

SYSTEM OPERATIONAL REQUEST: #2000-3

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

TO: **Brigadier General Strock** **COE-NPD**
 William Branch **COE-Water Management**
 Cindy Henriksen **COE-RCC**
 Doug Arndt **COE-P**
 Col. Randall J. Butler **COE-Portland District**
 Lieut. Col. W.E. Bulen, Jr. **COE-Walla Walla District**
 J. William McDonald **USBR-Boise Regional Director**
 Judith Johansen **BPA-Administrator**
 Greg Delwiche **BPA-PG-5**

Marv Yoshinaka

FROM: **Marv Yoshinaka, Chairperson, Salmon Managers**

DATE: **February 29, 2000**

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 the ten-day period (March 9-18) following the March 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 up to the 120% total dissolved gas level 24 hours a day (as measured at the Warrendale monitor) while maintaining a level of 105 TDG (factored for depth compensation) at the Ives gage 2.
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. The calculated volume of flow to provide depth compensation to the highest observed redd is a flow at Bonneville of 265 kcfs. This level of flow is in excess of the levels forecasted by the action agencies for this period. Providing this volume of flow for the full 10 days given current reservoir levels may create a conflict with Grand Coulee achieving its upper flood control rule curve by April 10. The action agencies need to take immediate actions to reserve additional quantities of water for fisheries purposes. These actions should include power

purchases and the provision of additional system flexibility by adjustments to upstream flood control and utilization of John Day Reservoir flood control space, to implement the Spring Creek spill program.

8. Flows should be ramped down at a rate of no more than 20 Kcfs/hour to avoid stranding. These operations are to begin at 2000 hours on March 9, 2000 and continue through 2000 hours on March 18, 2000.

JUSTIFICATION:

Spring Creek Hatchery is scheduled to release 8 million tule fall chinook on the morning of March 9, 2000. Additional releases of this stock will occur during the spring and summer 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 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 and 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 PHII we expect to minimize Bradford Island adult ladder, which contributes the highest percentage of fall back.

Warmer than normal winter temperatures have resulted in early development and emergence of chum and fall chinook salmon in the Ives/Pierce Islands complex. In order to protect the most sensitive developmental stages of these fish the total dissolved gas supersaturation levels over the redds should not exceed 105%. At the same time, the fishery agencies and tribes do not wish to diminish the spill protection for the Spring Creek Hatchery release. To assure achievement of both goals flows should be increased to increase the water depth over the redds. The total dissolved gas supersaturation compensation depth can be accomplished by increasing flow at Bonneville Dam during the 10-day period to an instantaneous minimum flow of 265 Kcfs. The Action Agencies should take steps (including the purchasing of energy) now to allow for this increased flow level to accomplish this fishery goal.