

**Columbia River Regional Forum  
Water Quality Team Meeting  
August 14, 2007**

**1. Welcome and Introductions**

Today's WQT meeting was co-chaired by Mark Schneider (NOAA) and Agnes Lut (ODEQ) and facilitated by Robin Harkless, with representatives from NOAA, ODEQ, BPA, BOR, LCREP, WDOE and others attending. The following is a summary (not a verbatim transcript) of the topics discussed and decisions made at the meeting. Anyone with questions or comments about these notes should send them to the WQT chair or bring them to the next meeting.

**2. Oregon DEQ Decision Re: Spill Program TDG Waiver**

The COE, USFWS and NOAA submitted a joint waiver request to ODEQ in November 2006, Agnes Lut (ODEQ) said. The request was for a five-year waiver of dissolved gas water quality standards at McNary, The Dalles and John Day dams, allowing 115% in the forebay and 120% in the tailrace year-round. ODEQ has approved a two-year waiver (2008-09) allowing TDG levels of 115% in the forebay and 120% in the tailrace from March 1-10 for the Spring Creek Hatchery release, and again from April 1-August 31 for fish migration operations. The waiver is not year-round, nor does it mention Camas Washougal gage, Lut said. Biological and physical monitoring requirements will remain the same as for previous waivers.

ODEQ also added a clause allowing adaptive management of the forebay and tailrace monitors in the short term until 2010, in the long term from 2010-2020. In 2010, when all operational modifications have come into play, ODEQ will move away from monitoring TDG levels in the forebay and concentrate instead on tailrace conditions. However, ODEQ can't wholly rely on tailrace monitors until they're at their load allocation positions at the edge of the aerated zone. Tailrace monitors at the four lower Columbia dams will therefore need to be moved prior to long-term TMDL implementation. After 2020, the TMDL standard for TDG saturation will be 110% year-round. Lut emphasized that ODEQ will need to know what the timelines are for implementing structural and operational changes that meet this standard.

John Piccininni (BPA) asked, what's the strategy for positioning the monitors before 2010? Adaptive management should begin as soon as possible, in response to the number of public comments ODEQ has received and the level of controversy regarding forebay monitor locations, Lut said. An adaptive management team is being formed and will advise states on forebay and tailrace

issues, beginning possibly in September. The adaptive management team will address forebay issues first, then tailrace issues.

John Gleason (BPA) asked about the public process involved in adaptive management. The team will consist of key decision-makers representing agencies throughout the Columbia basin who are able to make decisions and inform states on TDG issues, Lut said. Membership will be drawn from responses to a letter of solicitation ODEQ is sending to 10 agencies. The area covered by the adaptive management group's decisions will encompass the Columbia River from Grand Coulee to Bonneville Dam, as well as the four lower Snake River dams. Meetings of the adaptive management team will be open to the public, and their comments will be welcomed.

Dan Feil (BPA) asked, in what order should the locations of forebay and tailrace monitors be addressed? The need and locations of forebay monitors should be evaluated first, but the processes will overlap somewhat, Lut said. All of the specifications mentioned in today's general discussion will be specified in a guidance document to be published in future. Lut will provide the WQT with updates on the adaptive management process as it evolves.

### ***3. SCT Ranking of Proposed Water Quality Related CRFM Projects for FY08***

John Kranda (COE) distributed copies of the FY08 CRFM program budget, with individual projects to be ranked by teams composed of federal, state and tribal SCT members. In FY08, two projects – the Little Goose RSW (about \$20 million) and the spillway wall at The Dalles (\$30 million) – will seriously constrain this year's program without a waiver from Congress allowing the COE to spread these costs over FY08 and 09. If these projects must be fully funded in FY08, Kranda estimated that the COE would only be able to fund through about line 18 on this spreadsheet (the Little Goose ASW), or projects that were rated 4.7 or higher. With a Congressional waiver, only \$10 million of each of these large projects would come from the FY08 budget, allowing many more projects to be funded this year.

Water quality-related projects were shaded on the spreadsheet – the Bonneville chum studies and spillway optimization; Ice Harbor deflector modifications; John Day surface bypass study; Little Goose divider wall evaluations and spillway deflectors; RSW biological testing at Lower Granite; RSW biological studies at Lower Monumental; spillway improvements at The Dalles; McNary TSW work, surface bypass work and temperature control; and system studies of adult passage temperature effects and fish ladder temperatures. One-page summaries of these studies are available on request.

Kranda led the WQT through a discussion of the projects that have water quality implications:

This is the final year of chum studies at Bonneville (line 2). It will produce recommendations regarding fish passage season spill levels, as well as a record of spill's effects on chum redds below Bonneville. The spillway optimization at Bonneville (line 7) would continue to look at issues of spill levels and patterns, as well as problems with injuries and mortalities in the Bonneville spillway. Next year, the COE will look at modifications to the Bonneville spillway, which has significant erosion issues. If modifying deflectors or some other measures would help improve fish survival or reduce gas levels with spill, FY08 is the time to take advantage of the opportunity to work on the spillway.

The spillway chute deflector modification at Ice Harbor (line 11) includes review of the RSW bay deflector, with the main concern being injuries and mortalities associated with the spillway. The John Day configuration study (line 17) includes construction of two TSWs for testing on the spillway for a major biological study looking at all options for forebay guidance and improvement of tailrace egress.

The Little Goose RSW (line 18) is actually an adjustable spillway weir or ASW, which allows for varying amounts of flow to accommodate seasonal changes. This is one of the high-cost items the COE is requesting to fund across FY08-09. The Little Goose divider wall evaluation (line 24) involves considering whether a divider wall would improve adult egress through the tailrace. There could be water quality benefits in separating powerhouse and spillway flows. The Little Goose spillway deflectors (line 26) will be handled under the same contract. This project involves adding spill deflectors in bay 1 where the RSW is placed and in bay 8 at the other end of the spillway, where there is no deflector yet. This is an adult passage issue as well as a potential water quality issue, with possible juvenile egress benefits as well.

Continued biological testing at Lower Granite (line 27) is related to spill levels and operations, which have water quality implications. The biological studies of the Lower Monumental RSW (line 35) will look at how the new RSW, to be installed in winter 2008, guides fish and impacts their overall survival.

The three McNary studies (lines 45-47) are all related to surface bypass at McNary, including testing of two TSWs currently in place. The plan is to construct two more TSWs there, making a total of four surface weirs available for testing at McNary in 2008. Other water quality-related action there includes finishing the report on McNary temperature control (line 50). This involves modeling of a pocket of warm water that tends to infiltrate the juvenile bypass system and cause passage problems. Kranda noted this study is also intertwined with the surface configuration studies. Changing the sluiceway openings will alter the dynamics of flows in the forebay, which may help address the temperature problem. The final report on this will be ready in 2008.

The McNary behavioral guidance structure (line 53) involves devices called curtains that help guide fish away from the powerhouse to the spillway or corner collector. This project does not involve spill directly.

The spill wall at The Dalles (line 57) is one of the most important projects on the spreadsheet in terms of water quality, Kranda said. Biological interests in the region have concluded that extending the spill wall at The Dalles is the most effective solution for juvenile passage through the spillway. There have been problems with predators feeding on fish that migrated to the Oregon side, and the spill wall appears to resolve this issue. However, it appears that extending the wall in bays 6 and 7 will constrict the channel such that gas saturation would probably exceed water quality standards when the tailrace is raised. To resolve that problem, the COE is moving the spill wall to bays 8 and 9, giving the spill more room to spread out and keeping TDG levels within standards established under the ODEQ waiver. Shane Scott (NWRP) expressed concern that building a big wall would lock the COE into a spill program that doesn't fit TDG requirements, particularly in light of the 2020 deadline for achieving 110% TDG saturation levels year-round. The issue is whether a lower level of spill would create a lower velocity zone on the Washington side, where there have been problems with predation. Kranda will send Mark Schneider the link to a TDA spill wall design report for distribution to WQT members.

The fish ladder temperature evaluation (line 76) will address an ongoing situation in which warm water temperatures at the top of fish ladders delay movement through the ladder. This evaluation will look at whether pumping cool water from deep in the reservoir into the ladder aids migration.

After trying to plan how to meet the needs of listed species on the Willamette River in the absence of a Bi-Op on the subject, the COE has included it in the budget (line 83) for potential funding in FY08. This project is not specifically TMDL-driven and will need to be melded with that effort.

Piccininni asked whether ongoing projects under the Bi-Op would lose their COE-related funding if they receive a lower ranking. They might have to be deferred for a year, Kranda said. Piccininni expressed concern about what that would do to data trends. BPA will have a problem if the funding is cut from Bi-Op related projects. Even with relief from Congress regarding funding of the contracts for the Little Goose RSW and the spill wall at The Dalles, it won't be possible to fund all of the projects on this list in FY08 because they add up to some \$130 million, Kranda said.

Options for completing essential components of the lower ranked projects would be slowing other projects down and deferring objectives for research studies, Kranda said. He estimated that approximately 25 actions on the spreadsheet that received FY07 funding would not be funded in FY08, as things stand. He told WQT he will be on the lookout for ways to redefine projects so the

most important parts are funded first and other parts are deferred, making it possible for lower priority projects with important components to receive funding.

#### **4. “Effectiveness of a Laboratory-Scale System to Reduce Water Super Saturation” – Summary of July 17 Presentation**

Mark Schneider (NOAA) briefed WQT on a recent presentation by BOR and Johns Hopkins University researchers who have requested comments on a joint proposal to treat TDG supersaturation by introducing very small (100-200 microns) gas bubbles that scavenge dissolved gas from the water. The process works on a bench scale. Whether it could be expanded for use in a hatchery, barge, or river environment is suspect, Schneider said, wondering whether the bubbles would affect fish respiration. Plans are to upscale the treatment to a 10 gallon aquarium and eventually a 1,000 gallon tank.

Schneider distributed copies of the proposal, which is being considered for BOR funding, and requested comments by the end of August. In addition to technical questions and feedback, the BOR is also looking for co-funding from any agency that is interested in pursuing this approach.

#### **5. Next WQT Meeting**

The next WQT meetings are September 11 (subsequently canceled per a September 5 email message from Kathy Ceballos) and October 9. This meeting summary prepared by consultant and writer Pat Vivian.

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|--------------------|---------------------------|
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