

**U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#38-2018**

Project: McNary

Biologist: Bobby Johnson and Denise Griffith

Dates: November 16 to 22, 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

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

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
6	10/01	0740	12/13	NA	Nine year overhaul.
2	11/18	1244	11/19	1100	ESBS brush failure on screen in 2B slot.

Comments: Units were operated outside the soft one percent constraint at BPA's request as needed.

Adult Fish Passage Facilities

McNary fisheries biologists performed adult fishways measured inspections on November 17, 18 and 21.

Fish Ladder Exits:

Yes	No	Location	Criteria	Comments
	X	Oregon Exit	Head over weir 1.0' to 1.3'	1.5' on Nov 21.
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 minimal to very light (woody material) near the Oregon ladder exit and minimal (aquatic vegetation) near the Washington ladder exit. Trash racks were cleaned by the general maintenance staff as needed.

On November 21, the out of criterion point reported above was due to a tilting weir issue, which was immediately resolved. There are no problems to report at 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'	
X			NFEW3 Weir Depth	≥ 8.0'	
X			South Oregon Entrance Head Differential	1.0' – 2.0'	
X			SFEW1 Weir Depth	≥ 8.0'	
X			SFEW2 Weir Depth	≥ 8.0'	
X			Oregon Collection Channel Velocities	1.5 to 4.0 fps	Averaged 2.1 fps.
X			Washington Entrance Head Differential	1.0' – 2.0'	
X			WFE2 Weir Depth	≥ 8.0'	
X			WFE3 Weir Depth	≥ 8.0'	

Comments: There are no problems to report.

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			Oregon Ladder Fish Pump 1, Blade angle: 22.
X			Oregon Ladder Fish Pump 2, Blade angle: 20 to 21.
X			Oregon Ladder Fish Pump 3, Blade angle: 22.
X			OR North Powerhouse Pool supply from juvenile fishway.

Comments: There are no problems to report.

Juvenile Fish Passage Facility

Maintenance at the juvenile passage 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 most of the debris along the Oregon shoreline has moved to the powerhouse. The 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 unit 1, 3A, 3C and 4A slots remained in timer mode. On November 16, the brush on the screen in 1A slot was noted not fully completing a cycle. The operators reset the brush cycle, which resolved the issue.

On November 16, the brush on the screen in 2B slot was noted not fully completing a cycle. The operator reset the brush cycle. On November 18, the brush was again noted not to be completing a full cycle. The operator switch the brush cycle from automatic to timer mode. However, the cycle failed, resulting in the brush being stalled at the top of the screen. Unit 2 was removed from service. On November 19, the electrical staff appeared to have resolved the issue with the brush cycle and the unit returned to service. However, since then, the brush cycle does not consistently complete and has been in and out of timer mode. On November 20, the electrical staff examined the issue and will continue to work on the problem until it is fully resolved.

On November 20, no ESBSs were inspected as the primary camera failed. With the backup camera also out of service, no future camera inspections will occur this season.

VBS differential monitoring occurred daily. No high differentials were measured. On November 19 and 21, a total of six 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. Orifice valve operators with air and oil leaks were repaired as needed this week.

On November 18, the biologist noted the drive sprocket for the side screen cleaning brush appeared to have slightly slipped in the direction of coming off. The brush cycle sequence was increased from every two to every four hours in order to minimize the possibility of the sprocket coming off. The next day, the fisheries mechanics removed the sprocket, installed new set screws and reinstalled the sprocket in the proper position.

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, which continues.

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
140.6	119.7	0.0	0.0	52.0	49.0	6.0	6.0

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

Other

Inline Cooling Water Strainers: The next cooling water strainer examinations will occur on December 4.

Avian Activity: Casual avian observations were made during other inspections. No terns were noted on project. Gull and cormorant numbers appeared to fluctuate with the juvenile shad outmigration. Gulls and cormorants were feeding in the powerhouse flow and at the outfall. Both species were roosting on structures around the tailwater area. Gulls were also roosting on the outfall pipe.

A gull flock, gull or cormorant was occasionally noted in the forebay area. Also, two pelicans were observed in the forebay zone this week.

A large gull flocks and a few cormorants were noted roosting around the project outside the observation zones and areas near both boat docks were used. Two bald eagles were also observed.

With the sprinkler system out of service at the juvenile bypass outfall, the fisheries staff is considering the installation of a green light laser for next season.

Invasive Species: The next mussel station examinations will occur on November 24.

Fish Rescue/Salvage: None occurred.

Research: None occurred.

Project: Ice Harbor

Biologist: Ken Fone/Charlie Dennis (Fish Maintenance)

Dates: November 16 – November 22, 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

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
3	11/7/18	0753	---	---	Runner replacement
1	11/16/18	1152	11/16/18	1549	Clean cooler

Comments: None.

Adult Fish Passage Facility

Ice Harbor fish facility staff inspected the adult fishways on November 19, 20, and 21.

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	7.7'
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'	0.3'
		X	North Shore Entrance (NEW-1) Weir Depth	\geq 8.0' or on sill	
	X		North Shore Channel/Tailwater Differential	1.0' – 2.0'	2.3'

Comments: The SFE-1 weir depth was out of criteria on the November 19 inspection and the NEW-1 channel/tailwater differential was above criteria on the November 20 inspection. These out-of-criteria points were probably due to the tailwater transducers needing to be calibrated with the visual readings, and were reported to the electricians. The NFE-2 channel/tailwater differential was far below criteria on the November 20 inspection. This

was most likely a result of observer error from trying to read dirty/damaged staff gauge(s). A tape measure will be used as needed to obtain more accurate readings until the staff gauges are cleaned/replaced.

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)	60 square yard
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 to 1%
X			Any oil seen in gatewells?	3C gatewell and head gate slots

Comments: A light oil sheen was first observed in 3C gatewell and head gate slots on November 7. Project maintenance staff believe that the sheen is residual oil off of the intake gate hydraulic cylinder rod. The oil sheen was documented and reported to the proper authorities. Oil absorbing socks were deployed in the slot on November 19.

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?	20-21
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: Orifice 1BN light was found to be not working, with the light fixture hanging loose, on November 8. Orifice 1BS was opened in place of 1BN. A trouble report was created on November 19 to repair the light.

Unit 3 orifices were closed on November 9 for STS removal and remains closed under the safe clearance for the unit, until 3A and 3B orifices were opened on November 21. The maintenance bulkhead was placed in slot 3C, and the slot will be unwatered, to reduce leakage into unit 3.

The pump intake for the bird abatement hydro-cannon was cleaned of leaves on November 19. The amount of spray shooting out from the hydro-cannon has also been reduced due to a leak from the water line for the hydro-cannon.

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
23.1	15.2	0	0	54	49	8.0	8.0

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Monthly inspections for lamprey ended in June and will start up again in December. Unit 1, 5, and 6 strainers were cleaned on November 16, 19, and 21, because of juvenile shad plugging up the strainers. A total of approximately 15,750 dead juvenile shad were removed.

Avian Activity: There were large numbers of gulls, pelicans, cormorants, mergansers, and grebes observed around the project. Most of the gulls, pelicans, cormorants, and mergansers were observed foraging downstream of the powerhouse and the grebes were observed foraging in the forebay.

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: None.

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

Project: Lower Monumental

Biologists: Chuck Barnes and Raymond Addis

Dates: November 16 - 22, 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 Monumental Unit Outages (OOS) and Return to Service (RTS)

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
Unit 1	12/10/14		12/13/18	ERTS	Rehabilitation Overhaul
Unit 4	9/19/18	1600	12/28/18	ERTS	Inspection of Oil Governor System/Blade Seal Replacement
Unit 5	11/21/18	1202	11/26/18	ERTS	Evaluate Oil Seals
Unit 6	11/21/18	1202	11/26/18	ERTS	Evaluate Oil Seals

Comments: Units went into Hard Constraint at 0001 on April 1.

Adult Fish Passage Facility

The adult fishways were inspected by Corps biologists on November 19, 20 and 21.

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	≥ 8.0' or on sill	
X			North Shore Entrance (NSE-2) Weir Depth	≥ 8.0' or on sill	
X			North Shore Channel/Tailwater Differential	1.0'–2.0'	
		X	South Powerhouse Entrance (SPE-1) Weir Depth	≥ 8.0' or on sill	
		X	South Powerhouse Entrance (SPE-2) Weir Depth	≥ 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	≥ 8.0'	
X			South Shore Entrance (SSE-2) Weir Depth	≥ 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 7.4, 7.5 and 7.0 feet respectively.

South Powerhouse Entrance (SPE-2) was at sill during all inspections with readings of 7.4, 7.5 and 7.0 feet respectively.

South Shore Entrance (SSE-1) was at sill during the November 21 inspections with readings of 7.9 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)	333 sq yd average
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 - 30%
	X		Any oil seen in gatewells?	

Comments: None.

STs/VBSs:

Yes	No	NA	Item
X			STs deployed in all slots and in service?
	X		STs in continuous-run mode (Note: if not, then STs are in cycle-run mode)?
	X		STs inspected this week?
		X	STs 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
22.4	15.2	0	0	49.5	49.0	6.7	5.9

*Scroll case temperatures.

Other

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

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

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: No fish rescue during this reporting period.

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

Project: Little Goose

Biologists: Scott St. John and Richard Weis

Dates: November 16 - November 22, 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

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.

Comments: None.

Adult Fish Passage Facility

Little Goose fish facility inspected the adult fishway on November 19, 20 and 21.

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	5.8
X			North Shore Channel/Tailwater Differential	1.0'–2.0'	
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: Adult fishway control system is currently operating in manual mode. Water depth over weir at North Shore Entrance 2 was measured at 5.8 feet on November 21. Adjustments were made 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: Gatewell drawdowns were measured on November 21 on Unit 1 and were in criteria. There is currently 10 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 November 21 on Unit 1 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: Collection for transportation ended at 07:00 on November 01.

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
21.9	15.4	0.0	0.0	50.6	49.7	5.6	4.9

*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 ended on October 31 per the Fish Passage Plan requirement at Little Goose Dam.

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

Siberian Prawn: Juvenile Fish Facility is currently in primary bypass and not sampling.

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: November 16 – November 22, 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

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

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
1	Nov 13	0732			Thrust Bearing Electrical Isolation
4	Nov 07	0700			Annual maintenance and digital governor upgrade

Comments: Unit are being operated in the soft constraint of 1% efficiency.

Adult Fish Passage Facility

Lower Granite and Anchor QEA staff inspected the adult fishway November 19, 20, and 21.

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'	
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	OOS
	X		North Shore Channel/Tailwater Differential	1.0'–2.0'	0.8, 0.7, 0.9
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: North shore channel/tailwater head differential was out of criteria November 19, 20, and 21. The out of criteria readings were likely due AWS pump 1 not being able to be ran in fast mode. At current tailwater levels AWS pump 1 trips offline when placed in fast mode.

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 of 151 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: ESBS's were removed November 13-15.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

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

Comments: The juvenile bypass system was dewatered at 1155 hours November 15 as coordinated for system upgrades.

Collection Facility: N/A.

Transport Summary: N/A

Spill/Spillway Weir: N/A.

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
21.2	15.1	0	0	46.6	45.2	5.0 ⁺	5.0 ⁺

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: N/A.

Invasive Species: No mussels were present on the November 12 inspection.

Siberian Prawn: N/A

Avian Activity: Biologist daily piscivorous bird counts at Lower Granite Dam ended October 31.

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

Adult Fish Trap Operations: The adult trap ended sampling for the season November 18 at 1400 hours. Coho broodstock collection for NPT ended November 18 at 1045 hours.

Fish Rescue/Salvage: N/A

Research: N/A