

MEMORANDUM FOR THE RECORD**SUBJECT: 20TDA06 AWS operation procedures after fish unit 1 outage**

On 6/12/20 at 0706, fish unit 1 was forced out of service due to suspected top plate pump failure causing the turbine pit to flood. (Ref 20TDA05 MFR). Target date for F1 return 6/29/20. The emergency AWS was open 6/12/20 AM. Protocol is to check AWS intake differential twice daily due to past history of plugging. Differential on 6/12 and 6/13/20 was 0'. On 6/17/20, differential was found at 1.0'. On 6/18/20 AM differential was found at 1.5'. The AWS operation manual calls for 12 hour closure when >2' differential. However to reduce impact to fish passage, some modifications were made. Preparations were made to close of the AWS to float off debris beginning 2000hr 6/18/20 and reopen AWS at 0400hr 6/19/20, for a total closure time of 8 hours. Since AWS is a new operation, the manual procedures are open to modification. Procedure changes will be developed after further analysis. Depending on what we learn, these operations will be requested as a change to the Fish Passage Plan.

- A. Species – Adult Salmonids, Adult lamprey
- B. Origin – Columbia and Snake rivers
- C. Length – NA
- D. Marks and tags – NA
- E. Marks and Injuries found on carcass – NA
- F. Cause and Time of Death – No observed mortality
- G. Future and Preventative Measures – Procedure development for inclusion in Fish Passage Plan

***Update 6/18:** The AWS was closed 1200 6/18 and reopened 0400 6/19. Time was reduced to check effectiveness. Differential was successfully reduced to near 0'. Differential has since been slowly increasing and now at 0.8' on 6/22.*

***Update 6/23:** Differential has increased to 2' the morning of 6/23. We plan to continue operation until midnight tonight, then close until 0400 tomorrow. If differential increases to 3' between now and then, it will be shut down immediately for at least 4 hours, likely until 0400 tomorrow morning.*

Update 6/24: *The differential increased to 2.5' 6/23 at 1500. Shutdown occurred earlier than original midnight plan due to the rate of increase (2100 – 0100). The differential returned to 0' the next morning.*

New development – *a 12' 2x6 board was removed from inside the trash rack. The spacing is only 1" which means there must be a gap between the trash rack pieces. In other words, one trash rack is not seated on top of the other correctly. The gap was not discovered during the Feb ROV inspection and it was likely above water line then. A gap is not visible from deck but the flow pattern observed during the drawdown indicates a potential gap. Fish unit F1 returns to service 6/26. Fisheries staff will try to confirm the trash rack gap next week once the AWS has been turned off.*

Update 6/25: *Fish unit 1 return to service has been delayed until 6/29 (original date). Last nights AWS closure successfully brought differential to 0'. However, 2 more 2x4s were observed inside the trashrack. Due to this issue we are reducing the amount of AWS operation time. AWS will be closed nightly from 2200 to 0400 until 6/29. Nightly entrance trend and AWS differential will continue to be monitored.*

Update 6/29: *The AWS was turned off around 1000 and F1 returned to service.*

Sincerely,
Bob Cordie, Project Fisheries