Out of Criteria – NWW Weekly Report #2 – March 08-14, 2024

1. McNary

Due to the age of the ladder, one to two fish pumps being out of service, and the juvenile system being out of service, NFEW2 and NFEW3 were out of criteria all week with NFEW 3 being closed on March 10 for one fish pump operation. SFEW1 and SFEW2 were out of criteria on March 8 and 10. The lowest readings for all weirs occurred on March 10.

Yes	No	Sill	Location	Criteria	Measurements
	X		NFEW2 Weir Depth	≥ 8.0’	3.6’ to 7.3’
	X		NFEW3 Weir Depth	≥ 8.0’	6.2’ to 7.3’/Closed
	X		SFEW1 Weir Depth	≥ 8.0’	3.9’ to 8.3’
	X		SFEW2 Weir Depth	≥ 8.0’	3.8’ to 8.3’
	X		Washington Entrance Head Differential	1.0’ – 2.0’	1.5’ to 1.6’
	X		WFE3 Weir Depth	≥ 8.0’	8.4’ to 8.5’

The Oregon ladder was operating with one fish pump for approximately 28 hours (See MFR 24MCN01)

2. Ice Harbor

Units 3, 6, and 5 were operated out of unit priority ahead of unit 2 on March 14 from 1013 hours to 1042 hours to accommodate model validation testing on unit 2.

Yes	No	Sill	Location	Criteria	Measurements
	x		Central Fish Entrance Channel/Tailwater Differential	1.0’ – 2.0’	0.6’

The central fish entrance channel/tailwater differential was most likely read as low due to spill causing turbulent tailwater conditions thus causing the tailwater level to be read slightly higher than it was.

North shore AWS pump #1 has been out of service since March 1, 2023, because of a hydraulic cylinder leak on the butterfly valve. A new cylinder is being ordered.

South shore AWS Pump #6 has been out of service since March 1, 2024, due to high vibration readings coming from the motor and gearbox. The gearbox will be replaced with a refurbished one.

3. Lower Monumental

Yes	No	Sill	Location	Criteria	Measurements
	X		North Shore Entrance (NSE-1) Weir Depth	≥ 8.0’ or on sill	7.5, 7.5, 7.9
	X		North Shore Entrance (NSE-2) Weir Depth	≥ 8.0’ or on sill	7.9, 6.3, 7.5
	X		South Shore Entrance (SSE-1) Weir Depth	≥ 8.0’	7.9, 7.7
	X		South Shore Entrance (SSE-2) Weir Depth	≥ 6.0’	3.9, 6.4, 6.6

Velocity in the channel was out of criteria on March 12, with a measurement of 1.0 fps.

4. Little Goose

Yes	No	Sill	Location	Criteria	Measurements
X	X		North Powerhouse Entrance (NPE-1) Weir Depth	≥ 7.0’ or on sill	3/11 5.1, 3/12 5.7
X	X	X	North Powerhouse Entrance (NPE-2) Weir Depth	≥ 7.0’ or on sill	3/11 5.1

The NPE-1 weir is not lowering below 533.1, due to be a sensor issue.

5. Lower Granite Dam

Yes	No	Sill	Location	Criteria	Comments
			South Shore Entrance (SSE-1) Weir Depth	≥ 8.0’	
	X		South Shore Entrance (SSE-2) Weir Depth	≥ 8.0’	7.8’
	X		North Shore Entrance (NSE-1) Weir Depth	≥ 7.0’ or on sill	6.7’
	X		North Shore Entrance (NSE-2) Weir Depth	≥ 7.0’ or on sill	6.9’
	X		North Shore Channel/Tailwater Differential	1.0’–2.0’	0.8’, 0.6’

AWS pump 2 remains out of service for maintenance.

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#02-2024

Project: McNary
Biologist: Bobby Johnson and Paul Bertschinger
Dates: March 8-14, 2024

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	**Date**	**Time**	**Date**	**Time**	**Outage Description**
9 & 10	11/27/23	0631	4/26/24	NA	Control system upgrades
11 & 12	2/27/24	0630	3/15/24	NA	Governor gasket repairs

Comments: RTS dates are subject to change. Units ran outside the soft one percent criteria as needed and requested by BPA during the week.

Adult Fish Passage Facilities

McNary fisheries staff performed measured inspections of the adult fishways on March 8, 10 and 13.

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’ to 0.1’
X		Washington Exit	Head over weir 1.0’ to 1.3’	1.0’ to 1.1’
X		Washington Count Station Differential	0.0’ to 0.5’	0.0’ to 0.1’

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

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			North Oregon Entrance Head Differential	1.0’ – 2.0’	1.3’ to 1.5’
	X		NFEW2 Weir Depth	≥ 8.0’	3.6’ to 7.3’
	X		NFEW3 Weir Depth	≥ 8.0’	6.2’ to 7.3’/Closed
X			South Oregon Entrance Head Differential	1.0’ – 2.0’	1.2’ to 1.4’
	X		SFEW1 Weir Depth	≥ 8.0’	3.9’ to 8.3’
	X		SFEW2 Weir Depth	≥ 8.0’	3.8’ to 8.3’
X			Oregon Collection Channel Velocities	1.5 to 4.0 fps	1.9 fps
	X		Washington Entrance Head Differential	1.0’ – 2.0’	1.5’ to 1.6’
X			WFE2 Weir Depth	≥ 8.0’	9.7’ to 9.8’
	X		WFE3 Weir Depth	≥ 8.0’	8.4’ to 8.5’

Comments: Due to the age of the ladder, one to two fish pumps being out of service, and the juvenile system being out of service, NFEW2 and NFEW3 were out of criteria all week with NFEW 3 being closed on March 10 for one fish pump operation. SFEW1 and SFEW2 were out of criteria on March 8 and 10. The lowest readings for all weirs occurred on March 10.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Blade angle	Auxiliary Water Supply System (AWS)
X				WA shore Wasco County PUD Turbine Unit
	X			WA shore Wasco PUD Bypass
X		X	OOS/26°	Oregon Ladder Fish Pump 1
X			24° to 27°	Oregon Ladder Fish Pump 2
X		X	25°/OOS	Oregon Ladder Fish Pump 3, return to service April 12
		X		OR North Powerhouse Pool supply from juvenile fishway

Comments: After the winter outage, Oregon ladder fish pump 1 remained out of service due to an exciter issue. Fish pump 3 tripped offline due to a governor oil leak at 0738 hours on March 10. The oil was contained. The Oregon ladder was adjusted for one fish pump operation, with NFEW3 raised and both pool differentials maintained by 0819 hours. However, with pump 3 now out of service, with a return to service date of April 12, pump 1 could be returned to service earlier by using excitor parts from pump 3, which occurred on March 11, with fish pump 1 returning to service at 1124 hours. NFEW3 was lowered soon after and returned to automatic mode. The return to service date is subject to change. The blade angles on operational pumps were increased as needed. The juvenile system remains out of service and is not supply auxiliary flow to the north powerhouse pool. The Oregon ladder was operating with one fish pump for approximately 28 hours.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Minimal to moderate near the powerhouse
X			Gatewell drawdown measured this week?	Twice
X			Gatewell drawdown acceptable	
	X		Any debris seen in gatewells (% coverage)	
	X		Any oil seen in gatewells?	

Comments: The powerhouse debris moved to and from the Oregon shore with weather changes. No debris was seen at the spillway. New debris loads were minimal but slowly increasing.

Trash rack cleaning is scheduled for the week of March 18. There were no problems to report.

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

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

Comments: ESBS maintenance and screen brush programming continue. ESBS install will begin on April 2. Camera inspection will begin in early May.

VBS monitoring will begin with ESBS install.

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

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

Comments: Maintenance on all systems is near completion. Replacement of area lighting around the dewatering structure continues.

Bypass Facility:

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

Comments: Maintenance is nearing completion.

TSW Operations: The TSW in bay 20 is being used as required by the Biological Opinion for adult fallbacks per RCC schedule. The TSW in bay 19 is ready for the spring season. Both TSW's are attached to a hoist. For PNNL installation of study equipment, the TSW flow occurred from 0400 to 0800 hours on March 4 to 8 and March 11.

River Conditions

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
116.2	96.9	1.9	1.6	42.0	42.0	6.0	5.0

Comments: The flow above is due to the TSW and testing. The data is from the control room. In order to set limits for future use, bay 9, which is set for upstream split leaf, was opened from 1219 to 1243 hours on March 11.

During the winter outage, the spillway hoists and gates were set up for the upcoming season. When final determination of spill per gate is made, the pattern will appear in the Fish Operation Plan of the FPP.

Other

Inline Cooling Water Strainers: The next cooling water strainer inspections will occur on April 2.

Avian Activity: Casual bird observations began this week. Counting will begin April 1. Only cormorants were observed and that was birds roosting on the outfall pipe. No hazing is occurring currently.

Invasive Species: No issues were observed during the winter. The mussel stations will be examined in late March.

Siberian Prawn: With no sampling occurring, no prawns were observed.

Fish Rescue/Salvage**:** No fish rescue occurred this week.

Research: PNNL continued deployment of their equipment on the spillway this week. They will be doing a juvenile lamprey passage study and a smolt passage study, which relates to the new configuration of the spillway. Another contractor has begun preparations for a survival study in bays 20 and 21.

Project: Ice Harbor
Biologist: Ken Fone
Biological Science Technician: Ben McArthur
Dates: March 8 – March 14, 2024

Turbine Operation

Yes	No	Turbine Unit Status
	x	All 6 turbine units available for service (see table & comments below for details).
x		All available turbine units are operated in accordance with Appendix C of the Fish Passage Plan

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

	OOS		RTS		
Unit	**Date**	**Time**	**Date**	**Time**	**Outage Description**
1	6/27/23	0708	---	---	Turbine runner replacement and stator rewind
4	3/5/24	1739	---	---	Failed vacuum breaker valve
2	3/13/24	0831	3/13/24	1948	BPA 115 kV line #1 maintenance

Comments: Units 3, 6, and 5 were operated out of unit priority ahead of unit 2 on March 14 from 1013 hours to 1042 hours to accommodate model validation testing on unit 2.

Adult Fish Passage Facility

Ice Harbor Fish Facility staff inspected the adult fishways on March 11, 12, and 14.

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 Fish Entrance (SFE-1) Weir Depth	≥ 8.0’ or on sill	
x			South Fish Entrance Channel/Tailwater Differential	1.0’ – 2.0’	
x			South Fish Channel Velocity	1.5 – 4.0 fps	
x			Central Fish Entrance (CFE-2) Weir Depth	≥ 8.0’ or on sill	
	x		Central Fish Entrance Channel/Tailwater Differential	1.0’ – 2.0’	0.6’
x			North Fish Entrance (NFE-1) Weir Depth	≥ 8.0’ or on sill	
x			North Fish Entrance Channel/Tailwater Differential	1.0’ – 2.0’	

Comments: The central fish entrance channel/tailwater differential was most likely read as low due to spill causing turbulent tailwater conditions thus causing the tailwater level to be read slightly higher than it actually was. Also, with the central fish entrance weir depth being almost 9’ anyway, the channel/tailwater differential is expected to be on the low side with five south shore auxiliary water supply pumps running.

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: North shore AWS pump #1 has been out of service since March 1, 2023, because of a hydraulic cylinder leak on the butterfly valve. A new cylinder is being ordered.

South shore AWS Pump #6 has been out of service since March 1, 2024, due to high vibration readings coming from the motor and gearbox. The gearbox will be replaced with a refurbished one.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
x			Forebay debris load acceptable? (amount)	Average of 53 square yards
		x	Gatewell drawdown measured this week?	
		x	Gatewell drawdown acceptable	
x			Any debris seen in gatewells (% coverage)	STSs partially 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 unwatered for annual maintenance.

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

Fish Sampling: Sampling is scheduled to begin 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 was operated from 0500 hours to 0900 hours PST, seven days a week.

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
37.7	29.5	1.6	1.5	43	43	6.5	5.0

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Unit 2, 3, 4, 5, and 6 turbine cooling water strainer inspections took place on March 5. A total of 264 dead juvenile lamprey and four live juvenile lamprey were recovered.

Avian Activity: There were relatively few piscivorous birds seen around the project. Bird observation counts are scheduled to begin on April 1.

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: None.

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

Project: Lower Monumental
Biologists: Denise Griffith and Raymond Addis
Dates: March 8-14, 2024

Turbine Operation

Yes	No	Turbine Unit Status
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.

Comments: All available turbine units are operated in accordance with Appendix C of the Fish Passage Plan.

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

	OOS		RTS		
Unit	Date	Time	Date	Time	Outage Description
1	03/11	1345	03/11	1555	Trash raking
1	03/12	0703	03/12	1112	Trash raking
2	03/11	1131	03/11	1600	Trash raking
2	03/12	0656	03/12	1113	Trash raking
3	03/11	0949	03/11	1330	Trash raking
4	03/11	0705	03/11	1120	Trash raking
5	03/11	0835	03/11	0935	Trash raking

Comments: None

Adult Fish Passage Facility

Lower Monumental fish facility staff inspected the adult fishways on March 11, 12 and 13.

Fish Ladder Exit:

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: 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	7.5, 7.5, 7.9
	X		North Shore Entrance (NSE-2) Weir Depth	≥ 8.0’ or on sill	7.9, 6.3, 7.5
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’	7.9, 7.7
	X		South Shore Entrance (SSE-2) Weir Depth	≥ 6.0’	3.9, 6.4, 6.6
X			South Shore Channel/Tailwater Differential	1.0’ – 2.0’	

Comments: South Powerhouse Entrance SPE-1 weir was at sill during all inspections with readings 7.8, 7.2 and 6.7 feet respectively. South Powerhouse Entrance SPE-2 weir was at sill during all inspections with readings 7.8, 7.2 and 6.7 feet respectively. South Shore Entrance SSE-1 weir was out of criteria on March 12 and 13 inspections. South Shore Entrance SSE-2 weir was out of criteria on March 11, 12 and 13 inspections. North Shore Entrance NSE-1 was out of criteria on March 11, 12 and 13. North Shore Entrance NSE-2 was out of criteria on March 11, 12 and 13. The control room was notified of these readings and adjustments were made. Velocity in the channel was out of criteria on March 12, with a measurement of 1.0 fps. March 13 the north ladder picketed leads, the counting backboard and the counting window were cleaned.

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	Comments
X			Forebay debris load acceptable? (amount)	424 yrd^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: Trash racks were cleaned from March 11 to March 12. Unit 6 was not able to be cleaned due to construction of the new deck crane. Very little trash was found in the Units 3, 4, and 5. Units 1 and 2 contained most debris, consisting predominantly of logs and sticks. The total amount of trash removed was 15 to 20 square yards. No fish were found. On March 14 the gatewell drawdown benchmark were calculated with the unit load set to 105 MW.

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: All STSs are still currently in the raised position for winter.

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: Collection channel and primary dewatering structure are still currently dewatered for winter maintenance.

Collection Facility: The JFF is currently dewatered for winter maintenance. Permanent temperature probes were installed on the sample holding tanks on March 12. Additional transport fish flumes were sealed with silicone to prevent leakage on March 15. Additionally, on March 15, grease was added to the grease lines for the PIT slide gates.

Transport Summary: Daily barge transport is scheduled to begin on April 24.

Spillway Weir:

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
37.2	30.0	1.7	1.3	41.9	41.1	6.0	5.0

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers:

Avian Activity: Tailrace counts of foraging piscivorous birds at Lower Monumental Dam are scheduled to begin on April 1. Bird hazing by USDA personnel is schedule to begin on April 7 and end June 30 this season.

Invasive Species: Zebra or quagga mussel examinations will be completed during the month of March.

Siberian Prawn: Sampling at Lower Monumental Dam has not occurred yet for the season.

Fish Rescue/Salvage: No fish rescue was performed this week for Lower Monumental Dam.

Research: No research is currently being performed at Lower Monumental Dam. This season, PNNL plan to obtain lamprey from Lower Monumental Dam to study behavior and survival of Pacific lamprey. In addition, the Nez Perce Tribe will be collecting steelhead kelts this season for reconditioning consisting of the collection of post-spawned steelhead and the administration of prophylactics and feeding for the purpose of improving survival relative to the untreated conditions. Employees arrived on March 13 to set up the tank for the collection of the steelhead kelts.

Project: Little Goose Dam
Biologist: Deb Snyder, Cole Reeves
Dates: March 08 – March 14, 2024

Turbine Operation

Yes	No	Turbine Unit Status
	X	All 6 turbine units available for service? (See table and comments below for details)

*All available turbine units are operated in accordance with Appendix C of the Fish Passage Plan

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

	OOS		RTS		
Unit	**Date**	**Time**	**Date**	**Time**	**Outage Description**
5	4/14/2017	14:11	06/30/2024	ERTS	Spider and upper guide bearing repair.

Comments: Contractual obligations and performance issues realigned the Unit 5 ERTS date into 2024.

Adult Fish Passage Facility

USACE staff inspected the adult Fishway on March 11, 13, and 14.

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	X		North Powerhouse Entrance (NPE-1) Weir Depth	≥ 7.0’ or on sill	3/11 5.1, 3/12 5.7
X	X	X	North Powerhouse Entrance (NPE-2) Weir Depth	≥ 7.0’ or on sill	3/11 5.1
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	
X			North Shore Entrance (NSE-1) Weir Depth	≥ 6.0’ or on sill	
X			North Shore Entrance (NSE-2) Weir Depth	≥ 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: The adult fishway was returned to service on February 15. The AWS pumps returned to service on February 22. The Collection Channel Surface Velocity is measured at NPE. The NPE-1 weir is not lowering below 533.1, due to be a sensor issue. Electricians fixed the NPE-1 limit switch issue on March 14.

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 3 were returned to service February 22. Fish pump 2 was returned to service on February 28.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comment
X			Forebay debris load acceptable? (amount)	High 130 ft² - Low 15 ft²
		X	Gatewell drawdown measured this week?	
		X	Gatewell drawdown acceptable	
		X	Any debris seen in gatewells (% coverage)	
		X	Any oil seen in gatewells?	

Comments: The forebay had minimal floating debris inside the trash shear boom with the highest measurement occurring on March 14 at 70 ft². The overall total forebay debris high occurred March 14. The season initial draw down differential measurements are scheduled for the week of March 18 post ESBS installation and trouble shooting.

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: Installation of ESBS's are scheduled to be fully functional and deployed the week of March 18.

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: The juvenile bypass system was watered up on March 7 without incident.

Collection Facility: The juvenile collection facility is tentatively scheduled to water up on March 20. Every other day collection for condition monitoring in conjunction with secondary bypass will commence on March 25 with the first sample being conducted on March 26. Everyday collection is scheduled to begin April 23 coinciding with every other day barge transportation.

Transport Summary: Collection for fish transportation is scheduled to begin April 23 with the first barge departure on April 24. Every day barging is scheduled thereafter until 15 May.

Spillway Weir: Little Goose began operation of the adjustable spillway weir (ASW) on March 1 to facilitate passage of adult steelhead overshoots. During this report period operation occurred three days each week every other day for four hours in the morning per CBR LGS R 022904 1647. Spring spill operations are scheduled to being on April 3. Summer spill operations are scheduled to begin on June 21.

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
36.2	30.7	1.3	1.2	43.6	43.0	5.6	5.1

*Ladder temperature.

Other

Inline Cooling Water Strainers: Inline cooling strainer inspections commenced on December 1, 2023. Inspections will continue in accordance with the Fish Passage Plan (FPP) and results will be submitted to the District.

Avian Activity: Daily piscivorous bird counts at Little Goose Dam are scheduled to begin April 1, while USDA-APHIS bird abatement contract services are in place.

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

Siberian Prawn: Juvenile fish collection will begin March 25. Siberian prawns collected in the sample at the Juvenile Fish Facility will be humanely euthanized by Oregon Department of Fish and Wildlife and EAS Bio personnel, frozen and properly disposed of in a landfill.

Gas Bubble Trauma (GBT): Oregon Department of Fish and Wildlife will perform GBT monitoring services with the scheduled start date to be determined.

Fish Rescue/Salvage: No fish rescue and salvage operations transpired during this reporting period.

Research: The Nez Perce Tribe (NPT) will begin adult steelhead kelt collection efforts on March 26 with an anticipated conclusion date of July 1.

Project: Lower Granite
Biologists: Elizabeth Holdren and David Miller, Lee
Dates: March 8-14, 2024

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)

	OOS		RTS		
Unit	Date	Time	Date	Time	Outage Description

Comments: No unit outages reported this week.

Adult Fish Passage Facility

The adult fishway was watered up with gravity flow January 23. LWG adult fish ladder was returned to FPP operating criteria February 27. Lower Granite staff inspected the adult fishway on March 11, 13 and 14.

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:

Fish Ladder Cooling Pump annual maintenance PM will be completed March 12.

Fish Ladder Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Comments
			South Shore Entrance (SSE-1) Weir Depth	≥ 8.0’	
	X		South Shore Entrance (SSE-2) Weir Depth	≥ 8.0’	7.8’
X			South Shore Channel/Tailwater Differential	1.0’ – 2.0’	
X		X	North Powerhouse Entrance (NPE-1) Weir Depth	≥ 8.0’ or on sill	Sill March 11
X		X	North Powerhouse Entrance (NPE-2) Weir Depth	≥ 8.0’ or on sill	Sill March 11
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	
	X		North Shore Entrance (NSE-1) Weir Depth	≥ 7.0’ or on sill	6.7’
	X		North Shore Entrance (NSE-2) Weir Depth	≥ 7.0’ or on sill	6.9’
	X		North Shore Channel/Tailwater Differential	1.0’–2.0’	0.8’, 0.6’
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: Ladder collection channel operation and configuration will continue to be evaluated this season to resolve ongoing issues. FOGs 1, 4, 7, and 10 are in operation.

Auxiliary Water Supply System:

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

Comments: AWS Pump 1 is operating in Fast mode and AWS pump 3 is On. AWS pump 2 remains out of service for maintenance.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	160 yd^2.
	X		Trash rack differentials measured this week?	
		X	Trash rack differentials acceptable	
		X	Any debris seen in gatewells (% coverage)	
		X	Any oil seen in gatewells?	

Comments: Unit trash racks were raked February 26-29.

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:

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

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

Comments: The juvenile bypass system was watered-up to Primary Bypass on March 13.

Collection Facility: The collection facility is scheduled to be watered up for operational testing of the sample line upgrade, PIT tag sample line upgrade, and Vaki count system. Condition sampling is scheduled to begin at 0700 March 25 with the first sample worked up March 26. Research collection for in-river survival tagging will take place the weeks of April 1 and April 8, collection for the transport study will begin the week of April 15, and collection for everyday barging is scheduled to begin April 23.

Transport Summary: The first research trip is scheduled for April 18. Spring Chinook salmon from the Tucannon fish hatchery will be loaded at Lyons Ferry fish hatchery and released below Bonneville Dam with the on the research trip departing LWG April 18.

Spillway Weir: The RSW will be operated 4 hours per day in a.m. March 1-20. The RSW will switch to 24-hour operation on March 21.

PIT interrogation: There were: 1 Chinook, 0 steelhead, 0 coho and 0 sockeye juveniles; and 44 steelhead, 0 Chinook, 0 coho and 0 sockeye adult salmonids detected at the RSW. There were 2 Chinook, 0 steelhead, 0 coho and 0 sockeye juvenile; and 0 Chinook, 0 steelhead, 0 coho and 0 sockeye adult salmonids detected at the Juvenile Bypass System through March 14 (PTAGIS).

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
34.8	31.7	1.6	1.5	42.3	41.6	4.3	3.6

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: Unit cooling strainer inspections were conducted on February 22.

Invasive Species: No zebra/quagga muscles were detected on the trap substrate.

Avian Activity: Biologist daily piscivorous bird counts at Lower Granite Dam. Some gulls and cormorants are present in the tailrace.

Gas Bubble Trauma (GBT) Monitoring: N/A

Adult Fish Trap Operations: The adult trap was watered up March 4. Collection for sampling started at 1400 hours on March 4 at a 25% (18% /week) sample rate. Collection for sampling will be conducted Monday through Friday until broodstock collection starts August 18.

Fish Rescue/Salvage: N/A

Research:

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 March 1 through November 30. The goal is to collect 5-20% of adult steelhead, spring/summer Chinook salmon, and sockeye salmon ascending the ladder March 1-November 30. 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.

Sampling and PIT tagging of Walleye by the Idaho Department of Fish and Game (IDFG) and NOAA Fisheries.

Walleye collected in the adult fish trap will be PIT tagged to investigate movement and ascension rate of walleye that successfully exit the fish ladder into the upstream reservoir. PIT tag data collected will be used to gain an understanding of the potential expansion and threat of walleye upstream of LWG to ESA-listed salmonids and guide future management actions of walleye in the Snake River Basin.

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 SbyC 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.