

**Change Request Number: 11 MCN 001 – SFE and NFE Entrance gates operation – lamprey passage**

**Date:** 4 May 2010

**Proposed by:** NWW Planning and Operations

**Proposed Change:** Operation modification at SFE 1 & 2 and NFE 2 & 3 to accommodate nighttime adult lamprey passage

**TO:**

**2.3.2.2. Fish Passage Period (March 1 through December 31). (See special operations during lamprey passage, June 15 to Sept 30, below)**

- a. Fishway Ladders.** Water depth over weirs: 1' to 1.3'.
- b. Counting Windows.** The minimum counting slot width should be 18". All equipment should be maintained and in good condition. The counting window and backboard should be cleaned as needed to maintain good visibility.
- c. Head on all Fishway Entrances.** Head range: 1' to 2'.
- d. Channel Velocity.** Adult collection channel water velocities must flow between 1.5' and 4' per second. This velocity is optimum criteria for returning adult salmon and steelhead to migrate upstream through the fishway. Velocity readings are completed three times a week and are included in required fishway inspections and reported in the weekly and annual reports.
  1. Surface water velocities will be measured in the open access area near the south shore fish entrance. The surface velocity will be measured using a large piece of woody debris (stick, bark) timed over a marked fixed distance. A Doppler meter location near the same location measures the subsurface flow. The measurement of the water velocity at this location typifies the slowest velocity conditions throughout the length of the channel.
- e. North Shore Entrances (WFE 1 & 2).**
  1. Operate 2 downstream gates.
  2. Weir depth: 8' or greater below tailwater.
- f. North Powerhouse Entrances (NFE 2 & 3).**
  1. Operate 2 downstream gates.
  2. Weir depth: 9' or greater below tailwater.
- g. Floating Orifice Gates.** Operate 12 floating orifices (O.G. numbers 1, 3, 4, 8,

14, 21, 26, 32, 37, 41, 43, and 44).

**h. South Shore Entrances (SFE 1 & 2).**

1. Operate 2 entrances.
2. Weir depth: 9' or greater below tailwater.

**i. Head on Trashracks.**

1. Maximum head of 0.5' on ladder exits.
2. Maximum head on picketed leads shall be 0.5'. Normal head differential on clean leads is 0.3'.
3. Trashracks and picketed leads installed correctly.

**j. Lamprey passage season June 15 to September 30 modifications with removal of the of the stationary section of the segmental gate.**

1. Implement the following nighttime segmental gate operations between 2100 hours to 0400 hours:
  - a. Lower the SFE 1 & 2 entrance weir to the lowest elevation (243 fmsl)
  - b. Lower the NFE 2 & 3 entrance weir to the lowest elevation (243 fmsl).
2. Daytime operations between 0400 hours and 2100 hours:
  - a. Extend telescoping segmental gates SFE 1 & 2 and NFE 2 & 3 depth: 9' or greater below tailwater.
  - b. Maintain tail water and channel differential of 1.0 to 2.0'

**Reason for Change:**The Walla Walla District Corps of Engineers would like to provide a reduced nighttime entrance velocity operation the McNary Dam Oregon Shore Fish Ladder during the Adult Pacific Lamprey run this summer and fall. This operation is anticipated to aid Pacific Lamprey ladder entrance efficiency at McNary Dam. We have developed a 2 year study to determine the effectiveness of this operation. randomized block design that will alternate between normal operations ('control' nights) and nights when entrance weir gates are lowered ('treatment' nights). 2010 will be the 2<sup>nd</sup> study year . Biological effects will be evaluated by comparing dam counts (day and night) between treatment periods during the run to monitor for evidence of impeded passage. A blocked ANOVA will statistically test for differences in daily

passage at the end of the season. If substantial and consistent declines in passage are observed in day or night counts during treatment periods, the experiment will be terminated.

**Comments from others:**

**Record of Final Action:** Approved at the May 2010 FPOM meeting