

SYSTEM OPERATIONAL REQUEST: #2002-1

- *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:	BG Fastabend	COE-NWD
	William Branch	COE-Water Management
	Cindy Henriksen	COE-RCC
	Witt Anderson	COE-P
	Col. Randall J. Butler	COE-Portland District
	LTC Wagenaar	COE-Walla Walla District
	J. William McDonald	USBR-Boise Regional Director
	Steven Wright	BPA-Administrator
	Greg Delwiche	BPA-PG-5

Raymond R. Boyce

FROM: Ron Boyce, Chairperson, Salmon Managers

DATE: March 5, 2002

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 following the March 11 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 PH II ice and trash sluiceway;
4. Operate turbine units within 1% of peak efficiency;
5. Operate juvenile and adult facilities according to criteria;
6. Provide an instantaneous flow of 170 Kcfs. Based on modeling by the USFWS, we estimate that a flow of 170 Kcfs is sufficient to allow approximately 100 Kcfs of spill 24 hours a day, while maintaining a maximum level of 105 % TDG (factored for depth compensation) at the Ives Island gage 3 and the highest elevation chum salmon redd on the Oregon shore.
7. Provide an initial spill level of 80 Kcfs, increasing to 100 Kcfs or more dependent on real-time TDG monitoring. Because of our desire to be conservative and provide maximum protection to the ESA listed chum salmon, we request that spill initially be provided at a level of 80 Kcfs. Spill is to be increased based on real-time TDG measurements collected by the USFWS. The USFWS will notify the project operator beginning the evening of March 11, 2002 if spill levels can be increased while not exceeding 105% TDG factored for depth compensation at the highest elevation chum redd. (At no time is spill to exceed 120% total dissolved gas measured at the Warrendale monitor as allowed under the dissolved gas waiver request to be considered by the Oregon Environmental Quality Commission on March 8.)

8. These operations are to begin at 2000 hours on March 11, 2002. If after five days of flow augmentation and spill operations it has been estimated that at least 85% of the release has passed Bonneville Dam, the operations may be terminated. If less than 85% of the release has passed Bonneville Dam after five days of operations, continue flow augmentation and spill for up to ten days or until an estimated 85% of the release has passed Bonneville Dam.
9. We recognize that based on the past few months' reservoir operations, reservoirs are presently near, or in some cases below, flood control rule curves. We request that the Action Agencies use the remaining flexibility in the system to accomplish this SOR without jeopardizing the April 10th rule curve elevations called for by the Biological Opinion.

JUSTIFICATION:

Spring Creek Hatchery is scheduled to release 7.8 million tule fall chinook on the morning of March 11, 2002. An additional release of this stock will occur during the spring migration season. 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 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 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%. 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 100 Kcfs. We estimate the a spill of approximately 100 Kcfs will produce a total dissolved gas supersaturation level at, or below, the 105% TDG for the highest observed chum redd below Bonneville Dam. 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.

The distribution of chum redds this year is markedly different from past years. As a result, the level of uncertainty in predicting TDG at these new sites is greater and is the reason for adaptively managing spill above the 80 Kcfs level. Spill should be provided above 100 Kcfs if in-season monitoring confirms that TDG of 105% over the redds will not be exceeded. 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.