

MEMORANDUM FOR THE RECORD - 20 IHR 07

SUBJECT: Operational malfunction of north fish ladder entrance weir gate and juvenile fish channel water regulating weirs

On August 21 at 0830 hours, the powerhouse operator found that the north shore auxiliary water supply (AWS) pump #1 was tripped off. Upon further investigation, he discovered that the north shore fish entrance (NEW-1) weir gate was raised approximately 6' above tailwater level, with water from the channel spilling over the gate. There was no power to operate NEW-1 gate. The operator shut off the other operating north shore AWS pump (#3), since NEW-1 gate was closed. An electrician reset the overloads to restore power. The operator shifted all the spill (approximately 8 kcfs) over to bay #10 from about 1030 hours to 1100 hours, and from 1300 hours to 1320 hours. Spill was shifted to bay #10 to raise the tailwater elevation at the north shore to equalize the water pressure against NEW-1 gate. The operator was able to lower NEW-1 gate back down to sill at 1315 hours. AWS pumps #1 and #3 were restarted at 1330 hours and 1335 hours, respectively.

On August 22 at 0831 hours, the operator noticed that the water regulating weirs in the juvenile fish channel were raised all the way up and the water level in the channel was 0.6' higher than the target elevation (429.3'). The operator switched the weirs to local control and lowered the weirs to bring the water level back to 429.3'. He also found that the mechanical screen cleaner did not function. At approximately 1030 hours, the operator observed that the emergency closure gate (TG-1) at the start of the juvenile fish bypass flume was part-way closed to an opening of 12". TG-1 had automatically shut part way in response to the high water in the channel to prevent water and fish from overtopping the flume. The operator returned TG-1 to the fully open position. At 1720 hours an electrician restored the control system for the juvenile fish channel back to normal automatic operation.

The cause(s) of the malfunctions of NEW-1 gate, the water regulating weirs, and mechanical screen cleaner are under investigation. There is speculation that a power outage may have occurred on or just prior to June 21 causing problems with the automated control systems for this equipment.

NEW-1 gate was observed to be down on sill during a fishway inspection conducted on the morning of August 20. The water level in the juvenile fish channel and the operation of the mechanical screen cleaner were also inspected at that time and found to be normal.

On August 21, 244 adult Chinook, 35 jack chinook, 91 adult steelhead, and 7 adult sockeye were observed passing the count windows at Ice Harbor Dam. These fish were most likely delayed in finding a fish ladder entrance if they were approaching the dam along the north shore. The south fish ladder was open for fish passage during this time. Most of the fish counted on August 21 used the south fish ladder, as would be expected.

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