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Bonneville 2nd Powerhouse Adult Fish Ladder

The Corps plans to restart one of two fish turbine units today to improve attraction conditions in the north fish ladder at the Bonneville Dam second powerhouse. Divers are inspecting the area this morning and have removed several diffuser gratings to prevent pressure build-up in the system. Assuming there is no additional damage found by the divers and all goes well, the fish unit will begin operation this afternoon.

Several weeks ago, Bonneville project personnel discovered that 25 diffuser gratings had dislodged from the north adult fishway Auxiliary Water Supply (AWS) system, allowing fish to enter the area and become trapped. Excessive amounts of debris in the river, resulting from very high flows this season, had plugged the gratings causing them to blow out from pressure. Divers were called in to retrieve, clean and replace the gratings.

Special operations were instituted to coax fish out of the AWS area. Fish turbine units used to create an attraction current at the base of the fish ladder, along with the eight main turbine units at the second powerhouse (combined generation capacity of about 600 MW), were shut down to avoid attracting migrating adult salmon into those areas.

Three other adult fish ladders at Bonneville Dam are functioning normally, permitting adult salmon to pass the dam at a rate of about 6-7,000 fish per day on their return migration from the ocean to upstream spawning grounds.

Based on extensive hydroacoustic monitoring, estimates range from 100 to 300 fish possibly trapped in the AWS, most probably carp, suckers and juvenile salmon under 15 inches in length; many in the 6-8 inch range. Biologists believe there are few, if any, adult salmon among them; adult salmon are generally larger than 15 inches. Four large sturgeon, between 2.5 and 4 feet in length, have also been sighted in the AWS.

Technical Management Team decisions:

At the August 6 meeting of the Technical Management Team (TMT) for Columbia/Snake river fish operations, the situation was discussed and the following plan was agreed to:

- Assuming the divers find no additional damage, the northern fish unit will be restarted August 7. The downstream and upstream entrances of the fish ladder will be opened to 10 foot submergence.

- The north ladder will operate in this configuration until Monday, August 11.
- On August 11, the Fish Passage Operations and Maintenance (FPOM) group will meet at Bonneville Dam. The TMT has asked FPOM to explore two items to report back to TMT on August 13:
 - What conditions would allow operation of the south entrance of the adult fishway at Bonneville Second Powerhouse? What is the timeline to perform the activities necessary to achieve that goal?
 - What is the status of the operation of the north ladder? If performance is satisfactory, can the second powerhouse units be placed back in operation?
- On the afternoon of August 11, divers will again examine gratings and debris build-up.
- At the August 13 meeting, the TMT will discuss when the main turbine units at the second powerhouse can be restarted. All parties agree the north ladder must be performing satisfactorily before the units are started up.
- Ongoing monitoring of the adult passage at the north ladder is required.

Background/Chronology:

- July 17: Corps project personnel determine that at least two diffuser gratings in Bonneville second powerhouse north ladder AWS are displaced. Agencies and tribes are notified.
- July 21: Divers discover total of 25 diffuser gratings dislodged. The two fish water attraction turbines at the north ladder are shut down and diffuser valves closed to avoid attracting fish into the system.
- July 21-24: Divers retrieve, clean, repair and replace dislodged diffuser gratings.
- July 24: The north ladder is returned to operation but with gravity flow only. Second powerhouse turbines shut down.
- July 31-August 1: Special operations are instituted to coax any trapped fish out of the AWS; one steelhead exits.
- August 4: Corps, National Marine Fisheries Service, Fish Passage Center, Columbia River Inter-Tribal Fish Commission and others inspect the area; curtail special operation since no fish were observed passing through. Hydroacoustic monitoring instituted to determine number of fish in AWS.
- August 6: TMT discusses situation and develops plan.

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