

Project Name	2014 Cowlitz Falls Dam Fish Collection Efficiency Studies
Date Proposal Summited	12/28/2013
Date of Requested Decision	01/07/2014
Completed By	Matt Bleich

FTC Decision and Justification
<p>Decision: The FTC approved Tacoma proposal. This affects the 62% of the run that migrates during this period.</p> <p>The FTC is comfortable with making this decision based on the following rationale:</p> <ul style="list-style-type: none"> • Chinook collection will already be poor without a weir box. • We need to test the weir box. • We will have the Upper Riffe Collector (prototype) in place as back-up collection. • We are in the beginning stages of a reintroduction program in the upper basin and the population is not self sustaining at this time.

Proposed Decision or Consideration
<p>Tacoma Power requests FTC consideration and concurrence with the following recommendation:</p> <p>Tacoma requests that both the weir box and existing flumes remain operational from July 8 – August 10, 2014 which would preclude the opportunity for conducting blocked studies.</p>

Background
<p>In 2014, Lewis County PUD (LCPUD) will be conducting dam passage survival studies during the steelhead and Chinook juvenile outmigration period. Additionally, LCPUD will conduct unit maintenance at Unit 2 beginning during the second week of August. As a result, the unit running the weir box will only be available for operation during the 2014 study season from July 8 – August 10 (5 week study window).</p> <p>Originally, Tacoma considered a blocked study design to provide bulk flow attraction to the existing flumes during the testing period that the weir box is in operation in the case that 2014 Chinook perform as poorly as 2013 steelhead and coho did with weir box FCE (15.5% and 4.2%, respectively) (Tacoma Power 2013 draft). However, even with this poor weir box efficiency, the overall FCE in 2013 was 48.9 and 70.5% for steelhead and coho PIT tagged fish.</p> <p>It is assumed that even without bulk attraction flow through Unit 1 and the existing flumes open some additional fish guidance will be attained during weir box operation. In order to provide a valid study period for the weir box during a Chinook outmigration season, Tacoma requests that both the weir box and existing flumes remain operational from July 8 – August 10, 2014.</p>

Coordination Need

- Tacoma will coordinate with BPA, and CFFF staff to mark Chinook in groups of 100 for each VIE, and PIT tagged fish 1 week prior to each of the 5 weeks of operation. Recaptured fish will be used to estimate FCE and results will be compared to weir box effectiveness across operation and environmental conditions.
- Radio tagged fish will be released concurrent to PIT tagged fish to qualitatively evaluate retention efficiency, entrance efficiency and discovery efficiency near the weir box. Radio tag equipment will need to be deployed near on the LCPUD dam site in the same locations as in 2013.
- Under this request block flow operations between Unit 1 and Unit 2 would not be required; however, Unit 2 coordination will be required during weir box installation on July 8.
- FTC members are requested to approve of the study plan which does not account for blocked operation between Units 1 and 2.

Summary of Potential Impacts

During the Chinook outmigration period July 8 – August 10 represents approximately 62% of the run. Spring and fall Chinook are not clearly distinguishable morphologically; however, it is likely the July – August outmigration is comprised of spring outmigrants. Fall Chinook are designated as a stabilizing population while spring Chinook are characterize as a primary population.

The anticipated effect of operating both the weir box and existing flumes during this period of the Chinook outmigration is that bulk flow will be drawn to the turbine which drives the weir box. If the weir box proves ineffective this may put a higher ratio of outmigrants at risk for turbine passage. However, during 2013 it was demonstrated that the existing flumes provided an effective secondary route of passage even when the weir box was not effective.

An additional risk, may be that outmigrating Chinook delay in the forbay of Cowlitz Falls Dam due to finding neither the existing flumes or weir box a desirable outmigration collection route. This could result in delay until the weir box is removed on August 10, expression of alternate life history patterns (i.e. overwintering, etc), or additional risk to mortality in the reservoir.