U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#04-2013

Project: McNary
Biologists: Carl Dugger and Bobby Johnson
Dates: March 22 - 28, 2013

Turbine Operation

McNary had 12 units available for power generation this week. Current turbine unit outages are recorded in Table 1. On April 1, the hard constraint one percent operational criteria will begin.

Table 1. Unit Outages at McNary Dam.

Units	Outage Dates	Outage Length	Reason
3	Jun 4 – May 31	One year.	After rewind, thrust bearing.
14	Sep 18 – May 2	Seven months.	Turbine bearing issues continue.
8	Mar 27	3.3 hours.	In and out of service for black start testing.
5, 6 & 7	Mar 27	1.1 hours.	In and out of service for black start testing.

Adult Fish Passage Facilities

On March 24, 26 and 28, the McNary fisheries personnel performed measured inspections of the adult fishways. On March 28, maintenance staff completed installation of a new heat pump in the Washington ladder PIT tag station. On March 29, project personnel lowered the picketed leads in both ladders. Fisheries staff will help monitor the picketed leads while the juvenile fish facility is in primary bypass mode. Visual fish counting will resume April 1 with a new contractor.

Fish Ladder Exits: During the inspections, both ladder exits met all Fish Passage Plan criteria. The Oregon traveling screen differentials continued to be satisfactory.

Fishway Entrances and Collection Channel: All Washington and Oregon ladder entrance inspection points met criteria this week. Oregon collection channel velocities averaged 1.6 feet per second. The velocity meter is functioning well.

Auxiliary Water Supply System: Fish pumps 1 and 3 operated satisfactory this week with blade angles of 30 degrees. Pump 2 remains out of service for major overhaul which will require a contract. The juvenile fish facility returned to service March 26 and is now providing the usual 450 cfs to the north powerhouse pool. The Wasco County PUD turbine unit had no interruptions in service this week.

Juvenile Fish Passage Facility

Winter maintenance is now completed. On March 26, from 0800 to 1030 hours, the fisheries staff re-watered the juvenile collection channel and set the system to automatic operation. The system will be in primary bypass until April 6 at 0700 hours when the first day of secondary bypass will begin. Alternating days of primary and secondary bypass will begin with the start of ESBS installations on April 5.

Forebay Debris/Gatewell Debris/Oil: Forebay debris accumulations were light to moderate. Some tumbleweeds are beginning to arrive. The fisheries staff continued to monitor trash rack differentials and no problems were seen. No problems were observed in the gatewell slots.

ESBSs/VBSs: All ESBSs remain in their raised positions. Winter screen maintenance is nearly concluded. Screen rehabilitation is continuing with the installation of new motors, chains and brushes. Screen deployments are expected to take place from April 5 to 15, similar to the installation dates over last four seasons in support of juvenile lamprey passage. VBS rehabilitation also continued. VBS differential monitoring will resume when ESBS installations begin.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe: Forty-two orifices were opened with the completion of winter maintenance on March 26, returning the system to primary bypass. We have observed no problems with orifices.

Electrical staff repaired one of the channel bulkhead hoist motors on March 25. The fisheries staff removed oil spilled during hoist repairs before rewatering the collection channel the following day. On March 26, an electrician adjusted the upper limit on the rectangular screen cleaning brush bar. All systems operated well in automatic mode. As a precaution, the transition screen cleaning device is being operated only during day shifts.

Transportation Facility: The fisheries staff re-watered the facility with the completion of maintenance on March 26. All systems remain off as the facility is in primary bypass mode. Although no problems were encountered, there are concerns about a hydraulic jump located on the return to river line just downstream of the barge line dewatering unit. This location is being closely monitored.

Transport Summary: No transport operations are scheduled at the present time.

River Conditions

River conditions during this report period are outlined in Table 2. Reported data was provided by the control room. The data day is from 0000 to 2400 hours. Water temperature data continues to be taken from the turbine unit 1 scroll case.

On March 22, project personnel completed TSW installations in spill bays 19 and 20. The TSW in bay 19 is attached to a crane and it tested well, resulting in the spill noted in the table. At bay 20, project personnel noted that the TSW frame was bent and have requested assistance from

District personnel. This TSW is attached to a spill bay hoist. This week, routine maintenance took place in spill bays 3, 9 and 16.

Table 2. River conditions at McNary Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature (^{o}F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
123.9	105.4	0.4	0.0	43	43	6.0	5.1

Other

Inline Cooling Water Strainers: The next cooling water strainer inspections are slated to take place on April 2.

Invasive Species: The zebra mussel trap was examined on March 26. No invasive species were found.

Avian Activity: Bird counts resumed March 28, with each zone being observed once a day in the morning. While conducting other inspections, we observed an occasional gull, grebe or cormorant near the project. No birds were noticed by the bypass outfall during primary bypass operations. Project personnel activated the hazing water cannon on March 26. No problems were encountered.

Research: In early April, divers will be installing equipment in support of the FGE (Fish Guidance Efficiency) study.

Project: Ice Harbor
Biologist: Mark Plummer
Dates: March 22 - 28, 2013

Turbine Operation

All units were out of service for short periods to permit installation of the STSs. Turbine units 2 returned to service March 27 at 1700 hours. Turbine units 3 and 5 remained out of service. Turbine unit 3 is out of service due to exciter problems and unit 5 is out of service due to blade cracking.

Adult Fish Passage Facilities

Fish facility personnel inspected the adult fishways March 25, 26, and 27.

Fish Ladders: The north and south shore adult fish ladder inspection areas (picketed leads, head differentials, fishway exits, and depth over weirs) were within criteria.

Fishway Entrances and Collection Channel (inspection date order): The south shore entrance (SFE) was on sill with a depth of 8.1 feet, on sill with a depth of 8.0 feet, and off sill with a depth of 8.5 feet. The north powerhouse entrance (NFE) was on sill with a depth of 8.1 feet, on sill with a depth of 8.3 feet, and off sill with a depth of 8.5 feet. The north shore entrance (NSE) was on sill with a depth of 7.7 feet, on sill with a depth of 7.9 feet, and off sill with a depth of 8.7 feet. Fishway entrance criterion is 8 feet depth, greater than 8 feet depth, or on sill. All channel/tailwater differentials were in criteria. Channel/tailwater differential criteria are 1 – 2 feet.

Auxiliary Water Supply System: Two of the 3 north shore fish pumps were operated without problems. Six of 8 south fish pumps are in service. All south fish pumps are available for operation.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: No problems to report. Debris is accumulating in the forebay in front of the powerhouse. Fish ladder exits are clear of debris and the bubblers are operating satisfactorily.

STSs/VBSs: STSs were deployed for service March 25 and 26.

Orifices, Collection Channel, Dewatering Structure, and Bypass Pipe: The juvenile bypass is watered up with 20 open orifices.

Juvenile Bypass Facility: The bypass is watered up.

Fish Sampling: The first sample is scheduled for April 8. Sampling days will alternate from Monday and Wednesday to Tuesday and Thursday each week.

Removable Spillway Weir: The RSW is currently not in operation. Spill for fish is expected to begin April 3, 2013.

River Conditions

River conditions during the week are outlined in Table 1.

Table 1. River conditions at Ice Harbor Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (^{o}F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
39.9	26.6	0.0	0.0	44	43	6.5	6.0

*Unit 1 scrollcase temperature.

Other

Inline Cooling Water Strainers: See results posted in table 2 below.

Table 2. March 26, 2013 Inline Cooling Water Strainer Inspection Results, Ice Harbor Dam.

Turbine Unit	Fish Recovered/Comments
1	3 juvenile lamprey mortalities, 1 juvenile shad
2	strainer unwatered
3	strainer unwatered
4	3 juvenile lamprey mortalities, 1 unclipped juvenile Chinook.
5	strainer unwatered
6	6 juvenile lamprey mortalities.

Invasive Species: No invasive species were detected this week.

Avian Activity: Formal bird counts and hazing are not occurring at this time.

Research: There is no research is in progress at this time.

Project: Lower Monumental
Biologists: Bill Spurgeon and Elizabeth Lindsey
Dates: March 22 - 28, 2013

Turbine Operation

The units are being operated in soft constraint of the 1% operation criteria. Unit 5 was out of service form 0730 hours on March 22 through 1700 hours on March 25 due to a brake problem.

Adult Fish Passage Facility

The adult fishway was inspected by Corps biologists on March 24, 25, and 26.

Fish Ladders: Fishway exit head differentials and depths over the weirs were within criteria (≤ 0.5' and 1.0'-1.3', respectively) on all inspections. Picketed lead head differentials were in criteria (≤ 0.4' and ≤ 0.3' for north and south shore fishways, respectively) on all inspections.

Fishway Entrances and Collection Channel: NSE1 and NSE 2 weir gates were in depth criteria (criteria: > 8' or on sill) on all inspections. North shore channel/tailwater head was in criteria (1'-2') on all inspections.

SPE 1 and SPE 2 weir gates were in sill criteria (criteria: ≥ 8' or on sill) on all inspections. While on sill, the gate depth readings were 6.1', 6.8', and 7.0 feet. South powerhouse channel/tailwater head was in criteria (1'-2') on all inspections.

SSE1 weir gate was in sill criteria (criteria: ≥ 8' or on sill) on all inspections. While on sill, the gate depth readings were 7.6', 7.7', and 7.6 feet. SSE 2 was in criteria (6' above sill) on all inspections. South shore channel/tailwater head was in criteria (1'-2') this week.

Auxiliary Water Supply System: AWS pumps 1 and 3 were operated throughout this period. Two pump operations will continue until bearing repair and shaft alignment work is completed on pump 2, approximately July 15.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: There was an average of 1186.7 square yards of forebay debris observed during this period. Gatewell drawdown baselines were measured on March 26, 27, and 28. Gatewell debris ranged from 0-25% surface coverage.

STSs/VBSs: STSs are operating in cycle run mode.

Orifices, Collection Channel, Dewatering Structure, Flume: The collection channel is operating with 19 orifices open. The bypass outfall bird sprinklers are currently under repair due to freeze damage.

Collection Facility: The collection facility was watered up for testing on March 21. Collection for fish condition sampling will begin on April 1. Subsequent collection for condition monitoring will occur every third day.

Transport Summary: No transport.

River Conditions

River conditions during the week are outlined in Table 1.

Table 1. River conditions at Lower Monumental Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature (^{o}F)*		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
40.0	25.3	0	0	43.0	43.0	4.4	4.1

*Scrollcase temperatures.

Other

The RSW is ready for year 2013 spill operations.

Inline Cooling Water Strainers: Cooling water strainers were inspected on March 11. Two live lampreys were recovered. Mortalities included 5 juvenile lampreys.

Invasive Species: There were no zebra mussels observed at the monitoring stations on March 4.

Avian Activity: Formal bird counts and hazing are not occurring at this time.

Research: There is no research is in progress at this time.

Project: Little Goose
Biologist: Richard Weis
Dates: March 22 - 28, 2013

Turbine Operation

Turbine units 1, 2, 3, 4 were available for service throughout most of this report period. Unit 5 was OOS for the entire week. Unit 4 was forced out of service on March 26 for oil leak on screen 4C. Unit 6 was removed from service on March 27 for exciter inspections and returned to service on March 28. All available turbine units were operated in soft constraint of the 1% efficiency criteria.

Adult Fish Passage Facility

USACE and ODFW fisheries biologists performed measured inspections of the adult fishway March 24, 26 and 28.

Fish Ladder: The ladder exit head differentials ranged between 0 and 0.1 feet (criteria $\leq$ 0.5 ft.). Water depths over the weirs ranged between 1.1 and 1.2 feet (criteria 1.0-1.3 ft.) and picketed lead head differentials ranged between 0 and 0.1 (criteria $\leq$ 0.3 ft.). No debris was observed at the picketed leads or the ladder exit. The air bubbler used to prevent debris from collecting near the ladder exit operated satisfactorily.

Fishway Entrances and Collection Channel: Channel to tailwater head differentials ranged between 1.6 and 2.0 feet (criteria 1.0 to 2.0 ft.). SSE weir depths ranged between 8.3 and 8.4 feet (criteria $\geq$8.0 ft). As a result of two pump operations and decreased channel to head differentials, NPE2 remained closed. NPE1 weir rested on sill and depths ranged 6.0 and 6.6 feet (criteria $\geq$7.0 ft or on sill). NSE weirs are at fixed elevations of 532.0 feet and depths ranged between 5.8 and 6.5 feet (criteria $\geq$ 6.0 ft.). Collection channel surface water velocities (criteria 1.5 fps) ranged from 1.0 to 1.2 fps near the SSE. The velocity near the NSE was 2.9 fps on both inspections.

Auxiliary Water Supply System: For the most part, fish pumps 1 and 2 operated within criteria ranging between 77 and 79 rpm. Fish pump 3 remains out of service and is undergoing repairs. Fish pumps were removed for service to allow survey boat up close to the dam on the following dates and times. March 22 from 1145 to 1330 hours, March 24 from 0930 to 1200 hours and March 26 from 1230 to 1540 hours.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: Woody debris observed this week ranged from 4,000 to 11,000 square feet inside the trash shear boom. Scattered woody debris was observed outside the trash shear boom. On March 27 there was a debris spill to remove woody debris from in front of spillbay #1 for TSW installation next week.

Spillway Weir: The spillway weir was not in service during this report period.

ESBS/VBS: ESBSs 4A through 4C were lowered into operating position on March 25. ESBS 4C was leaking a small amount of oil and was pulled for repair on March 27.

Orifices, Collection Channel, Dewatering Structure, Flume: The juvenile collection system was watered-up and placed into service on March 19. The system is operating with 18 open orifices in primary bypass mode.

Transportation Facility: The facility was watered-up on March 27.

Transport Summary: Transport operations are expected to begin in late April or early May.

River Conditions

River conditions during the week are outlined in Table 1.

Table 1. River conditions at Little Goose Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (^{o}F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
37.7	25.9	0	0	45.5	43.1	4.8	4.3

*Ladder temperature.

Other

Invasive Species: The zebra mussel substrate monitor is scheduled for inspection on April 1.

Cooling Water Strainers: On March 28 cooling water strainers were inspected. 8 juvenile lamprey mortalities were removed. The next inspection is scheduled for April 4.

Avian Activity: Up to 11 cormorants and 13 gulls were observed.

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

Project: Lower Granite
Biologist(s): Mike Halter and Ches Brooks
Dates: March 22 - 28, 2013

Turbine Operation

Lower Granite had all turbine units except for unit 5 available for power generation during the report period. Turbine unit 5 is out of service for cavitation repair. The tentative return to service date for this unit is April 12.

Adult Fish Passage Facility

On March 22, 23 and 26 the Lower Granite fisheries biologists performed measured inspections of the adult fishway system.

Fish Ladder: All criteria were met.

Fishway Entrances and Collection Channel: Head differential readings remained within criteria at all fishway entrances during the period inspections.

Weir depths at the south shore fishway entrances also met criteria during all weekly inspections. The north powerhouse fishway entrances were on sill on all inspections this week due to tailwater elevations below 636.0 feet (these gates bottom out at elevations below 636.0 feet). North powerhouse fishway entrance weir depths ranged from 6.9 to 7.8 feet. Weir depths at the north shore entrances ranged from 4.5 to 5.8 feet (criterion $\geq$ 7.0 feet). Only north shore entrance 1 can adjust its' depth relative to the tailwater elevation. North shore entrance 2 is manually set at a compromise depth of 630.0 feet. Normally weir depth readings at the north shore entrances are sacrificed in order to maintain the requisite 1.0 foot of head differential.

Velocity readings in the adult fishway collection channel transition pool area ranged from 0.91 to 1.11 feet per second and averaged 1.04 feet per second.

Auxiliary Water Supply System: Fish pumps 2 and 3 were operated during the week. Fish pump 1 is out of service in order to perform a motor re-wedge. The tentative return to service date for this pump is now early April.

Juvenile Fish Passage Facility

Due to the installation of fish screens, the juvenile collection gallery was watered up starting at 0800 hours on March 18. The separator was also watered up and fish are being diverted back to the river through the long bypass pipe (secondary bypass). Formal fish sampling activities began on March 25.

Forebay Debris/Gatewell Debris/Oil: The amount of forebay debris varied during the week due to wind strength and direction; none was removed.

ESBSs/VBSs: VBS/ESBS video inspections are scheduled for April 15.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe: Orifices are being backflushed every three hours around the clock in an attempt to keep them free of materials that might impact fish passage.

Transportation Facility: General barge transport operations are up in the air at this time but will probably begin in early May. Research barging operations are tentatively scheduled to begin on April 18. Juvenile fish sampling (only) activities began on March 25.

Transport Summary: Nothing to report.

Removable Spillway Weir: The RSW is not in operation at the present time..

River Conditions

River conditions during the week are outlined in Table 1.

Table 1. River conditions at Lower Granite Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (^{o}F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
39.7	26.8	0.0	0.0	47.0	45.8	3.5	3.0

*Scrollcase temperature.

Other

Video counts in the adult fish ladder counting room began on March 1. The recording hours are from 0600 to 1600 hours.

Inline Cooling Water Strainers: Cooling water strainers were inspected for lamprey entrainment on March 27. A total of 44 lamprey were found in the strainers over a combined run time of 1,389.3 unit hours. The next cooling water strainer inspections are scheduled for late April.

Invasive Species: The zebra mussel substrate near the adult fishway exit was last examined for zebra mussels on March 4. No evidence of zebra mussels was found. The next inspection is scheduled for early April.

Avian Activity: Formal bird counts and hazing are not occurring at this time.

Adult Trap: The adult fish trap was watered up and sampling began on March 4. The initial sample rate is 21%. Since 2013 adult trapping is being conducted Monday thru Friday, the 21%

sample rate represents an overall weekly sample rate of 15%. Genetic samples are being taken from one out of every 10 hatchery steelhead. All wild steelhead captured are being PIT-tagged and are having scale and genetic samples taken. Any previously PIT-tagged steelhead (either hatchery or wild) will have both scale and genetic samples taken for verification purposes.

Research

Idaho Fish and Game (IDFG) Genetic Stock Identification: The goal of this study is to develop fine-scale genetic profiles for natural origin salmon and steelhead; develop genetic stock identification (GSI) techniques to estimate stock-specific escapement over LGR, monitor abundance, productivity and distribution of naturally produced adult and juvenile steelhead and salmon; research and monitor stock-specific life history characteristics. At LGR the goal of the study will be to enumerate and characterize the natural production of spring/summer Chinook salmon and steelhead above LGR with regards to age composition and genetic stock profiles. IDFG will sample Monday through Friday until the first part of July with the goal to collect between 2,000-5,000 genetic samples each from yearling spring/summer Chinook and steelhead and 500-3,000 genetic samples from subyearling fall Chinook.