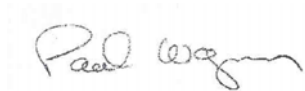


SYSTEM OPERATIONAL REQUEST: #2010-03

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, Washington Department of Fish and Wildlife, Idaho Department of Fish and Game, Oregon Department of Fish and Wildlife, the Shoshone-Bannock Tribes, the Columbia River Inter-Tribal Fish Commission, and the Nez Perce Tribe.

TO:	Brigadier General McMahon	COE-NWD
	James D. Barton	COE-Water Management
	Steven Barton	COE-RCC
	David Poganis	COE-P
	Col. Steven Miles	COE-Portland District
	LTC Michael Farrell	COE-Walla Walla District
	Tim Personius	USBR-Acting Boise Regional Director
	Stephen J. Wright	BPA-Administrator
	Greg Delwiche	BPA-PG-5



FROM: Paul Wagner, Chairperson, Salmon Managers

DATE: June 15th, 2010

SUBJECT: Bonneville Powerhouse Two Unit Operations

SPECIFICATIONS:

As long as debris loads associated with high flows are causing problems with keeping screens cleaned properly at Bonneville Dam, reduce flows through Bonneville Powerhouse Two units to the low to mid range of peak efficiency (approximately 14 Kcfs) and spill the excess water.

JUSTIFICATION:

Juvenile salmonids have recently been seen with elevated instances of descaling and mortality at Bonneville Dam. Attempts to alleviate this problem with more frequent cleaning of the vertical barrier screens (beginning 6/12/10) do not appear to have solved this problem. Table 1 shows

the percent of sampled fish that were descaled at Bonneville between June 8 and June 14. Mortality percentages for smolts sampled at Bonneville between June 8 and June 14 are displayed in Table 2.

Subyearling Chinook currently dominate the sample at Bonneville Dam. Descaling rates for subyearling Chinook have increased from 2.1% to 5.8% between June 12th and June 14th (Table 1). Although Sockeye descaling and mortality are very high, numbers are declining in the samples and passage will likely decrease rapidly over the next week.

The Fish Passage Advisory Committee (FPAC) believes that reducing the flow through Powerhouse Two units to the low to mid range of peak efficiency (approximately 14 Kcfs per unit) will reduce currently elevated rates of descaling and mortality at Bonneville Dam. Recent research by Gilbreath and Gessel suggests that reducing turbine loading improves gate well survival and reduces descaling of juvenile salmonids as they pass through the Bonneville Dam Powerhouse Two gatewells (<http://www.nww.usace.army.mil/planning/ep/fishres/2010-research/preliminary-proposals/bps-p-08-2.pdf>).

The FPAC understands that reduction in flow through the Bonneville Powerhouse Two units will cause spill levels to increase and produce higher Total Dissolved Gas levels below Bonneville Dam. However, gas bubble trauma signs have been minimal even with the recent high flows (<http://www.fpc.org/currentdaily/gbtsum.txt>).

Table 1. Sample descaling percentage by species and date at Bonneville Dam over the past week (June 8 to June 14).

Site	Date	CH0	CH1	CO	SO	ST
BO2	6/8/10	2.0	2.0	3.9	21.3	0.0
	6/9/10	0.0	12.6	6.7	18.9	2.9
	6/10/10	1.7	5.1	9.4	13.8	0.0
	6/11/10	3.5	6.1	10.5	27.3	3.5
	6/12/10	2.1	17.4	4.6	28.3	2.2
	6/13/10	4.4	13.9	6.5	47.5	9.8
	6/14/10	5.8	4.1	4.1	40.0	3.6

Table 2. Sample mortality percentage by species and date at Bonneville Dam over the past week (June 8 to June 14).

Site	Date	CH0	CH1	CO	SO	ST
BO2	6/8/10	3.6	5.7	0.0	7.8	2.2
	6/9/10	5.6	5.6	3.2	9.8	0.0
	6/10/10	0.8	1.7	0.0	9.4	0.0
	6/11/10	1.1	0.0	0.0	15.4	0.0
	6/12/10	2.3	2.1	0.0	13.2	2.1
	6/13/10	1.9	1.4	0.0	10.6	0.0
	6/14/10	1.9	0.0	2.0	7.0	0.0