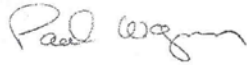


# SYSTEM OPERATIONAL REQUEST: #2012-1

*The following State, Federal, and Tribal Salmon Managers have participated in the preparation and support this SOR: National Marine Fisheries Service, US Fish and Wildlife Service, Nez Perce Tribe, the Columbia River Inter-Tribal Fish Commission, Washington Department of Fish and Wildlife, and the Idaho Department of Fish and Game.*

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**FROM:** Paul Wagner, FPAC Chair

**DATE:** April 13<sup>th</sup>, 2012

**SUBJECT:** Bonneville Operation over next Five Days to Facilitate Spring Creek Release

**OBJECTIVE:** To improve the survival of Subyearling Chinook Salmon at Bonneville Dam over the next five-day period.

## **SPECIFICATIONS:**

Beginning immediately and maintaining for duration of five days:

- i. Operate Powerhouse Two at the mid-point of the 1% best efficiency range. With all available units operational, at the above operational ranges, this would be the powerhouse capacity over the next five days; any flows above this powerhouse capacity would be spilled.
- ii. If powerhouse capacity is reached with the above operational criteria, and spill amounts lead to TDG exceedences below Bonneville Dam, then operate Powerhouse One at Open

Geometry outside of the 1% best efficiency range, while maintaining operations at Powerhouse Two at the mid-point of the of 1% range.

**JUSTIFICATION:**

Spring Creek National Fish Hatchery (Spring Creek NFH), located upstream of Bonneville Dam on the Columbia River, annually produces tule fall Chinook (*Oncorhynchus tshawytscha*) that are released in the spring of each year as subyearlings. Although Spring Creek NFH Chinook salmon are listed under the Endangered Species Act (ESA) as part of the Lower Columbia River Chinook ESU, they are deemed not necessary for recovery and therefore are available for harvest. Spring Creek NFH tule salmon are important components of Columbia River treaty Indian and non Indian sport and commercial fisheries. Every additional adult salmon available for tribal harvest is critical from a tribal use and cultural perspective. Tribal members are dependent on these salmon for ceremonial and subsistence uses. These fish are also part of the U.S.-Canada treaty production and provide a significant benefit for West Coast fisheries. This includes Canada, Alaska, Oregon and Washington.

On Wednesday, April 11<sup>th</sup>, 2012 the Spring Creek NFH released approximately 925,000 subyearling fall Chinook tules. These subyearling fall Chinook first arrived at the Bonneville Dam Smolt Monitoring Juvenile Facility at approximately 0040 on April 12, 2012. Since this time, the SMP personnel at Bonneville Dam have been providing updates of mortality for Spring Creek subyearlings during their sub-samples on April 12<sup>th</sup> and April 13<sup>th</sup>.

April 12 (0040) – April 12 (0700) → 1,303 CH0 sampled, 68 mortalities → 5.2% mortality rate  
 April 12 (0700) – April 12 (1200) → 318 CH0 sampled, 56 mortalities → 17.6% mortality rate  
 April 12 (1200) – April 12 (1500) → 105 CH0 sampled, 31 mortalities → 29.5% mortality rate\*  
 \* increased amounts of debris and mortalities observed during this time period was associated with screen cleaning  
 April 12 (1500) – April 13 (0700) → 274 CH0 sampled, 25 mortalities → 9.1% mortality rate

**Table 1.** Estimated passage index and sample mortality of subyearling Chinook over past week from SMP data\*

Date	CH0 Passage Index	Sample Mortality (%)
Apr 6	3,117	12.6
Apr 7	3,375	4.2
Apr 8	2,700	6.7
Apr 9	1,219	3.4
Apr 10	2,170	2.0
Apr 11	3,446	2.1
Apr 12	104,842	5.6
Apr 13	73,614	15.2

\*Prior to April 12<sup>th</sup>, samples of subyearling Chinook at Bonneville Dam were mostly of Chinook fry (98-100%).

On April 13, 2012, Spring Creek NFH released approximately 5.25 million subyearling fall Chinook tules and Little White Salmon NFH released approximately 1.6 million subyearling fall Chinook tules. Juveniles from Spring Creek NFH typically arrive at Bonneville Dam within 12-24 hours of release.

The 1% efficiency range for turbine operations during the fish passage season at all projects was selected based on fish condition sampling showing low injury and mortality of collected fish in this operation range. Under the original gateway construction conditions, the operation of Powerhouse Two Units within the 1% Efficiency range was consistent with other projects of resulting in low injury and mortality. However, in recent years, the gateway environment at Powerhouse Two has changed. Based on observations of turbine operations and fish condition sampling, it appears the operating range at Bonneville Powerhouse two that results in BiOp anticipated low injury and mortality for subyearling fish is now in the low to Mid-Point of the 1% Range. The Salmon Managers recommend that Powerhouse Two operate at the Mid-Point of the 1% Range for the five day duration of this request. If additional powerhouse capacity is not needed, Powerhouse One should be operated within its typical 1% range. However, if additional powerhouse capacity is needed to reduce TDG below Bonneville Dam, Powerhouse One operations can be modified to the Open Geometry outside of the 1% range.