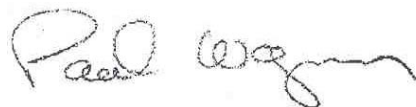


SYSTEM OPERATIONAL REQUEST: #2014-2 Northwest Division, Walla Walla District

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

TO:	Colonel John S. Kem	COE-NWD Commander
	Lt. Col. Timothy R. Vail	COE-NWW Commander
	David Combs	COE-NWD-PDD Chief
	James Barton	COE-NWD-PDW Chief
	Rock Peters	COE-NWD-PDD
	William Proctor	COE-NWD-PDW-RC
	Doug Baus	COE-NWD-PDW-RC
	Karl Kanbergs	COE-NWD-PDW-RC
	Steve Hall	COE-NWW-EC
	Ann Setter	COE-NWW-OD
	Lorri Lee	USBR-PN Regional Director
	John Roache	USBR-PN-6208
	Mary Mellema	USBR-PN-6204
	Elliot Mainzer	BPA Administrator
	Rick Pendergrass	BPA-PG-5
	Lorri Bodi	BPA-KE-4
	Holly Harwood	BPA-PGB
	Robyn MacKay	BPA-PGB
	Tony Norris	BPA-PGPO-5
	Scott Bettin	BPA-KEWR-4
	Agnes Lut	BPA-KEWR-4
	Paul Cloutier	COE-NWD Tribal Liaison
	Donna Turnipseed	COE-NWW Tribal Liaison



FROM: Paul Wagner, FPAC Chair

DATE: August 20, 2014

SUBJECT: 2014 Dworshak Operations

OBJECTIVE: Restore up to 10 kcfs discharge from Dworshak Dam for temperature and flow management, achieving a Dworshak pool elevation of near 1535' by August 31.

JUSTIFICATION: Dworshak unit 3 was forced out of service on August 15 at 1411 hours. Since that time, project outflow has been reduced to approximately 7 kcfs without exceeding the State of Idaho 110% TDG standard, and the project will draft to approximately 1540'–1542' by August 31. Prior to the outage, the planned operation for Dworshak Dam was to discharge approximately 10 kcfs which would draft the project to an elevation of 1535' on August 31. The decrease in cool water discharge from Dworshak has several effects:

- There has been a reduction of cool water from Dworshak entering Lower Granite reservoir which will likely decrease the pool of cool water in the forebay. This cool water pool provides refuge for both juvenile and adult salmon. Emergency pumps have been installed in the forebay to tap into the cool water at 20 meters depth and provide water to the adult ladder and trap at Lower Granite Dam. Successful operation of the trap is a priority of many fisheries agencies. Maintaining emergency rental pump access to the cool water in the forebay is essential for effective operation of the trap and fish ladder.
- The reduction in Dworshak outflow results in up to 3 kcfs reduction in flow in the Lower Snake River which serves as a migration corridor for both juveniles and adults.
- The reduction in flow in the lower Snake River reduces the level of spill at the lower Snake River projects when the projects are operating at minimum generation. Several of the Snake River projects operate a single turbine unit and spill all additional water. Thus a reduction in flow translates into a direct reduction in spill at these projects.

There are limitations to the level of TDG that would be acceptable. The Dworshak hatchery relies on the North Fork Clearwater for much of its water supply. Conversations with the hatchery manager indicate that TDG in the North Fork Clearwater in the range of 115% would likely be manageable. Real-time coordination with the hatchery managers will occur to ensure TDG levels are maintained within an acceptable range.

SPECIFICATIONS: To achieve a discharge of approximately 10 kcfs, the combined operation of turbine and spill would produce up to 120% TDG. Coordination and/or a temporary waiver from the State of Idaho and the Nez Perce Tribe should be pursued by the Corps to exceed the TDG standard of 110%. Coordination with the Dworshak National Fish Hatchery and the Nez Perce Tribe will be needed to assure this operation does not negatively affect their operations.

Information below was provided by the U.S. Army Corps of Engineers for reference:

Comparison of DWR spill to 110% vs. 115% vs. 120% TDG, and resulting reservoir elevation and LWG temperature. *Projections calculated 8/19/14 based on current forecasts and models, and are subject to change as conditions develop.*

1. Maintain current spill to 110% TDG standard (Units 1&2 + spill to 110% = ~7 kcfs outflow):

- a. Achieve 1535' on ~**September 9** (or earlier if Unit 3 returns to service);
- b. Achieve 1520' by September 23 per Dworshak Board Operational Plan;
- c. LWG tailrace temps remain below 68°F;

2. Per SOR, spill to 115% TDG (Units 1&2 + spill to 115% = ~8.5 kcfs outflow):

- a. If started Thurs 8/22 = Achieve 1535' on ~**September 5** (or earlier if Unit 3 returns to service);
- b. Achieve 1520' by September 23 per Dworshak Board Operational Plan;
- c. LWG tailrace temps remain below 68°F;
- d. Estimated reduction of LWG ladder/trap temps: -2°F at 20 meters; not much impact at shallower depths.

3. Per SOR, spill to 120% TDG (Units 1&2 + spill to 120% = ~10 kcfs outflow):

- a. If started Thurs 8/22 = Achieve 1535' on ~**September 3** (or earlier if Unit 3 returns to service);
- b. Achieve 1520' by September 23 per Dworshak Board Operational Plan;
- c. LWG tailrace temps remain below 68°F;
- d. Estimated reduction of LWG ladder/trap temps: -2°F at 20 meters; not much impact at shallower depths.