X		Oregon Exit	Head over weir 1.0' to 1.3'	
X		Oregon Count Station Differential	0.0' to 0.5'	
X		Washington Exit	Head over weir 1.0' to 1.3'	
X		Washington Count Station Differential	0.0' to 0.5'	

Comments: Debris loads were light near the Oregon exit and minimal near the Washington exit.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Comments
	X		North Oregon Entrance Head Differential	1.0' – 2.0'	0.4' on March 1.
	X		NFEW2 Weir Depth	≥ 8.0'	7.8' on March 1.
	X		NFEW3 Weir Depth	≥ 8.0'	7.8' on March 1.
X			South Oregon Entrance Head Differential	1.0' – 2.0'	
	X		SFEW1 Weir Depth	≥ 8.0'	7.7' on March 1.
	X		SFEW2 Weir Depth	≥ 8.0'	7.7' on March 1.
X			Oregon Collection Channel Velocities	1.5 to 4.0 fps	Averaged 2.2 fps.
X			Washington Entrance Head Differential	1.0' – 2.0'	
X			WFE2 Weir Depth	≥ 8.0'	
X			WFE3 Weir Depth	≥ 8.0'	

Comments: On March 1, the out of criteria readings were due to fish pump 2 being out of service as describe in Table 2 above. On March 7, the operator was required to reset the level indicators for the Oregon south powerhouse entrance weirs, SFEW1 and SFEW2.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
X			WA shore Wasco County PUD Turbine Unit
	X		WA shore Wasco PUD Bypass
X		X	Oregon Ladder Fish Pump 1, Blade angle: 22 degrees
X			Oregon Ladder Fish Pump 2, Blade angle: 20 degrees
X		X	Oregon Ladder Fish Pump 3, Blade angle: 22 degrees
		X	OR North Powerhouse Pool supply from juvenile fishway

Comments: These are the fish pump outages after March 1. As described above, fish pump 3 was out of service. The pump returned to service on March 4, at 1344 hours. Fish pump 1 was out for service on March 6, from 0849 to 1357 hours. The grease reservoir was refilled and the farval was adjusted. The other fish pumps were operated with higher blade angles to 26 degrees during these outages. The juvenile facility will return to service in late March.

Juvenile Fish Passage Facility

The juvenile system remains out of service for winter maintenance.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Minimal to moderate. New debris is minimal.
X			Trash rack differentials measured this week?	Twice.
X			Trash rack differentials acceptable	
	X		Any debris seen in gatewells (% coverage)	
	X		Any oil seen in gatewells?	

Comments: Changes in wind direction moved the debris back and forth between the powerhouse and Oregon shoreline. There was no debris at the spillway. Forebay debris removal and trash rack cleaning are scheduled for the last week in March.

Extended-length submersible bar screen (ESBSs)/Vertical barrier screen (VBSs):

Yes	No	NA	Item
		X	ESBSs deployed in all slots and in service?
		X	ESBSs inspected this week?
		X	ESBSs inspection results acceptable?
		X	VBSs differentials checked this week?
		X	VBSs differentials acceptable?

Comments: ESBS maintenance continues. ESBS installation is scheduled to begin on April 2, at which time, VBS differential monitoring will begin.

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

Yes	No	NA	Item	Number of orifices in service
		X	Orifices operating satisfactory?	
		X	Dewaterer and cleaning systems operating satisfactory?	

Comments: The juvenile channel is out of service for winter maintenance. Table 3 below outlines the water test performed for the down well valve pit rehabilitation contractor.

Table 3. Juvenile Collection Channel Water Test.

Date	Time	Orifices Open	Reason
3/5	0800 to 1030	One	Remove ice from channel floor/after check for fish.
	1300 to 1500	Up to 42	Remove ice from channel using emergency bypass.
3/6	0900 to 1100	Up to 42	Complete ice removal using emergency bypass.
	1230 to 1430	NA	Check channel system for fish.
3/7	1000 to 1200	Up to 12	Test repaired drains for leaks using modified primary bypass/after check for fish.

One Chinook smolt was observed during the operations described in Table 3. The leak test was completed satisfactorily. The down well contract will be completed March 8.

A contractor removed damaged structure and rehabilitated the outfall pipe in February. However, the walkway and the outfall sprinklers have not been replaced.

Bypass Facility:

Yes	No	NA	Item
		X	Sample gates on?
		X	PIT-tag sampling system on?

Comments: All systems are out of service for winter maintenance. This week, the electrical staff replaced breakers throughout the facility. Also, the fisheries staff completed rehabilitating the separator supply valves.

TSW Operations: The TSWs will be installed in late March.

River Conditions

Table 4. 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
153.3	108.6	0.0	0.0	36	35	6.0	6.0

Comments: The above data is supplied by the control room.

Other

Inline Cooling Water Strainers: On March 5, thirty two juvenile lamprey and three juvenile shad mortalities were removed. No other fish were observed.

Avian Activity: Avian counts begin April 1. Blue herons, pelicans, gulls, cormorants, grebes and bald eagles were observed in low numbers this week.

Invasive Species: None have been seen during the winter outages. Mussel stations will be examined in late March.

Fish Rescue/Salvage: On March 4, the navigation lock was dewatered. Only one adult sucker and a small number of adult shad mortalities were noted. All fish were highly decayed.

Research: None is occurring.

Project: Ice Harbor

Biologist: Ken Fone

Dates: March 1 – March 7, 2019

Turbine Operation

Yes	No	Turbine Unit Status	Hard	Soft
	X	All 6 turbine units available for service (see table & comments below for details).		
X		Available turbines operated within 1% peak efficiency? Constraint in effect.		X

Ice Harbor Unit Outages (OOS) and Return to Service (RTS)

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
2	4/25/16	0606	---	---	Runner replacement
4	9/20/18	1619	---	---	Investigate for possible oil leak.

Comments: None.

Adult Fish Passage Facility

Ice Harbor fish facility staff inspected the adult fishways on March 4, 5, and 6.

Fish Ladders:

Yes	No	Location	Criteria	Measurements
X		North Ladder Exit Differential	Head \leq 0.3'	
X		North Ladder Picketed Lead Differential	Head \leq 0.3'	
X		North Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	
X		South Ladder Exit Differential	Head \leq 0.3'	
X		South Ladder Picketed Lead Differential	Head \leq 0.3'	
X		South Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			South Shore Entrance (SFE-1) Weir Depth	\geq 8.0' or on sill	
X			South Shore Channel/Tailwater Differential	1.0' – 2.0'	
X			South Shore Channel Velocity	1.5 – 4.0 fps	
X			North Powerhouse Entrance (NFE-1) Weir Depth	\geq 8.0' or on sill	
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0' – 2.0'	
X			North Shore Entrance (NEW-1) Weir Depth	\geq 8.0' or on sill	
	X		North Shore Channel/Tailwater Differential	1.0' – 2.0'	0.9'

Comments: The north shore channel/tailwater differential was slightly below criteria on March 4. NEW-1 is in manual control, because of problems with the transducer for the north shore channel elevation (electricians are working on the transducer). The operator raised the entrance weir gate a small amount to increase the channel/tailwater differential.

A new season of adult fish counting will begin on April 1. The north shore picketed leads are currently installed, because the hoist is not functioning to raise the leads out of the water. A work order was created to repair the hoist.

Auxiliary Water Supply (AWS) System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
6 pumps	2 pumps		Status of the 8 South Shore AWS Pumps
2 pumps	1 pump		Status of the 3 North Shore AWS Pumps

Comments: None.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	77 square yards
		X	Gatewell drawdown measured this week?	
		X	Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	STSs blocking view into slots
	X		Any oil seen in gatewells?	

Comments: None.

STSs/VBSs:

Yes	No	NA	Item
	X		STSs deployed in all slots and in service?
		X	STSs in continuous-run mode (Note: if not, then STSs are in cycle-run mode)?
		X	STSs inspected this week?
		X	STSs inspection results acceptable?
		X	VBSs differentials checked this week?
		X	VBSs differentials acceptable?

Comments: The STSs are removed for annual maintenance.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
		X	Orifices operating satisfactory?	0
		X	Dewaterer and cleaning systems operating satisfactory?	

Comments: The juvenile fish channel is unwatered for annual maintenance.

Juvenile Fish Facility: The fish facility is unwatered for annual maintenance.

Fish Sampling: Sampling begins on April 1.

Removable Spillway Weir (RSW): Voluntary spill for fish passage begins on April 3.

River Conditions

River conditions at Ice Harbor 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
38.8	34.0	0	0	37	37	11.0	11.0

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Monthly turbine cooling water strainer inspections will take place later in March.

Avian Activity: There were low numbers of cormorants seen roosting in the tailrace on the south shore. About 20 pelicans have been observed in the forebay, most of them roosting on the south shore ladder exit debris boom.

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

Siberian Prawn: Siberian prawns collected in the sample at the Juvenile Fish Facility will be humanely euthanized by Anchor, frozen and properly disposed of in a landfill.

Fish Rescue/Salvage: Unwatering activities that involved fish rescue did not occur.

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

Project: Lower Monumental

Biologists: Chuck Barnes and Raymond Addis

Dates: March 1 - 7, 2019

Turbine Operation

Yes	No	Turbine Unit Status	Hard	Soft
	X	All 6 turbine units available for service (see table & comments below for details).		
X		Available turbines operated within 1% peak efficiency? Constraint in effect.		X

Lower Monumental Unit Outages (OOS) and Return to Service (RTS)

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
Unit 1	3/6/2019	07:10	3/6/2019	09:42	STS Inspection
Unit 2	3/7/2019	09:00	3/7/2019	14:05	STS Inspection/Hub Tapping
Unit 3	3/6/2019	09:37	3/6/2019	13:10	STS Inspection
Unit 4	3/1/2019	11:00	3/8/2019	ERTS	Dislodged Rotor Counterweight

Comments: None.

Adult Fish Passage Facility

The adult fishways were inspected by Corps and Anchor QEA biologists on March 2, 3 and 7.

Fish Ladder:

Yes	No	Location	Criteria	Measurements
	X	North Ladder Exit Differential	Head \leq 0.5'	
X		North Ladder Picketed Lead Differential	Head \leq 0.4'	
X		North Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	
X		South Ladder Exit Differential	Head \leq 0.5'	
X		South Ladder Picketed Lead Differential	Head \leq 0.3'	
X		South Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	

Comments: North Ladder Exit Differential was out of criteria on the March 3 inspection with a reading of 0.6 feet. Powerhouse personnel cleaned the ladder exit trash rack by boat on March 4.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			North Shore Entrance (NSE-1) Weir Depth	\geq 8.0' or on sill	
X			North Shore Entrance (NSE-2) Weir Depth	\geq 8.0' or on sill	
X			North Shore Channel/Tailwater Differential	1.0'–2.0'	
		X	South Powerhouse Entrance (SPE-1) Weir Depth	\geq 8.0' or on sill	
		X	South Powerhouse Entrance (SPE-2) Weir Depth	\geq 8.0' or on sill	
X			South Powerhouse Entrance Channel/Tailwater Differential	1.0'–2.0'	
	X	X	South Shore Entrance (SSE-1) Weir Depth	\geq 8.0'	
	X		South Shore Entrance (SSE-2) Weir Depth	\geq 6.0'	
X			South Shore Channel/Tailwater Differential	1.0' – 2.0'	

Comments: South Powerhouse Entrance weir (SPE-1) was on sill during all inspections with readings of 8.0, 7.3 and 8.0 feet respectively.

South Powerhouse Entrance weir (SPE-2) was on sill during all inspections with readings of 7.9, 7.3 and 8.0 feet respectively.

South Shore Entrance weir (SSE-1) was out of criteria on the March 2 and 3 inspections with readings of 7.5 and 7.6 feet respectively. Powerhouse operator placed the weir on sill on March 3. South Shore Entrance weir (SSE-1) was on sill during the March 7 inspection with a reading of 8.7 feet.

South Shore Entrance weir (SSE-2) was out of criteria on the March 2 and 3 inspections with readings of 4.9 and 4.8 feet respectively. SSE-2 was not set at 437 feet. Powerhouse operator placed the weir at 437 feet on March 3.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
No		X	AWS Fish Pump 1
Yes			AWS Fish Pump 2
Yes			AWS Fish Pump 3

Comments: AWS Fish pump 1 is out of service for a Seized Wicket Gate Bushings. There is no current return to service estimate date.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 – 10%
	X		Any oil seen in gatewells?	

STSs/VBSs:

Yes	No	NA	Item
	X		STSs deployed in all slots and in service?
	X		STSs in continuous-run mode (Note: if not, then STSs are in cycle-run mode)?
X			STSs inspected this week?
X			STSs inspection results acceptable?
		X	VBSs differentials checked this week?
		X	VBSs differentials acceptable?

Comments: STS's are not yet deployed in Units 4, 5 and 6. STS's for top three priority units were installed prior to March 1. STS's were in cycle-run to start the season.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	18
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: None.

Collection Facility: Fish collection was scheduled to begin on March 1, but due to cold weather, the collection facility was not watered up until 1200 on March 7.

Transport Summary: No transport at this time.

Spillway Weir: RSW scheduled to go into service at 0001 on April 3.

River Conditions

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
38.9	33.8	0.0	0.0	36.0	34.5	5.3	4.4

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on February 5. No live fish were recovered. Mortalities included 1 juvenile lamprey and 2 American shad.

Avian Activity: Tailrace counts of foraging piscivorous birds at Lower Monumental Dam will begin April 1st. Highest counts of foraging piscivorous birds in tailrace (PH1+PH2) at Lower Monumental Dam during this reporting period are documented in the table below.

Date	Time	Gulls	Cormorants	Terns	Grebes	Pelicans
March 1-7	NA	1	0	0	0	0

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on March 3.

Siberian Prawn: Siberian prawns collected in the sample at the Juvenile Fish Facility are humanely euthanized by PSMFC and Anchor, frozen and properly disposed of in a landfill. Daily and total Siberian prawn counts at Lower Monumental Dam for this reporting period are reported below.

Fish Rescue/Salvage: No Fish Rescue/Salvage took place during this reporting period.

Research: PNNL is installing equipment needed for the Fish Guidance Efficiency Study, which is scheduled to begin approximately April 20, 2019.

Project: Little Goose

Biologists: Scott St. John and Richard Weis

Dates: March 1-7, 2019

Turbine Operation

Yes	No	Turbine Unit Status	Hard	Soft
	X	All 6 turbine units available for service (see table & comments below for details).		
X		Available turbines operated within 1% peak efficiency? Constraint in effect.		X

Little Goose Unit Outages (OOS) and Return to Service (RTS)

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
5	04/21/17	00:54	03/31/21	17:00	Spider and Upper Guide Bearing Repair
4	03/04/19	06:11	03/04/19	15:50	Blown metering and relaying PT fuse

Comments: None.

Adult Fish Passage Facility

Little Goose fish facility and Anchor QEA staff inspected the adult fishways on March 04, 06 and 07.

Fish Ladder:

Yes	No	NA	Location	Criteria	Measurements
X			Fish Ladder Exit Differential	Head \leq 0.5'	
X			Fish Ladder Picketed Lead Differential	Head \leq 0.3'	
	X		Fish Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	0.7, 0.8, 0.7
		X	Fish Ladder Cooling Water Pumps in Service		
		X	Fish Ladder Exit Cooling Water Pumps Operating Satisfactorily		

Comments: Diffuser 13, the uppermost diffuser in the adult ladder, did not return to automatic control mode when put back into service and caused the depth over weirs to be out of criteria. The diffuser was placed into auto on March 08 and the weir depth is in criteria.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurement
	X		South Shore Entrance (SSE-1) Weir Depth	\geq 8.0'	6.6, 7.0, 6.4
	X		South Shore Entrance (SSE-2) Weir Depth	\geq 8.0'	6.6, 7.0, 6.4
	X		South Shore Channel/Tailwater Differential	1.0' – 2.0'	2.1
	X		North Powerhouse Entrance (NPE-1) Weir Depth	\geq 7.0' or on sill	6.8, 6.4
	X		North Powerhouse Entrance (NPE-2) Weir Depth	\geq 7.0' or on sill	6.9, 6.4
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0'–2.0'	
	X		North Shore Entrance (NSE-1) Weir Depth	\geq 6.0' or on sill	5.3, 5.7, 5.1
	X		North Shore Entrance (NSE-2) Weir Depth	\geq 6.0' or on sill	5.5, 5.4
	X		North Shore Channel/Tailwater Differential	1.0'–2.0'	0.9, 0.8
	X		Collection Channel Surface Velocity	1.5 – 4.0 fps	1.4, 1.3

Comments: The adult fishway has been operating on two fish pumps for this report period. All fish pumps had numerous oil and water leaks and other mechanical problems when they were returned to service. Fish pumps were taken out of service to conduct repairs one at a time. Project staff adjusted the adult fishway as close to criteria as

possible, but we were unable to maintain criteria with two fish pumps and without additional water input from the juvenile bypass system which is currently out of service for winter maintenance.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
X			AWS Fish Pump 1
X			AWS Fish Pump 2
X			AWS Fish Pump 3

Comments: Each fish pump has been taken out of service individually to repair multiple leaks and mechanical issues. All fish pumps were operating in criteria by the end of the day on March 08. An MFR will be distributed to FPOM for out of criteria conditions related to equipment issues.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comment
X			Forebay debris load acceptable? (amount)	14,400 ft ²
		X	Trash rack differentials measured this week?	
		X	Trash rack differentials acceptable	
		X	Any debris seen in gatewells (% coverage)	
		X	Any oil seen in gatewells?	

Comments: There is approximately 14,400 square feet of floating woody debris inside the trash shear boom in the immediate forebay. ESBS screens are currently being stored in the gatewell slots for winter maintenance.

ESBS/VBS:

Yes	No	NA	Item
		X	ESBSs deployed in all slots and in service?
		X	ESBSs inspected this week?
		X	ESBSs inspection results acceptable?
		X	VBSs differentials checked this week?
		X	VBSs differentials acceptable?

Comments: ESBS screens are currently being stored in the gatewell slots for winter maintenance.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
		X	Orifices operating satisfactory?	
		X	Dewaterer and cleaning systems operating satisfactory?	

Comments: The juvenile bypass system is currently dewatered for winter maintenance.

Collection Facility: The juvenile fish facility is currently dewatered for winter maintenance.

Transport Summary: N/A

Spillway Weir: N/A

River Conditions

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
38.8	33.1	0.0	0.0	37.6	32.0	5.6	4.7

*Ladder temperature.

Other

Inline Cooling Water Strainers: Cooling water strainers are currently being inspected every other week and results are sent to district for FPOM distribution.

Avian Activity: Daily piscivorous bird counts at Little Goose Dam will commence on April 01.

Invasive Species: No zebra or Quagga mussels were observed.

Siberian Prawn: N/A

Gas Bubble Trauma (GBT): N/A

Fish Rescue/Salvage: The navigation lock was dewatered for winter maintenance during this report period. The fish salvage resulted in 5 adult shad mortalities. Results were sent to the district office.

Research: N/A

Project: Lower Granite

Biologists: Elizabeth Holdren

Dates: March 1-7, 2018

Turbine Operation

Yes	No	Turbine Unit Status	Hard	Soft
	X	All 6 turbine units available for service (see table & comments below for details).		
X		Available turbines operated within 1% peak efficiency? Constraint in effect.		X

Lower Granite Unit Outages (OOS) and Return to Service (RTS)

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
2	02/11	0830			Annual Maintenance/ Digital Governor Install

Comments: NA

Adult Fish Passage Facility

The adult fishway was watered up at 1235 hours February 14 with AWS pumps 2 and 3 in service and the ladder in criteria February 26. Lower Granite biological staff inspected the adult fishways on Month 4, 5, and 7.

Fish Ladder:

Yes	No	NA	Location	Criteria	Comments
X			Fish Ladder Exit Differential	Head \leq 0.5'	
X			Fish Ladder Picketed Lead Differential	Head \leq 0.3'	
X			Fish Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	
	X		Fish Ladder Cooling Water Pumps in Service		
		X	Fish Ladder Cooling Water Pumps Operating Satisfactorily		

Comments: NA

Fish Ladder Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Comments
X			South Shore Entrance (SSE-1) Weir Depth	\geq 8.0'	
X			South Shore Entrance (SSE-2) Weir Depth	\geq 8.0'	
X			South Shore Channel/Tailwater Differential	1.0' – 2.0'	
X			North Powerhouse Entrance (NPE-1) Weir Depth	\geq 8.0' or on sill	
X			North Powerhouse Entrance (NPE-2) Weir Depth	\geq 8.0' or on sill	
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0'–2.0'	
X			North Shore Entrance (NSE-1) Weir Depth	\geq 7.0' or on sill	
			North Shore Entrance (NSE-2) Weir Depth	\geq 7.0' or on sill	Closed
X			North Shore Channel/Tailwater Differential	1.0'–2.0'	
	X		Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: Collection channel velocity was out of criteria on one inspection with a reading of 1.3 fps. FOGs 1 and 10 are in operation and FOGs 4 and 7 remain bulkheaded off to improve channel head differentials.

Auxiliary Water Supply System:

Operating Satisfactorily	Standby	Out of Service	Auxiliary Water Supply (AWS)
No		Guide bearing repair	AWS Fish Pump 1
Yes			AWS Fish Pump 2
Yes			AWS Fish Pump 3

Comments: AWS pump 1 remains out of service for lower guide bearing repair.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	
		X	Trash rack differentials measured this week?	
		X	Trash rack differentials acceptable	
	X		Any debris seen in gatewells (% coverage)	
	X		Any oil seen in gatewells?	

Comments: NA

ESBSs/VBSs:

Yes	No	NA	Item
		X	ESBSs deployed in all slots and in service?
		X	ESBSs inspected this week?
		X	ESBSs inspection results acceptable?
		X	VBSs differentials checked this week?
		X	VBSs differentials acceptable?

Comments: ESBSs installation is scheduled for March 18-21.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

Yes	No	NA	Item	Number open and in service
		X	Orifices operating satisfactory?	
		X	Dewaterer and cleaning systems operating satisfactory?	

Comments: Contractor commissioning of the orifice gallery and primary dewaterer PLC and HMI programming continues. The orifice gallery and collection channel are scheduled to be watered up the week of March 18.

Collection Facility: Dewatered

Transport Summary: No Transport

Spillway Weir: Standby

River Conditions

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
42.9	33.9	0	0	37.2	36.6	5.0+	5.0+

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: N/A

Invasive Species: Nothing to report.

Avian Activity: Biologist daily piscivorous bird counts at Lower Granite Dam will begin April 1.

Gas Bubble Trauma (GBT) Monitoring: N/A

Adult Fish Trap Operations: Remains dewatered to avoid freezing damage due to cold temperatures.

Fish Rescue/Salvage: N/A

Research: N/A