

Project Name	2015 Mayfield downstream fish passage survival study
Date Proposal Submitted	4/28/2015
Date of Requested Decision	6/2/2015
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FTC Decision and Justification

Approved based on information provided. An updated fish health study plan will be provided to the FTC.

Proposed Decision or Consideration

Tacoma recommends focusing on Chinook juveniles in 2015. The 2015 work plan will repeat the 2014 study approach of 250 acoustic tags, and will substitute passive integrated transponder (PIT) tags for visible implant elastomer (VIE) tags, and add an additional tailrace hydrophone. Three variables will be studied; baseline conditions, all four attraction pumps on, routine secondary separator drawdowns. In addition, a systematic survey of the juvenile Chinook fish health will be conducted.

Background

Results from the 2014 Mayfield downstream migrant study showed a high survival for steelhead smolts (98.4%), an intermediate survival of coho smolts (79.8%) and low survival (27.9%) and poor condition factor of the Chinook outmigrants. Chinook mortality (~48%) and delay (up to 7 days) was most substantial in the reach including the secondary separator. A key study assumption in 2014 was violated – unequal detectability of the VIE tags. Delay of coho smolts in the vicinity of the Barrier Dam was demonstrated in both 2013 and again in 2014. Delay (2 days) and reduced survival (92%) was also shown between the counting house and the tailrace for coho. However, lower than anticipated tailrace detection efficiency (87% - 94%) may have contributed to reduced survival estimates.

Coordination Need

Tacoma Power will work with Hydroacoustic Technology, Inc. to develop the 2015 study plan to; 1) substitute PIT tags for visible implant elastomer (VIE) tags; 2) add an additional tailrace hydrophone in order to increase detection efficiency; 3) address any study bias and continue to focus on the juvenile bypass system (JBS); 4) continue to test tag battery life; and 5) continue with single release and paired releases of acoustic tags in the outmigrants.

Summary of Potential Impacts

A new style of passive tags (i.e., PIT tags) will be needed. Study costs may increase. Acoustic tag paired release model results will be paired across three secondary separator operations in order to achieve statistical rigor of 2014.