Order Approving the U.S Army Corps of Engineer's Request for a Variance to the State's Total Dissolved Gas Water Quality Standard

BEFORE THE ENVIRONMENTAL QUALITY COMMISSION

In the matter of the U.S. Army Corps of Engineers' request to spill water to assist out-migrating threatened and endangered salmon smolts

ORDER

WHEREAS the Department of Environmental Quality received a request from the U.S. Army Corps of Engineers dated December 23, 2002, to adjust the Total Dissolved Gas Standard as necessary to spill water over McNary, John Day, The Dalles and Bonneville Dams on the Lower Columbia River to assist out-migrating threatened and endangered salmon smolts, for the period from April 1 to August 31; and

WHEREAS the application sought approval for multiple years; and

WHEREAS the public was notified of the request on January 15, 2003, and given the opportunity to provide testimony at 10:00 a.m. on February 19, 2003 and the opportunity to provide written comments until 5:00 p.m. on February 19, 2003; and

WHEREAS the Environmental Quality Commission met on March 11, 2003 and considered the request, justification and public comment.

THEREFORE the Environmental Quality Commission orders as follows

Acting under OAR 340-41-205, 445, 485 and 525(2)(n), the Commission finds that:

(i) failure to act will result in more salmonid passage via hydroelectric dam turbines. Estimated mortalities from fish passing through turbines is between 10 and 15 percent. Fish passing over spillways as a result of spill experience two to three percent mortality;

(ii the balance of risk of impairment to migrating salmonids, resident fish, and other aquatic life due to elevated dissolved gas levels needs to be balanced against migrating juvenile salmonid mortality from turbine passage. Resident fish and aquatic invertebrates in the Columbia River downstream of Bonneville Dam were monitored by NMFS for signs of gas bubble disease in 1993, 1994, 1995, 1996, 1997 and 1998. There was a low incidence of gas bubble disease (less than one percent) in resident fish

examined in 1993 and 1995 while in 1994, 1997 and 1998 none of the fish observed had signs of gas bubble disease. There were no signs of gas bubble disease observed in the aquatic invertebrates examined. Signs of gas bubble disease were prevalent in 1996 but this was a high flow year with large volumes of involuntary spill and total dissolved gas levels above 115 percent in the forebays and 120 percent in the tail races of dams. There is a low incidence of gas bubble disease in migrating juvenile and adult salmonids when the total dissolved gas levels are at or below 115 percent in the dam forebays and 120 percent in the tailraces. The low incidence of gas bubble disease observed has been regarded as a low risk for mortality from gas bubble disease. Total dissolved gas levels of between 130 to 140 percent from involuntary spill, resulted in an increased incidence of gas bubble disease and is regarded as an increased risk of mortality from gas bubble disease. Given the past monitoring of gas bubble disease, the levels requested in this petition seem to be a reasonable balance between increased survival due to reduced turbine mortality and the risk of mortality from gas bubble disease;

(iii) The Corps has submitted a physical monitoring plan. Physical monitoring will be conducted at Camas/Washougal, and the Bonneville Dam forebay and in the forebay and tailraces of McNary, John Day, and The Dalles Dams. Hourly data will be available on the Corps' Internet World Wide Web pages. Implementation of the physical monitoring plan will ensure that data will exist to determine compliance with the standards for the voluntary spill program; and

(iv) The Corps has submitted a biological monitoring plan. Juvenile salmonids will be collected at Bonneville and McNary Dams and examined for signs of gas bubble disease on non-paired fins, eyes, and lateral lines.

2. The Environmental Quality Commission approves a modification to the Total Dissolved Gas standard for spill over McNary, John Day, The Dalles and Bonneville Dams on the Lower Columbia River, subject to the following conditions:

(i) a revised total dissolved gas standard for the Columbia River for the period from midnight on April 1 to midnight on August 31;

(ii) the revised criteria will apply for 2003, 2004, 2005, 2006 and 2007;

(iii) a total dissolved gas standard for the Columbia River of a daily (12 highest hours) average of 115 percent as measured in the forebays of McNary, John Day, The Dalles, and Bonneville Dams and at the Camas/Washougal monitoring stations;

(iv) a cap on total dissolved gas for the Columbia River during the spill program of 120 percent measured in the tailraces of McNary, John Day,

The Dalles, and Bonneville Dams' monitoring stations, based on the highest 12 highest hourly measurements per calendar day; and

(v) a cap on total dissolved gas for the Columbia River during the spill program of 125 percent, based on the highest two hours during the 12 highest hourly measurements per calendar day during these times;

(vi) a requirement that if 15 percent of the juvenile fish examined show signs of gas bubble disease in their non-paired fins where more than 25 percent of the surface area of the fin is occluded by gas bubbles or that contra-indicatory evidence suggests that fish are being harmed, the Director will terminate the variance; and

(vii) a requirement that the Corps provide written notice to the Department within 24 hours of any violations of the conditions in the variance as it relates to voluntary spill. Such notice shall include actions proposed to reduce total dissolved gas levels or the reason(s) for no action;

(viii) no later than December 31 for each year of this variance, the Corps shall provide a written report to the Department detailing the following:

a) flow and runoff descriptions for the spill season;
b) spill quantities and durations;
c) quantities of water spilled for fish versus spill for other reasons for each project;
d) data from the physical and biological monitoring programs, including incidences of gas bubble disease;
e) progress on implementing the measures contained in the Lower Columbia River Total Dissolved Gas TMDL.

(ix) the Corps shall provide the Commission with an annual written report and, if requested the Corps shall appear before the Commission to report on any of the above matters, or such other pertinent matters relating to total dissolved gas as the Commission may determine;

(x) the Commission reserves the right to terminate or modify this variance at any time during its currency.

Dated: 3-14-03

ON BEHALF OF THE COMMISSION

Stephanie Hallock
Director