

**U.S. ARMY CORPS OF ENGINEERS  
WALLA WALLA DISTRICT  
FISH FACILITIES WEEKLY REPORT  
#36-2018**

**Project: McNary**

Biologist: Bobby Johnson and Denise Griffith

Dates: November 2 to 8, 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	12/04	NA	Nine year overhaul.
3, 4 & 5	11/06	0955	11/06	1055	Rotated outages for ESBS camera inspections.

Comments: On November 8, units were operated outside the soft one percent constraint at BPA's request.

**Adult Fish Passage Facilities**

McNary fisheries biologists performed adult fishways measured inspections on November 2, 4 and 7.

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 minimal to light (woody material) near the Oregon ladder exit and minimal to very light (aquatic vegetation) near the Washington ladder exit. Trash racks were cleaned by the general maintenance staff as needed.

At the Oregon exit, on November 5, from 0954 to 1109 hours, the exit weirs were in manual control to allow cleaning of the three exit sensors still wells. During the operation, there was no significant change in forebay elevation. After the still wells were cleaned, all three sensor readings changed 0.1 to 0.2 feet. Also, flow through the exit area was slightly high and the weirs set points were adjusted. This cleaning operation was performed because slightly excessive changes in the head over weir reading had been noted over the past month.

Also, at the Oregon exit, a regulating weir alarm came in and was reset on November 7.

No problems occurred at the Washington 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 1.7 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		X	Oregon Ladder Fish Pump 1, Blade angle: 20 to 23, OOS.
X			Oregon Ladder Fish Pump 2, Blade angle: 22 to 23.
X			Oregon Ladder Fish Pump 3, Blade angle: 23.
X			OR North Powerhouse Pool supply from juvenile fishway.

Comments: On November 7, from 1220 to 1419 hours, fish pump 1 was out of service for farval maintenance. During the outage, the other two fish pumps were operated with an increased blade angle.

**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. 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. On November 4, the biologist noted the brushes on the ESBSs in unit 4 were not cycling in automatic mode. The operators were able to manually run the ESBS brushes overnight until the electrical staff was able to resolve the issue the next day.

On November 6, ESBSs were inspected in units 3 through 5 with no problems found.

VBS differential monitoring occurred daily. No high differentials were measured. From November 6 to 8, six screens were cleaned. Also, the screen in 10C slot was examined, which includes cleaning. No fish mortalities were noted during the cleanings or the inspection.

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.

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. Parts have been ordered so rehabilitation of the separator upwell supply valves operators can continue.

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
136.5	94.4	0.0	0.0	58.0	56.0	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. No pelicans or terns were noted this week on project. A pair of bald eagles were observed in the tailwater area. 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.

A gull flock, grebe or cormorant was occasionally noted in the forebay area. Grebes were not observed elsewhere.

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: On November 7, the University of Idaho concluded data collection for this year with some equipment being removed and stored for next season, when the adult lamprey passage telemetry study will resume.

**Project: Ice Harbor**

Biologist: Ken Fone

Dates: November 2 – November 8, 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	11/5/18	0714	11/5/18	1749	Install equipment for pre-disassembly testing
3	11/7/18	0753	---	---	Runner replacement

Comments: None.

**Adult Fish Passage Facility**

Ice Harbor fish facility staff inspected the adult fishways on November 5, 6, and 7.

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'	
X			North Shore Entrance (NEW-1) Weir Depth	$\geq$ 8.0' or on sill	
	X		North Shore Channel/Tailwater Differential	1.0' – 2.0'	0.7'

Comments: The powerhouse operator was informed that the SSE-1 weir depth was slightly out of criteria on the November 6 inspection. The NEW-1 channel/tailwater differential was below criteria on November 7. This may have resulted from observer error in obtaining the visual reading.

Auxiliary Water Supply (AWS) System:

<b>Operating Satisfactory</b>	<b>Standby</b>	<b>Out of Service</b>	<b>Auxiliary Water Supply System (AWS)</b>
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:

<b>Yes</b>	<b>No</b>	<b>NA</b>	<b>Item</b>	<b>Comments</b>
X			Forebay debris load acceptable? (amount)	40 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?	3C gatewell and head gate slots

Comments: A light oil sheen was 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. Oil absorbing socks were deployed in the slot. The oil sheen was documented and reported to the proper authorities.

STSS/VBSs:

<b>Yes</b>	<b>No</b>	<b>NA</b>	<b>Item</b>
	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:

<b>Yes</b>	<b>No</b>	<b>NA</b>	<b>Item</b>	<b>Number open and in service</b>
X			Orifices operating satisfactory?	20
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
31.4	15.9	0	0	57	55	9.0	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. Unit 1, 3, 5, and/or 6 strainers were cleaned on November 5, 6, and 8 because of juvenile shad plugging up the strainers. A total of approximately 6,160 dead juvenile shad were removed.

Avian Activity: There were a large number of gulls and moderate amounts of cormorants and grebes observed around the project. Most of the gulls and cormorants were observed foraging downstream of the powerhouse and the grebes were observed foraging in the forebay. On November 8, a grebe in gateway slot 1A had to be directed with a long-handled net through the orifice into the juvenile fish channel, and out through the bypass pipe.

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: Unit 4 scroll case was unwatered on November 5. Twenty juvenile white sturgeon and 2 channel catfish were recovered and released into the forebay in overall good condition.

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

**Project: Lower Monumental**

Biologists: Chuck Barnes and Raymond Addis

Dates: November 2 - 8, 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	12/10/2014		11/20/2018	ERTS	Rehabilitation Overhaul
Unit 2	11/6/2018	0655	11/6/2018	1355	STS Inspection and Hub Tapping
Unit 3	11/7/2018	1400	11/7/2018	1530	STS Inspection
Unit 4	9/19/2018	1600	12/28/18	ERTS	Inspection of Oil Governor System/Blade Seal Replacement
Unit 5	11/7/2018	1041	11/7/2018	1335	STS Inspection
Unit 6	11/7/2018	0701	11/7/2018	1036	STS Inspection

Comments: Units went into Hard Constraint at 0001 on April 1 and soft constraint 0001 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		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 7.0, 7.0 and 7.2 feet respectively.

South Powerhouse Entrance (SPE-2) was at sill during all inspections with readings of 7.0, 7.0 and 7.2 feet respectively.

South Shore Entrance (SSE-1) was at sill during all inspections with readings of 7.7, 8.1 and 8.2 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)	50 sq yd average
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 - 25%
	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: STSS'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
30.0	14.6	0	0	55.0	54.0	5.8	4.9

\*Scroll case temperatures.

**Other**

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

Avian Activity: Observation of piscivorous birds during fish ladder inspections ended on October 1.

Comments: 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: 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 02 - November 08, 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

**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	06/1/20	17:00	Spider and upper guide bearing repair.
3	10/23/18	07:04	11/13/18	17:00	Unit Annual

Comments: None.

**Adult Fish Passage Facility**

Little Goose fish facility and Anchor QEA staff inspected the adult fishway on November 04, 05 and 08.

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'	
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: Adult fishway control system is currently operating in manual mode. 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 October 31 on units 1 and 2 and were in criteria. There is currently 65 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: 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
29.8	17.5	0.0	0.0	55.9	53.8	6.0	5.1

\*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/Steve Lee

**Dates: November 2 – November 8, 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	
3	Oct 1	0700	Nov 08	1130	Annual Maintenance and Digital Governor Upgrade
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 2, 3, 5, 6 and 8.

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
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	6.5
			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, SSE2, NSE-1 weir depths were out of criteria November 5. Out of criteria reading were likely due to north shore tailwater sensor failing to detect changes in elevation. North shore tailwater

elevation sensor was reset November 5 and again November 6 due to a 0.5 feet discrepancy between the fish ladder control system and the physical reading.

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: 30.6 yd <sup>2</sup>
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0-2%
	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: The VBS in gatewell slot 4B is being repaired while the unit is 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?	17
	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.

Collection Facility: The facility is operating in primary bypass mode.

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
30.4	22.4	0	0	54.3	52.9	5.0 <sup>+</sup>	5.0 <sup>+</sup>

\*Cooling water intake temperature.

### Other

Inline Cooling Water Strainers: N/A

Invasive Species: N/A

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 is operating seven days a week with a 20% sample rate. Coho brood stock collection continues.

Fish Rescue/Salvage: N/A

Research: N/A