

MEMORANDUM FOR THE RECORD: 24 LGS 04: Potential Noise Above Fish Ladder Exit

SUBJECT: Mechanical crew modification to fish ladder cooling pump casing, new pump installation preparations

Background

Resultant of 23 LGS 09, “Fish Ladder Cooling Pump (FLCP) Failure” the newly arrived submersible replacement pump is currently staged and being prepared for installation. Prior modification requirements initiated by Little Goose Technical Engineering staff are necessary to mitigate repeat electrical harness design flaw and failure as additional preparation measures. The FLCP column is located within the 100 ft. construction noise buffer, positioned directly above and adjacent to the Adult Fish Ladder Exit.

A small section of the Fish Ladder Cooling Pump (FLCP) column was cut out to allow for installation of an electrical harness support device to improve the mounting system. A portaband saw was chosen in lieu of angle grinder and drill, emitting the lesser amount of 75 – 80 dB at the source, and was utilized from 1200 to 1330 hours on May 23. Engineering Tech personnel estimate the maximum sound level at 80 dB at the point of generation, approximately 15 feet above the forebay surface. The sound may have traveled down the pump column about 15 ft below the surface near the upstream wall. It is surrounded by the cooling pump chimney which continues to 90 ft. in depth and is believed to have prevented most vibrations from reaching active fishways.

- A. Species – Chinook Salmon *Oncorhynchus tshawytscha* and Steelhead *Oncorhynchus mykiss*
- B. Origin – Hatchery and Wild
- C. Length – Various
- D. Marks and tags – Reference Table 1 and Table 2

Table 1: Adult ladder passage counts May 23, 2024, Columbia River DART (https://www.cbr.washington.edu/dart/query/adult_graph_text).

Jack Chinook	Chinook	Clipped Steelhead	Total
226	651	1	878

Table 2: LGS adult ladder PIT tagged fish, 23 May 2024
 (<https://www.ptagis.org/Data/AdultLadders>).

Species	PIT Tag #	Last Ladder Observation
Chinook	3DD.003E2BF678	05/23/2024 12:22.02
Chinook	3DD.DA60FEA	05/23/2024 12:43.21
Chinook	3DD.003E28E8ED	05/23/2024 13:10.13
Chinook	3DD.003D7B08B2	05/23/2024 13:15.59
Chinook	3DD003D9EE717	05/23/2024 13:19.22
Chinook	3DD.003E2BF6CE	5/23/2024 13:48.49
Chinook	3DD.D9AAF03	5/23/2024 14:45.41
Chinook	3DD.003D3FF075	5/23/2024 14:59.41

- E. Marks and Injuries found on carcass – N/A
- F. Cause and Time of Death – N/A
- G. Future and Preventative Measures – To be determined pending design / modification success or failure.



Sincerely,
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