Change in Spill Operation at Bonneville Dam

2007 Fish Operations Plan (FOP)

The spring spill operation at Bonneville Dam in the FOP is 100 kcfs spill 24 hours/day from April 10 through June 30, 2007. Summer spill operations call for a set daytime spill cap of 75 Kcfs and spill to the TDG spill cap at night from July 1 through August 31, 2007. The Action Agencies have coordinated a change to move the start date for summer spill operations from July 1 to June 21, and to change the daytime summer spill levels. The planned spill during daytime hours will be 85 Kcfs from June 21 through July 15, then go back to 75 Kcfs from July 16 through August 31. Summer spill at night will be to the total dissolved gas (TDG) spill cap.

Change to the FOP

The Action Agencies intend to schedule a one-time spill outage for 4 hours, either in late June or after mid-July, to conduct a hydro survey of the spillway stilling basin. The earlier time frame is preferred - prior to the peak period for subyearling Chinook salmon migration to reduce impacts on fish passage. The Corps is currently working on getting a contractor to conduct the survey. It is expected that the spill outage will occur prior by June 26, 2007.

Rationale for Change

A hydro survey conducted at the Bonneville Dam stilling basin in October 2006 showed approximately 4 to 5 feet of concrete missing from the ogee floor at Bay 9, directly above the downstream drainage gallery. Spill bays 12 and 14 showed similar amounts of missing concrete. This erosion means that there is only about 6 feet of concrete coverage remaining above the gallery. This is a significant engineering concern because of the potential for a sudden, catastrophic failure of the structure and flooding of the gallery.

It is believed the damage to the concrete floor of the ogee is caused by a combination of erosion and cavitation due to plunging flow. There are no methods to accurately compute, estimate or predict rate of concrete loss due to erosion and cavitation. The rate of concrete loss due to cavitation and erosion is unknown, but it is probable that it will accelerate. There is an urgent need to conduct a follow up survey to determine the rate of erosion since the start of spill for fish passage on April 10. Failure of one or more spill bays would result in closing spill bays while emergency repairs are underway. Therefore, the Corps proposes to conduct a multi-beam hydro survey during a shut down of spill for an estimated period of 4 hours on or about June 24, 2007.

Coordination

The Corps coordinated this operation through the Regional Forum Fish Facilities Design Review Working Group (FFDRWG) on June 7, 2007. Representatives from NOAA Fisheries, CRITFC, ODFW, USFWS, and IDFG, and BPA agreed with conducting the survey, which includes the 4 hour spillway outage. Their joint recommendation was to move forward with the survey work but minimize the outage to the extent possible to

reduce impacts to migrating fish. The Corps has coordinated the survey and spill outage with the signatories to the 2007 Agreement and no objections have been raised.