# Fish Passage Plan (FPP) Change Request Form

**Change Form # & Title**: 17LWG001 – Operation of forebay exit pool cooling pumps

**Date Submitted**: 5/12/2016; Revised 5/16/2016; Revised 1/26/2017

**Project**: LWG

**Requester Name, Agency**: Ann Setter, Corps NWW

**Final Action:** **APPROVED as Revised 1/26/2017**

**FPP Section**: LWG 2.4.2. Adult Facilities – Fish Passage Season (Mar 1-Dec 31). Add new section “2.4.2.14. Adult Fish Ladder Exit Pool Cooling Pumps”.

**Justification for Change**: Need guidance on how and when to operate new piece of infrastructure to facilitate water cooling for adult fish ladder operation during warm summer weather.

**Proposed Change**: Add new section 2.4.2.14.

**2.4.2.14. Adult Fish Ladder Exit Pool Cooling Pumps.** Operate forebay exit pool cooling pumps that spray upstream of fish ladder exit to enhance adult fish passage exiting the adult ladder; and to supplement cooler water throughout the adult fish ladder. The water supply for the manifold at the exit pool originates from AUX pumps 1 and 2 drawing from elevation 667.00’ in the forebay, which is 66 feet below MOP. This action requires both pumps to be operational at the same time for optimal cooling.

1. Begin operation of exit pool cooling pumps when the Lower Granite fish ladder exit pool records water temperatures at or above 68°F. Exit pool water temperature reports may be found at: http://www.nwd-wc.usace.army.mil/dd/nww/fl\_temps
2. Continue this operation until water temperatures recorded at the forebay temperature string for Lower Granite at 0.5M depth and the exit pool temps are below 68°F for three consecutive days. Forebay temperature string reports may be found at: http://www.nwd-wc.usace.army.mil/ftppub/water\_quality/tempstrings/
3. At that time, discontinue the operation until such time that conditions for operation are again met.
4. The pumps may be turned on or off at the Project Biologist’s discretion if adult passage delays are observed either in the forebay or within the ladder, and operation of the pumps is believed to influence the adult passage issue.

**Comments (listed oldest to newest)**:

5/12/16 FPOM: Lorz requested adding criteria to turn on the pumps if adult blockage is noted. Conder requested adding criteria to turn off pumps when the exit pool is also below 68°F.

5/16/16 email from Ann Setter to FPOM: Per comments received at FPOM meeting on May 12, 2016, the attached FPP change form has been modified. Please review the iv. paragraph as it was broadened slightly from the specific comments. Thanks. Please let me know if you have any further comment by May 20th, at which time this will become final.

7/14/16 FPOM: Hevlin recommended criteria be reconsidered/simplified. This year, the pumps were turned on before these criteria were met and fallback rates are lower. Maybe just pick a date to turn the pumps on and leave on.

8/11/16 FPOM: Setter clarified that this change form will be revisited in January 2017 with results from monitoring this year and Pinney reports. ON HOLD UNTIL JANUARY 2017

1/26/17 FPOM FPP: FPOM is ok with this for now, but will revise later if needed based on observations and/or study results. Revised to add “…at Project Biologist’s discretion…”.

**Record of Final Action**: APPROVED at FPOM FPP meeting 1/26/2017