U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#02-2021
March 5-11, 2021

Project: McNary
Biologists: Bobby Johnson and Denise Griffith

Turbine Operation

Yes	No	Turbine Unit Status		
	X	All 14 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

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

	OOS		**RTS**		
Unit(s)	**Date**	**Time**	**Date**	**Time**	**Outage Description**
5	12/7	0643	04/30	N/A	Thrust bearing upgrades/blade seals.
9	03/10	0700	03/10	1318	Headgate inspections.

Comments: The soft one percent peak efficiency constraint continues. Unit priority is being followed per the Fish Passage Plan (FPP). RTS dates are subject to change.

Adult Fish Passage Facilities

McNary fisheries biologists performed measured inspections of the adult fishways on March 7, 9 and 11. Picketed leads will be lowered, and fish counting will resume on March 31 and April 1, respectively.

Fish Ladder Exits:

Yes	No	Location	Criteria	Measurements
X		Oregon Exit	Head over weir 1.0’ to 1.3’	1.1’ to 1.2’
X		Oregon Count Station Differential	0.0’ to 0.5’	0.0’
X		Washington Exit	Head over weir 1.0’ to 1.3’	1.1’ to 1.2’
X		Washington Count Station Differential	0.0’ to 0.5’	0.1’

Comments: Debris loads were very light to light near the Oregon exit and minimal near the Washington exit. Some debris has been moving from the powerhouse to the Oregon shoreline and back.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			North Oregon Entrance Head Differential	1.0' – 2.0'	1.1' to 1.2'
X			NFEW2 Weir Depth	≥ 8.0'	8.0' to 8.2'
X			NFEW3 Weir Depth	≥ 8.0'	8.1' to 8.2'
X			South Oregon Entrance Head Differential	1.0' – 2.0'	1.6' to 1.7'
X			SFEW1 Weir Depth	≥ 8.0'	8.1' to 8.3'
X			SFEW2 Weir Depth	≥ 8.0'	8.1' to 8.2'
X			Oregon Collection Channel Velocities	1.5 to 4.0 fps	Averaged 1.7 fps.
X			Washington Entrance Head Differential	1.0' – 2.0'	1.3'
X			WFE2 Weir Depth	≥ 8.0'	9.6' to 9.8'
X			WFE3 Weir Depth	≥ 8.0'	9.6' to 9.8'

Comments: There is nothing to report.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Fish Pump Blade Angle	Auxiliary Water Supply System (AWS)
Yes				WA shore Wasco County PUD Turbine Unit
	Yes			WA shore Wasco PUD Bypass
Yes			23°	Oregon Ladder Fish Pump 1
Yes			22° to 23°	Oregon Ladder Fish Pump 2
Yes			22°	Oregon Ladder Fish Pump 3
		Yes		OR North Powerhouse Pool supply from juvenile fishway

Comments: The juvenile system remains in emergency bypass, which does not supply flow to the Oregon ladder north powerhouse pool.

Juvenile Fish Passage Facility

For the top spillway weir (TSW) overshoot study, the juvenile system remains in emergency bypass. Early start up will not occur this year due to the facility separator needing new floor screens and the rectangular screen brush in the channel requiring a new drive clutch. The floor screens arrived on March 8 and installation, which will take about a week, began on March 11. The drive clutch also arrived on March 8. However, it was missing a key slot. A replacement clutch is currently scheduled to arrive on April 12 to 16. This will delay normal sampling season, which usually begins on April 2. The system cannot be switched into primary bypass until the rectangular brush is functional.

Forebay Debris/Gatewell Debris/Oil:

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

Comments: Debris loads were moderate near the powerhouse and minimal beside the spillway. New debris loads were minimal. The debris consisted mostly of woody material.

No trash rack cleaning or forebay debris removal occurred this week. All trash racks are scheduled to be cleaned March 22 to 25.

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's are installed in units 1, 10, 13 and 14. ESBS maintenance continued this week. Camera inspections will resume in late March.

Daily VBS differential monitoring revealed no issues.

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

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

Comments: Emergency bypass continues.

Due to the rectangular screen brush requiring a drive clutch replacement, the remaining channel systems continue to be out of service. Once this issue is resolved, the system could be switched to primary bypass.

A total of three live juvenile lampreys were removed from the rectangular incline screen this week. It is assumed the lampreys passed around the stop logs by way of leakage.

Adult jump deterrent netting along the handrails was inspected and repaired this week.

Bypass Facility:

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

Comments: All bypass facility systems remain out of service.

The separator rehabilitation will be completed when the floor screens are installed. Secondary bypass and sample collection cannot resume until this installation and the rectangular screen brush repairs are completed. Installation of the air burst system, which will be under the floor screen in the A side of the separator, was completed this week.

Top Spillway Weir (TSW) Operations: The TSW in bay 19 remains closed. The TSW in bay 20 is being used for the adult steelhead TSW passage efficiency study and as required by the Biological Opinion. The TSW will be opened per the study plan.

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
128.4	102.9	1.6	0.0	42.0	41.0	6.0	5.5

Comments: The above data comes from the control room. The data day is 0000 to 0000 hours. The spill recorded is due to the TSW study. Repairs to crane 6 are continuing.

Other

Inline Cooling Water Strainers: The next cooling water strainer inspections will occur on April 6.

Avian Activity: Casual avian observations continued. Avian counts will begin April 1.

Currently, there are no hazing efforts occurring. No terns or grebes were observed on project. Ten to thirty cormorants were noted roosting on the juvenile bypass outfall and occasionally feeding around the project. An occasional pelican was noted feeding in the tailwater area. Finally, a loon and a few gulls were noted occasionally in and around the forebay area.

Invasive Species: Mussel station examinations will resume in late March.

Siberian Prawn: Removing and euthanizing Siberian prawns will resume with sampling.

Fish Rescue/Salvage: For this week, no fish were found during the navigation lock dewatering.

Research: The spring phase of the Pacific Northwest National Laboratory (PNNL) adult steelhead TSW passage efficiency study continues.

Project: Ice Harbor
Fisheries Tech: Tim DeKoster
Fisheries Biologist: Ken Fone

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

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

	OOS		RTS		
Unit	**Date**	**Time**	**Date**	**Time**	**Outage Description**
3	5/3/19	0641	---	---	Turbine runner replacement and stator rewind

Comments: None.

Adult Fish Passage Facility

Ice Harbor fish facility staff inspected the adult fishways on March 10th and 11th.

Fish Ladders:

Yes	No	Location	Criteria	Measurements
x		North Ladder Exit Differential	Head ≤ 0.3’	
x		North Ladder Picketed Lead Differential	Head ≤ 0.3’	
x		North Ladder Depth over Weirs	Head over weir 1.0’ to 1.3’	
x		South Ladder Exit Differential	Head ≤ 0.3’	
x		South Ladder Picketed Lead Differential	Head ≤ 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	≥ 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	1.3ft/s
x			North Powerhouse Entrance (NFE-2) Weir Depth	≥ 8.0’ or on sill	
x			North Powerhouse Entrance Channel/Tailwater Differential	1.0’ – 2.0’	
x			North Shore Entrance (NEW-1) Weir Depth	≥ 8.0’ or on sill	
x			North Shore Channel/Tailwater Differential	1.0’ – 2.0’	

Comments:

The Ice Harbor Fisheries crew was on standby to conduct fish rescues during the beginning of the navigational lock outage. Therefore, only two fishway inspections were conducted during last week.

Auxiliary Water Supply (AWS) System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
5 pumps	2 pumps	1 pump	Status of the 8 south shore AWS pumps
2 pumps	1 pump		Status of the 3 north shore AWS pumps

Comments: South shore AWS pump #8 is out of service to replace worn seals in the lower gearbox.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
x			Forebay debris load acceptable? (amount)	Average of 55 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.

Submersible Traveling Screens (STSs) / Vertical Barrier Screens (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 dewatered for annual maintenance. Five water-regulating weirs in the juvenile fish channel were replaced with newly fabricated weirs during the winter maintenance period. This completes the replacement of all the original weirs, which were deteriorated at the operating stem connection brackets from electrolysis.

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

Fish Sampling: Sampling begins on April 1.

Removable Spillway Weir (RSW): Voluntary spill through the RSW is periodically occurring for the downstream passage of adult steelhead that may have strayed into the Snake River. The RSW will be operated from 0500 hours to 0900 hours on Sundays, Wednesdays, and Fridays, from March 1 to March 31.

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
45.5	37.2	1.6	0	41	39	7.0	5.0

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Unit 1, 2, 4, 5, and 6 turbine cooling water strainer inspections took place on March 4. A total of approximately fifty-five dead juvenile lamprey were recovered.

Avian Activity: There were very few piscivorous birds seen around the project.

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 the fish sampling contractor, frozen and properly disposed of in a landfill.

Fish Rescue/Salvage: On March 9, 2020, during Ice Harbor Projects navigational lock maintenance outage, fish were rescued/salvaged from the dewatered south culvert in the navigational lock. Two juvenile Chinook, one Steelhead clipped (11”), and one Walleye (12”) were collected and released into the forebay at the upstream guide wall in good condition. Water temperature had a difference of 1.4 F^{o} between the bucket of water (water from the culvert) and the forebay water temperature.

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

Project: Lower Monumental
Biologists: Chuck Barnes and Raymond Addis

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

	OOS		RTS		
Unit	**Date**	**Time**	**Date**	**Time**	**Outage Description**
Unit 2	7/15/2019	0720	4/01/2021	ERTS	Annual, Draft Tube Liner

Comments:

Adult Fish Passage Facility

The adult fishways were inspected by Corps biologists on March 8, 9 and 10.

Fish Ladder:

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

Comments:

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			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) Weir was on sill during all inspections with readings of 7.4, 7.6 and 7.7 feet respectively. South Powerhouse Entrance (SPE-2) Weir was on sill during all inspections with readings of 7.4, 7.6 and 7.7 feet respectively.

Auxiliary Water Supply System:

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

Comments: Fish pumps returned to service at 1200 hours on February 25 after winter maintenance was completed.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	1162 yds^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:

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 for the 2021 season.

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: Orifices are closed and Primary Dewaterer is OOS for winter maintenance.

Collection Facility: Fish collection is scheduled to begin on April 1.

Transport Summary: No transport currently.

Spillway Weir: Per 2021 Fish Operations Plan, limited spill through the RSW for adult steelhead passage began on March 1 and will end on March 31. RSW is scheduled to open for juvenile salmonid passage 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
45.1	39.2	1.5	0.0	39.9	38.9	5.8	5.2

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers:

Avian Activity: Highest counts of foraging piscivorous birds in tailrace (SWT1+PH1+PH2) at Lower Monumental Dam.

Date	Time	Gulls	Cormorants	Terns	Grebes	Pelicans
March 5 – 11		0	0	0	0	0

* Table shows tailrace observation conducted during Adult Fish Ladder inspections.

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

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

Research: No research is occurring currently.

Project: Little Goose
Biologist: Scott St. John

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)

	OOS		RTS		
Unit	**Date**	**Time**	**Date**	**Time**	**Outage Description**
5	04/14/17	14:11	03/31/2021	17:00	Spider and upper guide bearing repair.
1	11/30/20	08:00			6-year overhaul
2	03/06/21	18:30	03/06/21	19:00	86GX trip due to exciter thyristor high temp.

Comments: None.

Adult Fish Passage Facility

Little Goose fish facility staff inspected the adult Fishway on March 8, 10 and 11.

Fish Ladder:

Yes	No	NA	Location	Criteria	Measurements
X			Fish Ladder Exit Differential	Head ≤ 0.5’	
X			Fish Ladder Picketed Lead Differential	Head ≤ 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		

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			South Shore Entrance (SSE-1) Weir Depth	≥ 8.0’	
X			South Shore Entrance (SSE-2) Weir Depth	≥ 8.0’	
X			South Shore Channel/Tailwater Differential	1.0’ – 2.0’	
		X	North Powerhouse Entrance (NPE-1) Weir Depth	≥ 7.0’ or on sill	
		X	North Powerhouse Entrance (NPE-2) Weir Depth	≥ 7.0’ or on sill	
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	
	X		North Shore Entrance (NSE-1) Weir Depth	≥ 6.0’ or on sill	5.8, 5.8
	X		North Shore Entrance (NSE-2) Weir Depth	≥ 6.0’ or on sill	5.8, 5.8
	X		North Shore Channel/Tailwater Differential	1.0’–2.0’	0.9
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: The adult fishway was returned to service on February 10, with AWS pumps 1 and 2 returning to service on February 23. The NSE channel/tailwater differential was found out of criteria on March 8. The NSE weir depth was found out of criteria on the March 10 and 11.

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: Fish pumps 1 and 2 were returned to service on February 23. Fish pump 3 remains out of service as staff await parts.

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 approximately 64,000 square feet of floating woody debris currently inside the trash shear boom in the forebay. Little Goose plans to conduct operations in hopes of removing forebay debris through the ASW (MOC 21 LGS 01).

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: ESBS's are scheduled to be installed the week of March 22.

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 bypass system is currently dewatered for winter maintenance.

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

Transport Summary: Fish transportation is scheduled to begin in April.

Spillway Weir: Little Goose began operation of the adjustable spillway weir (ASW) on March 2 to facilitate passage of adult steelhead overshoots. Operation is occurring three days each week on non-consecutive days for four hours in the morning and will continue to occur on Tuesday, Thursday and Sunday each week, through March 31. Spring spill operations will begin on April 3. Little Goose experienced issues with the ASW encoder on the

first day of spill and operation of the ASW occurred from 08:10 through 12:10. Little Goose staff are still working to resolve issues with the ASW, but remain able to meet overshoot spill requirements.

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
43.1	37.8	1.2	0.0	42.6	41.2	5.1	4.1

*Ladder temperature.

Other

Inline Cooling Water Strainers: Inline cooling strainer inspections commenced on January 13. Inspections will continue in accordance to the Fish Passage Plan (FPP) and results will be submitted to the District.

Avian Activity: Daily piscivorous bird counts at Little Goose Dam will begin on April 1 with hazing beginning on March 29.

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

Siberian Prawn: Juvenile fish collection begins on April 1. 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.

Gas Bubble Trauma (GBT): GBT monitoring is not being conducted at this time.

Fish Rescue/Salvage: Multiple fish rescues occurred this report period to support the annual navigation lock outage.

A fish rescue was conducted in a navigation lock fill valve on March 5. Fish rescued included 1 clipped adult steelhead, 1 unclipped adult steelhead and 10 unclipped juvenile Chinook salmon.

Another fish rescue was conducted in a navigation lock fill valve on March 10. Fish rescued included 1 unclipped juvenile Chinook salmon.

The final fish rescue during this report period occurred on March 11 in a navigation lock drain valve. Fish rescued included 8 peamouth, 7 sculpin and 14 crayfish. Siberian prawns were observed in all fish rescues.

Research: No research activities occurred during this report period.

Project: Lower Granite
Biologists: Elizabeth Holdren and David Miller

Turbine Operation

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

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

	OOS		RTS		
Unit	**Date**	**Time**	**Date**	**Time**	**Outage Description**
6	03/01				DC and low voltage switchgear
5	03/09	0700	03/09	1500	ESBS/VBS Inspection

Comments: A camera inspection was completed for unit 5 gatewell slots to determine which VBS panels to proactively replace during upcoming unit outage for the DC low voltage switchgear installation.

Adult Fish Passage Facility

Lower Granite and Anchor QEA staff inspected the adult fishway on March 5, 6, 8, 10, and 11.

Fish Ladder:

Yes	No	NA	Location	Criteria	Comments
X			Fish Ladder Exit Differential	Head ≤ 0.5’	
X			Fish Ladder Picketed Lead Differential	Head ≤ 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: Operation of diffuser 14 will remain in manual for the season due to an issue with the elevation sensor.

Fish Ladder Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Comments
X			South Shore Entrance (SSE-1) Weir Depth	≥ 8.0’	
	X		South Shore Entrance (SSE-2) Weir Depth	≥ 8.0’	7.9’
X			South Shore Channel/Tailwater Differential	1.0’ – 2.0’	
X			North Powerhouse Entrance (NPE-1) Weir Depth	≥ 8.0’ or on sill	
X			North Powerhouse Entrance (NPE-2) Weir Depth	≥ 8.0’ or on sill	
	X		North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	0.8’, 0.9’
X			North Shore Entrance (NSE-1) Weir Depth	≥ 7.0’ or on sill	
X			North Shore Entrance (NSE-2) Weir Depth	≥ 7.0’ or on sill	
	X		North Shore Channel/Tailwater Differential	1.0’–2.0’	0.6’, 0.6’, 0.6’, 0.7’, 0.9’
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: Ladder collection channel operation and configuration are being evaluated to resolve ongoing issues. FOGs 1, 4, 7, and 10 are in operation. North shore and north powerhouse channel/tailrace head differentials are unable to be maintained withing the criteria range under current operation. The project is working with hydraulic

engineers at district to improve collection channel conditions find a permanent solution to the ongoing channel/tailwater criteria discrepancies.

Auxiliary Water Supply System:

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

Comments: AWS pump 1 is being operated in slow mode.

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: Unit trash racks were raked February 8-11.

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 were installed in units February 23-25. The VBS in gatewell slot 6C is being replaced during the DC low voltage switchgear upgrade. Gatewell differentials were measured March 7.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	17-18
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: Orifices in gatewell slot 6A are closed to support VBS replacement during the low voltage switchgear upgrade.

Collection Facility: A total of 1,188 juvenile salmonids were collected March 5-11. Unclipped kokanee/sockeye comprised 91.3% of the sample. These Kokanee are likely from Dworshak released during the reservoir drawdown.

Transport Summary: No transport at this time.

Spillway Weir: The RSW is operating from 0500-0900 hours Sundays, Tuesdays, and Thursdays March 2 through March 30 to facilitate adult steelhead/overshoot passage. There were 7 adult PIT tagged steelhead detected going

over the RSW this report week and a total of 26 adult PIT tagged steelhead and 1 juvenile steelhead detected since March 2.

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
44.2	40.6	1.2	0.0	41.0	39.5	5+	4.1

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: Unit cooling strainer inspections were conducted on March 2.

Invasive Species: No zebra/quagga muscles were detected on the trap substrate. There were 3 Siberian prawns collected in the condition sample, all were euthanized.

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

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
March 5	1027	11	0	0	0
March 6	1110	0	3	0	0
March 7	0910	14	3	0	0
March 8	1510	6	3	0	0
March 9	1426	11	7	0	0
March 10	1047	3	2	0	0
March 11	1528	8	4	0	0

Gas Bubble Trauma (GBT) Monitoring: N/A

Adult Fish Trap Operations: The adult trap was watered up at 1000 hours March 1 and started sampling at 1100 hours at a 25% (18% /week) sample rate. Collection for sampling will be conducted Monday through Friday until brood stock collection starts August 18.

Fish Rescue/Salvage: N/A

Research:

Idaho Fish and Game (IDFG) Genetic Stock Identification

Fish collected as part of the Lower Granite juvenile condition sample are used to enumerate and characterize age composition and genetic stock profiles of naturally producing yearling chinook and juvenile steelhead. IDFG will sample Monday through Friday through mid-June with a goal of collecting 2,000-5,000 yearling chinook and juvenile steelhead genetic samples.

National Marine Fisheries Service (NMFS) PIT tagging of Adult Wild Chinook and Adult Steelhead for ISEMP-Related Dispersal Monitoring:

The goal of this project is to PIT tag up to 4000 unclipped adult Chinook and 4000 unclipped adult steelhead collected in the adult trap daily sample for dispersal monitoring.

Sampling of Steelhead, Chinook salmon, and Sockeye salmon by the Idaho Department of Fish and Game (IDFG) and NOAA Fisheries for Biological data collection.

Upriver migrating steelhead, spring/summer Chinook salmon, and sockeye salmon are collected from the adult trap beginning April 4 through December 15. The goal is to collect 5-20% of adult steelhead, spring/summer Chinook salmon, and sockeye salmon ascending the ladder April 4-December 15. Data collection includes fish scales, genetics tissue, sex and length, wild/hatchery composition, and non-adipose clipped hatchery fish assessment. All natural origin adult steelhead and spring/summer Chinook salmon trapped will be PIT tagged to estimate headwater tributary escapement. Sockeye salmon may be PIT tagged in the future to estimate metrics regarding conversion rates. Some steelhead and spring/summer Chinook salmon may be radio-tagged or spaghetti-tagged. This information on adult fish forms the basis for status information used in several forums including BiOp-RPA identified needs.

PIT Tagging and Genetic Sample Collection from Bull Trout for USFWS:

Bull trout will be collected as part of the normal adult trap daily sample and using the adult sort by code system to recapture previously PIT tagged fish. Untagged bull trout will be PIT tagged, fin clipped for genetic analysis, and have morphometric data collected including weight and length etc. Fin clips will be sent to USFWS to determine the fish's origin. Previously PIT tagged bull trout will only have morphometric data collected. All fish will be released back into the adult fish ladder.