SYSTEM OPERATIONAL REQUEST: #2003-02

The following State, Federal, and Tribal Salmon Managers have participated in the preparation and support this SOR: U.S. Fish & Wildlife Service, National Marine Fisheries Service, and the Washington Department of Fish and Wildlife.

TO:	**B. G. Fastabend**	**COE-NWD**
	William Branch	**COE-Water Management**
	Cindy Henriksen	**COE-RCC**
	Witt Anderson	**COE-P**
	Col. Richard Hobernicht	**COE-Portland District**
	LTC Kertis, Jr.	**COE-Walla Walla District**
	J. William McDonald	**USBR-Boise Regional Director**
	Steven Wright	**BPA-Administrator**
	Greg Delwiche	**BPA-PG-5**

FROM: **David A. Wills, Chairperson, Salmon Managers**

DATE: **March 6, 2003**

SPECIFICATIONS: The Salmon Managers listed above are requesting the following fishery operations at the Bonneville Project 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. Operate turbine units within 1% of peak efficiency;

4. Operate juvenile and adult facilities according to criteria;

5. Operate the Bonneville Project to maintain a minimum 13 foot tailwater elevation. Based on estimates by the USFWS, a flow of 140-150 Kcfs is sufficient to allow approximately 50 Kcfs of spill while maintaining a maximum level of 105 % TDG (factored for depth compensation) at the chum redds in the Ives Island complex, and the expected highest elevation (11.5 foot tailwater) chum salmon redds on the Oregon shore;

6. Beginning March 10, monitor sub-samples at the Hamilton Island Juvenile Monitoring Facility (JMF) facility. If sub-sampling at the JMF indicates large numbers of sub-yearling chinook have reached Bonneville Dam before 4 p.m. March 10, contact COE Reservoir Control Center to begin a minimum 13 foot tailwater and spill program at 6 p.m.. Continue spill for a total of 36 hours. If there is no indication of large numbers of sub-yearling chinook present at Bonneville Dam by 4 p.m., then monitor sub-samples prior to 8 a.m. March 11. If sub-samples at the JMF indicate large numbers of sub-yearling chinook have reached Bonneville Dam on or before 8 a.m. on March 11, contact COE Reservoir Control Center to begin the spill program at 10 a.m.

7. At no time is spill to exceed 110% total dissolved gas measured at the downstream Warrendale and Camus/Washougal monitors, as allowed under the dissolved gas standards by the states of Oregon and Washington;

8. We request that the Action Agencies use the flexibility in the system to accomplish this SOR without jeopardizing the April 10th rule curve elevations called for by the Biological Opinion;

JUSTIFICATION:

We recognize that we are entering a water runoff season with a lower than normal (73%) runoff forecast. With this in mind, this SOR is requesting spill, flow, and duration at levels well below that normally requested by the

salmon managers for full protection of the March release group. This SOR represents an option discussed among the Federal fishery managers and Action Agencies, which reflect this year's unique conditions in the Columbia Basin.

Spring Creek Hatchery is scheduled to release 7.5 million tule fall chinook by mid-day March 8, 2003. This represents one-half of the total production for brood year 2002. The overall importance of this stock to ocean and Columbia River commercial, sport and tribal fisheries has been previously documented and recently reported in the requests for a total dissolved gas waivers submitted to the Oregon Department of Environmental Quality and Washington Department of Ecology. The Spring Creek Hatchery fall chinook are an important buffer to ESA listed stocks present in ocean and Columbia River mixed stock fisheries. Current weather forecasts predict a large rain event during the weekend of fish release. By releasing the fish during the weather event, the Action Agencies should have more system flexibility to provide the flow and spill requested. Because of the accelerated growth of the fish, due to the mild winter and warmer temperatures, it is also desirable to release the March group earlier than previously envisioned. Release now would allow the densities of the remaining fish to be reduced, better maintaining hatchery rearing protocols and ultimately better fish health. The release of fish two days before spill begins should allow sufficient transit time to Bonneville Dam so that the spill will be affecting the peak passage of the release.

Spill is necessary to achieve fish passage standards. Spill at Bonneville is 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 fall-back. These studies have also shown that some of the adult fish that fall back initially migrate well past Bonneville Dam 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 and along the Oregon shore across from the Ives/Pierce areas, the total dissolved gas supersaturation levels over the redds should not exceed 105%, when factored for depth compensation. At the same time, the fishery agencies and tribes wish to provide adequate spill protection for the Spring Creek Hatchery release. To ensure the protection of incubating juvenile fall chinook and chum salmon, while providing some protection for the Spring Creek Hatchery release, spill should be provided at approximately 50 Kcfs. We estimate that a spill of approximately 50 Kcfs and a minimum tailwater elevation of 13 feet will produce a total dissolved gas supersaturation level at, or below, 110%. This would mean that the TDG (with depth compensation) for the expected highest elevation (11.5 tailwater) chum redd on the Oregon shore below Bonneville Dam would be below 105%. The flow from PH II is preferred because it provides a buffer between the more highly saturated spillway flow and the Ives/Pierce Islands area on the Washington shore, where most of the chum redds are located. If downstream TDG monitors at Warrendale and Camus/Washougal indicate TDG levels above 110%, spill is to be terminated immediately.

If this SOR cannot be implemented as requested, please provide a written response to the Fish Passage Advisory Committee documenting the rationale for the actions taken.