U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#03-2015

Project: McNary
Biologists: Carl Dugger and Bobby Johnson
Dates: March 13 - 19, 2015

Turbine Operation

McNary had 11 to 13 units available for power generation this week. On April 1, the hard constraint one percent criteria will begin. Currently, units can run outside the soft constraint at the BPA's request. Unit outages are recorded in Table 1 below.

Table 1. Unit Outages at McNary Dam.

Units	Outage Dates	Outage Length	Reason
11	Sep 18, 2013 – Mar 18, 2015	About 18 months.	Unit began 72 hour test after turbine bearing issues were resolved.
12	Feb 8 – Oct 9	About 8 months.	Rewind contract.
13	Mar 17 to 18	About 26 hours.	Measure rotor/air gap.

Adult Fish Passage Facilities

On March 15, 17 and 19, the McNary fisheries staff performed measured inspections of the adult fishways. On April 1, visual adult fish counts will resume. This week, the fisheries staff prepared both count stations for the coming season. PIT tag station heat pumps in both ladders also underwent scheduled maintenance this week. Fish counting personnel will meet for orientation at McNary Dam on March 20.

Fish Ladder Exits: Both ladder exits met all Fish Passage Plan criteria during measured inspections.

At the Washington exit, we continued to monitor the slight leak at the lower east corner of the count station window. For the report week, no problems were encountered and only a light amount of debris was in the area of the exit. We cleaned the trash rack as needed. On March 16, the general maintenance staff removed a small log from the first stationary weir downstream of the count station.

On March 15 and 19 at the Oregon exit, we noted a reset regulating weir alarm. The weir set point was also adjusted. Light debris remains in the exit area. Traveling screen differentials were satisfactory. On March 15, one traveling screen alarm was reset, and screens were subsequently set to run every 6 hours.

Fishway Entrances and Collection Channel: At the Washington ladder entrance, all inspection points met criteria this week.

All Oregon ladder inspection points also met criteria this week.

Collection channel surface velocities averaged 1.7 feet per second.

Auxiliary Water Supply System: The Wasco County PUD turbine unit had no interruptions in service this week.

Oregon ladder fish pumps operated satisfactorily this week with blade angles of 30 degrees. Pump 2 is currently out of service for major overhaul under contract. This work is should be completed by September 2015.

The juvenile facility remains out of service for maintenance and is not yet supplying the usual 450 cfs to the north powerhouse pool. We will return the system to service on March 30.

Juvenile Fish Passage Facility

The facility remains shut down for winter maintenance, which is nearing completion. On March 30, we will re-water the system.

Forebay Debris/Gatewell Debris/Oil: The forebay debris load was moderate to heavy with a light amount of incoming debris some of which was passed by the TSW when in use. Most of the debris was scattered across south half of the powerhouse. This week, trash rack differential measurements were satisfactory and no units were cleaned. We observed no problems in the gatewell slots.

ESBSs/VBSs: All ESBSs remain in their raised positions. The project staff has nearly concluded maintenance. Screen installations are slated to take place from April 5 to 15 in similar fashion as the last six seasons in support of juvenile lamprey passage.

VBS rehabilitation also continued during the winter. When ESBS installation begins, we will resume VBS differential monitoring.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe: The orifices remain closed for winter maintenance which is nearing conclusion. We continued to bleed channel air in order to remove moisture. The channel will be re-watered and bypass operations will begin on March 30.

This week, the project completed scheduled electrical maintenance on the side screen dewatering valves.

The gasket at the junction of the full flow pipe and the primary bypass gate structure will be replaced March 24 and 25.

Bypass Facility: The facility remains unwatered for winter maintenance which is nearing completion. This week, the fisheries staff completed painting the separator area, replaced two gaskets on the primary bypass gate, prepared the GBT system for the coming season, hard wired a temperature probe to the B side sample tank with the readout being in the wet lab and did general facility preparations.

Next week, the smolt monitoring staff will begin pre-season preparations.

River Conditions

For this week, from March 14 at 0001 hours to March 17 at 0001 hours, the TSW at bay 20 was open for the spring phase of the adult study, which is now concluded. From March 17 to 18, slight spill in excess of powerhouse capacity occurred. River conditions during the week are outlined in Table 2 as provided by control room data, which runs from 0000 to 2400 hours each day. Water temperature is taken from the unit 1 scroll case.

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
201.4	141.6	9.1	0.0	45	43	6.0	5.5

Other

Inline Cooling Water Strainers: The next cooling water examination will occur in early April.

Invasive Species: The biologist will conduct a zebra mussel station examination on March 22.

Avian Activity: Bird counts will resume in April, when technicians are on shifts. Gulls, cormorants and grebes appear to be in the general area in low numbers. At times, a large flock of cormorants has been noted. Gulls and cormorants continue to roost on the rocks by the Washington shore boat dock and on the navigation lock wing wall. The bypass system is not functional so there are no birds to observe at the outfall. This week, we deployed the bird hazing distress calls around the project. On April 1, APHIS will begin hazing operations.

Research: As mentioned above, the spring section of the adult fallback study concluded this week.

Project: Ice Harbor
Biologist: Ken Fone
Dates: March 13 - 19, 2015

Turbine Operation

Unit 3 was taken out of service on July 7, 2014, at 1346 hours to investigate a generator electrical grounding problem and for annual maintenance, and remains out of service to finish its conversion into a fixed-blade unit to remedy an oil leak from the hub, and for digital governor upgrades. Units were taken out of service one at a time for trash rack raking on March 14, 15, and 17.

Adult Fish Passage Facilities

Fish facility personnel inspected the adult fishways on March 16, 17, 18, and 19.

Fish Ladders: The north fish ladder inspection areas (head differentials at fishway exit and picketed leads, and depth over weirs) were in criteria on all inspections. The south fish ladder inspection areas (head differentials at fishway exit and picketed leads, and depth over weirs) were in criteria on all inspections. Criteria for head differentials at ladder exits and picketed leads, and depth over the weirs are 0.5 feet or less, 0.3 feet or less, and 1.0-1.3 feet, respectively. The water surfaces above the fish ladder exits were clear of debris and the bubblers were operating satisfactorily. The north and the south shore picketed leads were put in their raised positions on November 3, 2014. Adult fish counts ended for the season on October 31, 2014.

Fishway Entrances and Collection Channel: The south shore entrance (SFE) depth and channel/tailwater differential were in criteria on all inspections. The north powerhouse entrance (NFE) depth and channel/tailwater differential were in criteria, except for a depth of 7.3 feet on March 19. The north shore entrance (NSE) depth and channel/tailwater differential were in criteria, except for a differential of 0.8 feet on March 19. These out-of- criteria locations were reported to the electricians for calibration. Fishway entrance criteria are 8 feet depth or greater, or on sill. Channel/tailwater differential criteria are 1 – 2 feet.

The south shore channel velocity was in criteria, except for a reading of 1.4 feet/second on March 17. The channel velocity criterion is 1.5-4.0 feet/second.

Auxiliary Water Supply (AWS) System: Two of the three north shore AWS pumps were operated throughout the week. Six of the eight south shore AWS pumps were operated.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: There was approximately 50 square yards of debris observed in the forebay. Turbine unit trash racks were raked on March 14, 15, and 17. Approximately 8 cubic yards of debris were removed.

STSs/VBSs: STSs currently are raised for annual maintenance.

Orifices, Collection Channel, Dewatering Structure, and Bypass Pipe: The juvenile fish bypass was watered up and 20 orifices were opened on March 18.

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

Fish Sampling: Sampling operations are scheduled to begin the week of April 6.

Removable Spillway Weir: The modification of spill bay 2 ogee and flow deflector is complete and the contractor demobilized this week.

River Conditions

River conditions during the week are outlined in Table 1 below.

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
57.1	26.5	0	0	45	43	6.4	3.6

*Unit 1 scrollcase temperature.

Other

Inline Cooling Water Strainers: Monthly turbine cooling water strainer inspections will take place the week of March 23.

Invasive Species: No new exotic species have been found.

Avian Activity: Low numbers of piscivorous birds were seen around the project during the week.

Research: Installation of the fish release pipe, in support of the spillbay 2 direct fish injury and survival study, began on March 19.

Project: Lower Monumental
Biologists: Bill Spurgeon and Raymond Addis
Dates: March 13 - 19, 2015

Turbine Operation

The units are being operated in soft constraint of the 1% operation criteria. Unit 1 was removed from service on December 10, 2014 for unit rehabilitation with an estimated return to service date of January 12, 2017.

Adult Fish Passage Facility

The adult fishway was inspected by Corps biologists on March 16, 17, 18 and 19.

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 NSE2 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.

SPE1 and SPE2 weir gates were in depth or sill criteria (criteria: ≥ 8' or on sill) on all inspections. While on sill, the gate depth readings ranged from 7.5' to 7.8 feet. South powerhouse channel/tailwater head was in criteria (1'-2') on all inspections.

SSE1 weir gate was in depth criteria (criteria: ≥ 8' or on sill) on all inspections. SSE2 was in criteria (6' above sill) on all inspections. South shore channel/tailwater head was in criteria (1'-2') on all inspections. All south shore channel and south shore tailwater readings were taken with a tape measure due to a power outage from navigation lock maintenance work.

Auxiliary Water Supply System: AWS pumps 1, 2, and 3 were operated throughout this period.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: There was an average of 93.5 square yards of forebay debris observed during this period. No oil was observed in the gatewells.

STSs/VBSs: STSs are currently raised for winter maintenance and are scheduled to be installed the week of March 23. The STS screens were inspected via rotation on deck on March 18. All screens tested OK and are ready for deployment.

Orifices, Collection Channel, Dewatering Structure, Flume: The collection channel is unwatered for winter maintenance. The primary bypass outfall water cannons are unwatered. Both systems are scheduled to be watered up the week of March 23.

Collection Facility: The facility is in winter maintenance mode.

Transport Summary: Transport is not occurring at this time.

River Conditions

Routine spill in support of fish passage is scheduled to begin April 3. River conditions during the week are outlined in Table 1 below.

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
49.1	26.1	0.0	0.0	44	43.5	4.8	4.3

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on March 2. In all, 261 live lamprey were recovered. Mortalities included about 1015 juvenile lamprey and 2 Siberian prawn.

Invasive Species: No zebra mussels were observed at the monitoring stations on March 2.

Avian Activity: Gulls and cormorants were the dominant piscivorous bird species observed during fish ladder inspections this week.

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

Project: Little Goose
Biologist: Richard Weis
Dates: March 13 - 19, 2015

Turbine Operation

All turbine units were available for service throughout this report period except unit 1. Unit 1 was placed out of service on March 4 with burned dash pot solenoid. Unit 1 was returned to service on March 18 at 1725 hours. Soft 1% peak efficiency constraint criteria are in effect.

Adult Fish Passage Facility

Adult fishway inspections were performed on March 16, 18 and 19.

Fish Ladder: The ladder exit head differentials held steady at 0.0 feet (criteria $\leq$ 0.5 ft.). Water depths over the weirs remained steady at 1.2 feet (criteria 1.0-1.3 ft.) and picketed lead head differentials held steady a 0.0 feet (criteria $\leq$ 0.3 ft.). No debris was observed at the picketed leads or the ladder exit area. 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 0.9 and 1.7 feet (criteria 1.0 to 2.0 ft.). SSE weir depths ranged between 7.2 and 9.0 feet (criteria $\geq$ 8.0 ft). NPE weir depths ranged between 6.4 and 7.7 feet (criteria $\geq$7.0 ft. or on sill). NSE weir depths ranged between 6.4 and 7.6 feet (criteria $\geq$ 6.0 ft.). Collection channel surface water velocity measured at the North powerhouse ranged between 1.9 and 2.5 fps (criteria 1.5 to 4.0 fps). The monthly water velocity measured at the north powerhouse using the Rickly velocity equipment measured 1 foot from bottom, mid depth and surface averaged 2.6fps.

Auxiliary Water Supply System: Fish pumps 2 and 3 were started on February 26 and operated within criteria. Fish pump 1 is waiting on parts.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: The trash/shear boom is currently still on shore. Efforts are underway to have it repaired. Woody debris accumulations in the immediate forebay were estimated between 1,200 to 2,400 square feet. Spill to remove forebay debris occurred on March 12 from 0630 to 0655 hours. Woody debris was observed in gatewells but removal is not possible with the ESBSs in their raised positions.

Spillway Weir: The spillway weir is scheduled to be placed back in service April 3 at the start of routine spring spill in support of fish passage.

ESBS/VBS: ESBSs are raised and removed from service for maintenance.

Orifices, Collection Channel, Dewatering Structure, and Flume: The juvenile bypass system is scheduled to be placed back into service March 25.

Transportation Facility: The transportation facility is scheduled to be placed back into service March 25.

Transport Summary: Fish transport is presumed to begin in late April.

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
52.6	24.7	0.0	0.0	44.3	43.8	5.5	5.1

*Ladder temperature.

Other

Invasive Species: The zebra mussel substrate monitor is scheduled for inspection on April 2.

Inline Cooling Water Strainers: Cooling water strainers on all units were inspected on March 19. No salmonids, lamprey or other fish were recovered.

Avian Activity: Bird counts and hazing will resume in April.

Research: The University of Idaho is slated to begin adult fish research on April 1.

Project: Lower Granite
Biologists: Elizabeth Holdren and Ches Brooks
Dates: March 13 - 19, 2015

Turbine Operation

Units are being operated within the soft constraint 1% operational criteria. Unit 1 was taken out of service October 21 for annual maintenance, fish screen slot closure work, and dive work associated with installation of the reinforcement bulkhead. Unit 1 remains out of service for recalibration of the governor due to loading and unloading issues. Unit 2 was taken out of service January 5 for permanent fish screen slot closures work and returned to service at 0822 hours on March 19. Units 3 and 4 were rotated out of service March 16 for trashrack raking and again March 18 and 19 for ESBS deployments.

Adult Fish Passage Facility

The fish ladder was inspected by Corps biologists on March 17, 18 and 19.

Fish Ladder: Fish ladder exit head differential and depth over the weirs were in criteria (≤0.5' and 1.0-1.3', respectively) on all inspections. Picketed lead head differential was in criteria (≤ 0.3') on all inspections.

Fishway Entrances and Collection Channel: SSE1 and SSE2 weir gates were in depth criteria on all inspections (criteria ≥8' or on sill). South shore channel/tailwater head was in criteria (criteria 1'-2') on all inspections.

NPE1 and NPE2 weir gates were in depth criteria on all inspections (criteria ≥8' or on sill). North powerhouse channel/tailwater head differential was out of criteria (criteria 1'-2') on all inspections with readings of 0.6', 0.8' and 0.7 feet.

NSE1and NSE2 were out of criteria (criteria ≥7' or on sill) on all inspections. NSE1 had gate depth readings of 5.1', 4.9' and 4.9 feet. NSE2 had gate depth readings of 7.2', 7.1' and 7.1 feet. North shore channel/tailwater head differential was out of criteria (criteria 1'-2') on all inspections with differential readings of 0.3', 0.5' and 0.7 feet. NSE2 has been out of service since the 2011 passage season and is suspended with a non-adjusting hoist system at an elevation of 630.0 feet. The gate requires a complete rehab and will remain out of service until funding is available. Entrance weir depths are being sacrificed in an attempt to maintain channel/tailwater head differential.

Collection channel velocities were out of criteria (criteria 1.5-4.0 fps) with readings ranging from 0.9 - 1.1 fps and a weekly average of 1.0 fps. Alternative methods of measuring collection channel velocity are being investigated for installation as part of the adult fish ladder control system upgrade.

Auxiliary Water Supply System: The ladder is in two pump operation with AWS pumps 1 and 3 in service. Operation of AWS pump 1 motor in "fast speed" mode trips the overload on the safety relay during low tailwater conditions. The power house electrical section is investigating the problem. Pump 2 is out of service for lower guide bearing repairs.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: Forebay debris varied due to wind strength and direction. The trashracks in units 1 and 2 were raked during the above mentioned unit outages. Units 3 and 4 trashracks were raked the week of March 16. No oil was reported in gatewell slots.

ESBSs/VBSs: ESBSs were deployed in units 1, 2, 3, and 4 March 18 and 19. Deployment of ESBS's in units 5 and 6 are scheduled for March 23 and 24.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe: The collection channel was watered up at 1300 hours on March 17.

Collection Facility: The juvenile collection facility was watered up in secondary bypass mode at 1300 hours March 17. Collection for condition sampling is scheduled to begin 0700 hours March 25 with fish being worked up March 26.

Transport Summary: No transport is occurring. The first research barge departure is scheduled for April 9.

River Conditions

No spill is occurring at this time. River conditions during the week are outlined in Table 1 below.

Table 1: River conditions at Lower Granite Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (F^o)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
53.7	25.6	0.0	0.0	48.9	48.9	4.1	4.0

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: The next inspections are scheduled for late March.

Invasive Species: The first inspection of this substrate will occur in early April.

Avian Activity: Daily piscivorous bird counts will begin March 26.

Adult Fish Trap Operations: The adult fish trap was watered up March 11. Trapping began March 14.

Fish Rescue Operation: No fish rescues occurred this week.

Research

Research: Onsite research is not occurring at this time.