Spring Spill TDG Test (Revised April 6, 2016 at 10:00am)

Overview

A test of the current Dworshak National Hatchery TDG degassing equipment, under the limited discharge conditions expected during the Unit 3 outage in 2016 and 2017, is planned between April 28th and May 4th, 2016. The test will consist of two 6-hour periods in which discharge from Dworshak will be operated at approximately 115% and 120% TDG while operating Units 1 & 2 only. During the test TDG will be measured in several key locations (downstream of the degassing equipment, in the nursery head tank, and in the raceway supply head boxes). Discharges during the test are expected to be approximately 8.5 kcfs and 9.5 kcfs respectively.

TDG will be measured during the test using Mini-Sonde water quality monitoring probes. The probes are calibrated before deployment at the hatchery per manufactures instructions.

Background

The Corps of Engineers (COE) will be performing a major overhaul of Unit 3 at Dworshak Dam starting on September 1, 2016 and extending until May 1, 2017. During the overhaul Unit 3 will not be available, effectively reducing the powerhouse flow capacity by about 54% (Units 1 and 2 discharge approximately 4.8 kcfs together, while Unit 3 discharge is approximately 5.6 kcfs). The Idaho regulations limit Total Dissolved Gas (TDG) below Dworshak to 110%, except when required for Flood Control operations. The FCRPS BiOp also limits fish operations at Dworshak to the 110% TDG level. TDG production at Dworshak Dam is a function of the discharge method (through hydropower turbines, spillway gates, or release outlets), environmental conditions (air temperature, water temperature, and atmospheric pressure), and dilution.

Of special concern, the Dworshak National Fish Hatchery which pumps most of its water supply from the North Fork of the Clearwater River approximately 1.3 miles below Dworshak Dam. TDG production from Dworshak Dam is measured at the hatchery intake to allow for in-river mixing from the different sources of discharge. High TDG will result in Gas Bubble Trauma (GBT) damage to the fish in the hatchery. Between 2012(?) and 2015 the hatchery degassing equipment was upgraded from packed column to vacuum column degassing, significantly improving the efficiency of the degassing operation.

Proposed Test Schedule

Based on feedback received from the TMT at the meeting on March 30, 2016, the COE is proposing the following schedule of test operations. Outside of these dates/times, Dworshak Dam will operate under normal operating conditions.

- Monday, May 2, 1000 - 1600 hours: operate Dworshak Dam with two small units plus spill to target 115% TDG at the Dworshak tailwater gauge (DWQI).
- Tuesday, May 3, 1000 - 1600 hours: operate Dworshak Dam with two small units plus spill to target 120% TDG at the Dworshak tailwater gauge (DWQI).