

**U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#35-2018**

Project: McNary

Biologist: Bobby Johnson and Denise Griffith

Dates: October 26 to November 1, 2018

Turbine Operation

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

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

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
6	10/01	0740	12/04	NA	Nine year overhaul.
1 & 2	10/30	1000	10/30	1040	Rotated outages for ESBS camera inspections.

Comments: The soft one percent constraint began on November 1.

Adult Fish Passage Facilities

McNary fisheries biologists performed adult fishways measured inspections on October 27, 29 and 31. Adult fish counting concluded on October 31 and picketed leads were raised on November 1. Both count stations were winterized on November 1.

On October 29 and 30, from 1200 to 1600 hours each day, the tailwater was held at approximately 264 feet to allow installation of four temperature probe still wells in or near the Oregon ladder. This completed the work required by the project staff to convert the ladder temperature monitoring from Hoboware to an automated system.

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 (woody material) near the Oregon ladder exit and minimal to moderate (aquatic vegetation) near the Washington ladder exit. Picketed leads and trash racks were cleaned by the general maintenance staff as needed, including Saturday.

There are no problems to report for either exit.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Comments
X			North Oregon Entrance Head Differential	1.0' – 2.0'	
	X		NFEW2 Weir Depth	≥ 8.0'	7.9' on Oct 29.
	X		NFEW3 Weir Depth	≥ 8.0'	7.8' on Oct 29.
X			South Oregon Entrance Head Differential	1.0' – 2.0'	
X			SFEW1 Weir Depth	≥ 8.0'	
	X		SFEW2 Weir Depth	≥ 8.0'	7.9' on Oct 29.
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: The out of criteria points recorded on October 29 were possibly due to the low tailwater elevation at the time of the readings and the fact that only two fish pumps were in service as described below. On October 29, at 1219 hours, entrance weirs SFEW1 and SFEW2 raised for no known reason. The operator switched the weirs from automatic to manual mode and adjusted them both back down. After a short wait, the weirs were successfully returned to automatic mode.

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: 21 to 22, OOS.
X			Oregon Ladder Fish Pump 2, Blade angle: 20 to 21, 26.
X			Oregon Ladder Fish Pump 3, Blade angle: 22, 26.
X			OR North Powerhouse Pool supply from juvenile fishway.

Comments: On October 29, from 0450 to 0455 hours, fish pump 1 was off line due to a farval issue. From October 29 at 0508 hours to October 30 at 0844 hours, fish pump 1 was out of service to allow the electrical staff to resolve the farval issue. During the outage, the other two fish pumps were operated with blade angles set at 26 degrees.

Juvenile Fish Passage Facility

Maintenance at the facility continued.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Light to moderate near powerhouse.
X			Trash rack differentials measured this week?	Daily.
X			Trash rack differentials acceptable?	
	X		Any debris seen in gatewells? (% coverage)	
	X		Any oil seen in gatewells?	

Comments: The forebay debris loads near the powerhouse were light to moderate as some debris along the Oregon shore line had moved to the powerhouse. Debris consisted of aquatic vegetation and woody material. New incoming debris loads were minimal. Debris accumulations along the spillway were minimal.

No trash racks were cleaned and no problems were noted in the gatewell slots this week.

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: The brush cycles for the screens in 3A, 3C and 4A slots remained in timer mode. ESBSs were inspected in units 1 and 2 along with screens in 6A and 6B slots with no problems found. With unit 6 out of service, the ESBS in 6C slot could not be examined.

VBS differential monitoring occurred daily. No high differentials were measured. From October 29 to November 1, nine screens were cleaned. No fish mortalities were noted.

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

Yes	No	NA	Item	Number of orifices in service
X			Orifices operating satisfactory?	42
X			Dewatering and cleaning systems operating satisfactory?	

Comments: Orifices were adjusted for the VBS cleaning as required. Due to an increased in fine debris, the screen cleaning brushes cycle sequence was lowered to every two hours on October 29.

Bypass Facility:

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

Comments: All systems remained out of service for winter maintenance. Rehabilitation of the separator upwell supply valves operators continued.

TSW Operations: The TSWs remained out of service.

River Conditions

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
119.7	85.4	0.0	0.0	58.0	58.0	6.0	6.0

Comments: The above data is supplied by McNary control room. Spillway hoist and crane maintenance concluded this week.

Other

Inline Cooling Water Strainers: The next cooling water strainer examinations will occur in December.

Avian Activity: Casual avian observations were made during other inspections. One pelican was noted this week on project with no terns being observed. Gull and cormorant numbers appeared to fluctuate with the juvenile shad outmigration. Gulls were feeding in the powerhouse flow along with cormorants at the outfall. Both species were roosting on structures around the tailwater area.

Gulls and cormorants were occasionally noted in the forebay area.

Large gull flocks were noted roosting around the project outside the observation zones. Areas near both boat docks were used.

Invasive Species: The next mussel station examinations will occur in late November.

Fish Rescue/Salvage: None occurred.

Research: The University of Idaho adult lamprey passage telemetry study continued. However, on November 7, data collection for this year will conclude with some equipment being removed and stored for next season.

Project: Ice Harbor

Biologist: Ken Fone

Dates: October 26 – November 1, 2018

Turbine Operation

Yes	No	Turbine Unit Status		
	X	All 6 turbine units available for service (see table & comments below for details).	Hard	Soft
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	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
5	10/29/18	1103	10/29/18	1620	Tap oil from outer Kaplan pipe
3	10/29/18	1000	10/31/18	1053	Line 2 BPA relay calibration

Comments: The soft one percent constraint began on November 1.

Adult Fish Passage Facility

Ice Harbor fish facility staff inspected the adult fishways on October 29, 30, and 31.

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-2) 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'	

Comments: Adult fish counting via video review began on November 1 and will continue through the end of February.

Auxiliary Water Supply (AWS) System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
5 pumps	3 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)	50 square yard
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 to 5%
	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 in cycle-run mode.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	20-22
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: None.

Juvenile Fish Facility: The fish facility is being operated in primary bypass.

Fish Sampling: Sampling is done for the year.

Removable Spillway Weir (RSW): Voluntary spill for fish passage is done for the year.

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
27.5	14.9	0	0	58	57	8.7	7.9

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Monthly inspections for lamprey ended in June and will start up again in December.

Avian Activity: There were low amounts of pelicans, and moderate amounts of gulls and cormorants observed around the project. Most of the cormorants were observed roosting on Eagle Island, with some foraging downstream of the powerhouse. The gulls were observed roosting on the south shore downstream of the dam.

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 are humanely euthanized by Anchor, frozen and properly disposed of in a landfill. Sampling is done for the year.

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

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

Project: Lower Monumental

Biologists: Chuck Barnes and Raymond Addis

Dates: October 26 – November 1, 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	X

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

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
Unit 1	12/10/2014		11/20/2018	ERTS	Rehabilitation Overhaul
Unit 5	10/22/2018	1037	11/1/2018	0830	XJ Breaker Annual
Unit 4	9/19/2018	1600	12/28/2018	ERTS	Inspection of Oil Governor System/Blade Seal Replacement

Comments: Units went into Hard Constraint at 0001 on April 1. The soft one percent constraint began on November 1.

Adult Fish Passage Facility

The adult fishways were inspected by Corps biologists on October 30, 31 and November 1.

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: None.

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			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 (SPE-1) was at sill during all inspections with readings of 7.5, 7.3 and 7.2 feet respectively.

South Powerhouse Entrance (SPE-2) was at sill during all inspections with readings of 7.5, 7.3 and 7.2 feet respectively.

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 seized Wicket Gate Bushings. Current estimated RTS date is 7 February, 2019.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	0 sq yd average
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?	

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: STS's operating on cycle mode due to average sub-yearling Chinook and sockeye lengths being greater than 120 mm.

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: PDW mechanical cleaning brush was turned off on weekend days in case of faults. The run frequency of the bubbler debris removal system was increased to keep the screen clear of debris.

Collection Facility: Collection for truck transport ended at 0700 on October 1 and the facility operation was changed to primary bypass. The facility was dewatered at 1230 on October 3 for cleaning and winter maintenance.

Transport Summary: Alternate day trucking ended at 0700 on October 1.

Spillway Weir: RSW went into service when Spring Spill began at 0001 on April 3. RSW was closed at 1245 on August 8 due to TMT decision. Summer Spill ended at 00:00:00 on September 1.

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
25.6	15.5	0	0	58.0	57.0	5.8	5.4

*Scroll case temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers are not inspected in October.

Avian Activity: N/A

Observation of piscivorous birds during fish ladder inspections ended on October 1. Bird hazing efforts by USDA personnel ended at 2000 on June 2. Tailrace observations for bird hazing effectiveness ended with the June 30 observation.

Outfall pipe bird water cannons were turned off on June 11, due to a damaged water cannon at pipe exit. The standby set of cannons have a missing water cannon and were already out of service.

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on October 1.

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. Juvenile fish collection ended at 0700 on October 1.

Fish Rescue/Salvage: A fish salvage was completed for Unit 4 scroll case Monday, October 29. JFF personnel were present in the scroll case as the water was lowered and zero fish were found.

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

Project: Little Goose

Biologists: Scott St. John and Richard Weis

Dates: October 26- November 01, 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	X

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

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
5	04/14/17	14:11	11/16/18	17:00	Spider and upper guide bearing repair.
3	10/23/18	07:04	11/09/18	17:00	Unit Annual

Comments: The soft one percent constraint began on November 1.

Adult Fish Passage Facility

Little Goose fish facility and Anchor QEA staff inspected the adult fishway on October 28, 30 and November 01.

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'	
	X		Fish Ladder Cooling Water Pumps in Service		
		X	Fish Ladder Exit Cooling Water Pumps Operating Satisfactorily		

Comments: None.

Fishway Entrances and Collection Channel

Yes	No	Sill	Location	Criteria	Measurements
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 7.0' or on sill	
		X	North Powerhouse Entrance (NPE-2) Weir Depth	\geq 7.0' or on sill	
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	
X			North Shore Entrance (NSE-2) Weir Depth	\geq 6.0' or on sill	
	X		North Shore Channel/Tailwater Differential	1.0'–2.0'	0.9
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: Adult fishway control system is currently operating in manual mode. North shore entrance channel/tailwater differential was found at 0.9 feet on October 30. Adjustments were made immediately and the fishway is currently operating within criteria.

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: None.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

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

Comments: There is currently 254 sq. ft. of floating woody debris inside the trash shear boom in the forebay.

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?
	X		VBSs inspected this week?

Comments: VBS differentials were measured October 31 on units 1 and 2 and were in criteria.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	20
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: None.

Collection Facility: Juvenile fish facility switched to primary bypass at 07:00 on November 01.

Transport Summary: The collection and transportation facility operated within criteria this report period. A total of 225 fish were collected, and 225 were transported by truck. The descaling and mortality rates were 2.3% and 0% respectively. There were no adult lamprey removed from the separator or sample and released one mile above the Dam at Little Goose Landing.

Spillway Weir: Adjustable spillway weir was closed for the season on August 03 at 15:30.

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
23.6	15.3	0.0	0.0	58.3	57.1	6.0	5.5

*Ladder temperature.

Other

Inline Cooling Water Strainers: Inline cooling strainers are being inspected and results submitted every other week.

Avian Activity: Average daily piscivorous bird counts by zone for the report period at Little Goose Dam.

Zone	Gull	Cormorant	Tern	Pelican	Grebe
Unmodified boat barrier	0	0	0	0	0
Modified boat barrier*	0	0	0	0	0
Forebay debris	0	0	0	0	0
Trash/shear boom	0	0	0	0	0
Forebay count	33	15	0	0	0
Tailrace count	13	5	0	0	3

*modified and unmodified boat barrier section was removed on 7 buoys directly upstream of the ASW.

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

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. Daily and total Siberian prawn counts at Little Goose Dam for this reporting period are reported below.

Date	Sample (euthanized)	Collection*
10-26	17	17
10-27	23	23
10-28	29	29
10-29	22	22
10-30	7	7
10-31	17	17
11-01	84	84
Total	199	199

*Collection and sample numbers are the same as the facility when sampling at 100%

Gas Bubble Trauma (GBT): GBT monitoring ended for the year.

Fish Rescue/Salvage: None.

Research: None.

Project: Lower Granite

Biologists: Elizabeth Holdren and Stephen Hampton

Dates: October 26 – November 1, 2018**Turbine Operation**

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

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

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
3	Oct 1	0700			Annual Maintenance and Digital Governor Upgrade

Comments: Units were rotated out of service October 28, 29, and 30 for ESBS/VBS inspections. The soft one percent constraint began on November 1.

Adult Fish Passage Facility

Lower Granite and Anchor QEA staff inspected the adult fishway October 27, 28, 30 and 31.

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'	
	X		Fish Ladder Cooling Water Pumps in Service		
		X	Fish Ladder Cooling Water Pumps Operating Satisfactorily		

Comments: None.

Fish Ladder Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
	X		South Shore Entrance (SSE-1) Weir Depth	\geq 8.0'	7.9
	X		South Shore Entrance (SSE-2) Weir Depth	\geq 8.0'	7.9, 7.9
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	OOS
X			North Shore Channel/Tailwater Differential	1.0'–2.0'	
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: NPE 2 gate set point for sill position is 628.2 feet to prevent cable spooling though the actual gate elevation is on sill at 628.0 feet. SSE1 and SSE2 weir depths were out of criteria October 27 and 31. Out of criteria

readings are likely related to the challenges in maintaining channel velocity criteria and channel/tailrace head differentials at the south shore at current tailrace and operating conditions.

Auxiliary Water Supply System:

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

Comments: None.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Average Coverage: 51.8 yd ²
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
	X		Any debris seen in gatewells (% coverage)	
	X		Any oil seen in gatewells?	

Comments: None.

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: Repairs to minor damage to gatewell slot 3A VBS were completed at 0913 hours November 1 while unit 3 was out of service for annual maintenance and digital governor upgrade.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

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

Comments: Primary dewaterer floor screen brushes, side screen brushes, and the pneumatic screen cleaners are being operated in manual mode by powerhouse operators due to mechanical and programming issues with the new system. Overflow weirs in groups A, B, and C remain in auto; weir group D continues to be operated in manual to achieve optimal flow from the PDW to the transport flume. Problems are being investigated and troubleshooting the system for needed repairs during the winter outage is ongoing. The channel is being operated with all 14" orifices open and additional 10" orifices to maintain required flows for PDS hydrological measurements/testing.

Collection Facility: Operations was changed to primary bypass mode at 0702 hours October 31. The juvenile collection facility was dewatered and winterized November 1.

Transport Summary: The last truck transport trip for the season occurred October 31.

Spill/Spillway Weir: No spill is occurring.

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
22.6	17.6	0	0	55.3	54.1	5.0+	5.0+

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: Unit cooling water strainers were inspected October 31. There were 2 unidentifiable fish mortalities.

Invasive Species: No mussels were present on the October 16 inspection. During the reporting period 9 Siberian prawns were euthanized and 9 Siberian prawn mortalities were collected in the condition sample.

Siberian Prawn:

Date	10/26/2018	10/27/2018	10/28/2018	10/29/2018	10/30/2018	10/31/2018	---
Euthanized	2	1	2	2	1	1	---
Dead	3	1	4	1	0	0	---

Avian Activity: Biologist daily piscivorous bird counts at Lower Granite Dam.

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
10/26/2018	1400	1	24	0	0
10/27/2018	1205	80	22	0	0
10/28/2018	1415	3	33	0	0
10/29/2018	---	---	---	---	---
10/30/2018	1515	13	22	0	0
10/31/2018	1327	14	13	0	0
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Gas Bubble Trauma (GBT) Monitoring: N/A.

Adult Fish Trap Operations: The adult trap is operating seven days a week with a 20% sample rate. Chinook brood stock collection concluded October 30 at 1400 hours. Coho brood stock collection continues.

Fish Rescue/Salvage: N/A

Research: N/A