

## **SYSTEM OPERATIONAL REQUEST: #2001-2**

- *The following State and Federal Salmon Managers have participated in the preparation and support this SOR: Oregon Department of Fish & Wildlife\*, U.S. Fish & Wildlife Service, Columbia River Inter-tribal Fish Commission, Washington Department of Fish and Wildlife and The National Marine Fisheries Service..*

**TO:**

<b>Brigadier General Strock</b>	<b>COE-NPD</b>
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<b>Cindy Henriksen</b>	<b>COE-RCC</b>
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**FROM:** **Christine Mallette, Chairperson, Salmon Managers**

**DATE:** **March 2, 2001**

**SUBJECT:** **Spill and Flow at Bonneville Dam for the Spring Creek Hatchery Release**

**SPECIFICATIONS:** The Salmon Managers are requesting the following fishery operations at the Bonneville Project for up to ten days (beginning March 9) following the March 8 Spring Creek Hatchery tule fall chinook release:

1. No operation of unscreened units at Bonneville powerhouse I or II and follow the turbine operating priority in the Fish Passage Plan;
2. Operate Powerhouse II as first priority. Fully load PH II before operating PH I;
3. Spill 55 Kcfs or up to the 120% total dissolved gas level as measured at the Warrendale monitor), assuming a minimum tailwater elevation of 11.5 feet 24 hours a day, while maintaining a level of 105 % TDG (factored for depth compensation) at the Ives gage 3 (highest submerged redd at 11.5 feet tailwater).
4. Operate Bonneville II ice and trash sluiceway;
5. Operate turbine units within 1% of peak efficiency;
6. Operate juvenile and adult facilities according to criteria;
7. These operations are to begin at 2000 hours on March 9, 2001 and continue up to 2000 hours on March 19, 2001.

### **JUSTIFICATION:**

Spring Creek Hatchery is scheduled to release 5.25 million tule fall chinook on the morning of March 8, 2001. An additional release of this stock will occur during the spring migration season.

The overall importance of this stock has been previously documented and recently reported in the Oregon Department of Environmental Quality request for a total dissolved gas waiver. The Spring Creek Hatchery fall chinook are an important buffer to ESA listed stocks present in ocean and Columbia River mixed stock fisheries.

The current performance of the Bonneville Project is significantly below fish passage standards. Therefore, spill is necessary to begin to achieve fish passage standards. Spill at Bonneville is also the safest route available for downstream migrating juvenile salmonids. Few adult migrants will be present during the time period associated with this spill. Furthermore, recent studies of radio tagged adult chinook salmon have shown that spill up to the dissolved gas limit has little potential to increase fallback. In addition, these studies have shown that some of the adult fish that fall back initially migrate well past Bonneville Dam and its hydraulic effects before turning around and falling back past the project. These fish, which may fall back, need a safe passage route. Spill is presently the safest route for an adult fish to fall back past Bonneville Dam. By prioritizing PH II we expect to minimize usage of the Bradford Island adult ladder, which contributes the highest percentage of fall back.

In order to protect the most sensitive developmental stages of juvenile fall chinook and chum salmon that are incubating downstream from Bonneville Dam in the Ives/Pierce Islands area, the total dissolved gas supersaturation levels over the redds should not exceed 105%. At the same time, the fishery agencies and tribes wish to provide some spill protection for the Spring Creek Hatchery release. Because of poor adult returns last year, the Spring Creek Hatchery release this year is only two-thirds of the usual production. To ensure the protection of juvenile fall chinook and chum salmon, while providing some protection for the Spring Creek Hatchery release, spill should be maintained at 55 Kcfs minimum. Given the current operations of maintaining a minimum tailwater elevation of 11.5 ft. (and the associated flows needed to maintain that elevation), we estimate the spill of 55 Kcfs will produce a total dissolved gas supersaturation level at, or below, the 105% TDG for the highest observed submerged redd in the tailwater. The flow from PH II is preferred because it provides a buffer between the more highly saturated spillway flow and the Washington shore, where the Ives/Pierce Islands area is located.

These lesser spill conditions are being requested this year recognizing the present power situation and reservoir conditions. If this year were different we would be requesting an increase in flow at Bonneville Dam sufficient to provide adequate depth compensation at the downstream redds to allow for full 120% TDG spill volumes.

In past years the Action Agencies have made the decision to terminate spill early regardless of the fishery agency recommendations to the contrary. Because these recommended measures are considerably less than adequate, it is critical that the requested spill should be provided for up to the full ten-day period this year. The option to increase spill (or decrease if necessary) above the 55 Kcfs, based on the in-season observed TDG levels over the redds is retained. If this SOR can not be implemented as requested, please provide a written response to the Fish Passage Advisory Committee documenting the rationale for the actions taken.

\*The Oregon support for this SOR is dependent on Bonneville Power Administration's determination that the requested operation will not undermine BPA's financial solvency and ability to implement biological fish protection measures (e.g., spill) for listed fish later in the migration season.