

MEMORANDUM FOR THE RECORD - 19 IHR 15

SUBJECT: North shore fishway entrance malfunction

On the night of July 30, the powerhouse operator noticed that the top of the north shore fishway entrance weir (NEW-1) was approximately 6' out of the water. The PLC that controls the weir apparently malfunctioned, causing NEW-1 to raise out of the water. The operator attempted to lower NEW-1, but the weir did not respond. This blocked the entrance and prevented upstream-migrating adult fish from entering the fishway. The next day, the north shore auxiliary water supply (AWS) pumps were turned off to take the water pressure off of NEW-1, but the weir could still not be lowered. On August 1, the upper diffuser valve was shut off to further reduce the pressure on the weir, to no avail. Mechanics were able to further raise NEW-1 with the hoist machinery, but there was a lot of resistance to free movement in the weir guide slot. The metal guide slot may have gotten bent or the weir rollers may be damaged. The weir and guide slot will need to be inspected from a boat or with divers to properly assess the problem. These activities can be safely accomplished after spill season is over.

On August 1, NEW-2 (the adjacent fish entrance that is normally closed) was lowered down to sill for fish passage by releasing the brakes and letting the weir slowly drop. The north shore AWS pumps and upper diffuser valve were turned back on at 1659 hours on August 1. NEW-2 does not currently operate electrically, so the weir elevation cannot be easily changed. With the lower tailwater levels expected for the rest of the year, having NEW-2 on sill should result in meeting head criteria at the entrance. NEW-2 is not the preferred entrance for fish passage, but will be used until NEW-1 is repaired.

The table below shows that adult fish counts through the north fishway was generally low from July 27 to July 30, before the problem with the north shore entrance occurred. After NEW-2 was opened on August 1, low fish passage numbers up the north fishway resumed. Fish that were migrating upstream along the north shore likely had their passage delayed while the north fishway entrance was closed, but could still use the south fishway to pass the dam. More fish are typically using the south fishway, as shown in the table.

Number of adult fish passing the Ice Harbor fishway count windows (data from DART)

Date	Chinook		Jack Chinook		Steelhead		Sockeye		Lamprey	
	South	North	South	North	South	North	South	North	South	north
7/27/19	25	0	2	0	63	1	3	1	6	0
7/28/19	28	0	2	0	42	-1	-1	2	3	1
7/29/19	22	10	9	0	44	13	3	0	2	0
7/30/19	12	10	3	2	49	5	4	1	11	0
7/31/19	32	0	12	0	44	0	3	0	4	0
8/1/19	25	0	3	0	64	0	4	0	0	0
8/2/19	28	11	0	0	28	11	3	0	3	0
8/3/19	31	1	2	0	42	1	1	0	3	-1
8/4/19	15	8	5	0	42	6	0	0	2	0
8/5/19	13	4	4	1	29	12	2	0	2	0

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