

Environmental Quality Commission meeting

Total Dissolved Gas Water Quality Standard Modification for Fish Passage Spill

Action item
Feb. 2, 2015
Portland

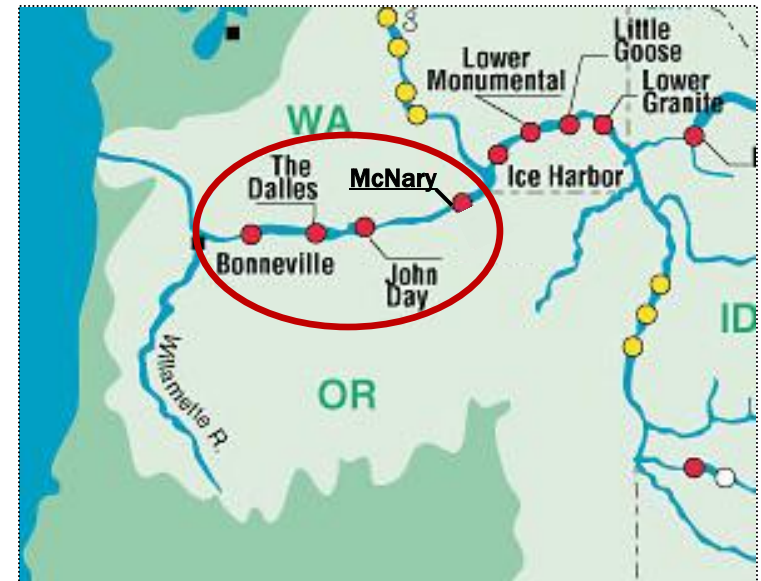
Overview

- Review
 - Spill for juvenile salmonid passage
 - Environmental Quality Commission concerns
- U.S. Army Corps of Engineers request
- Public comment period
- DEQ's findings and recommendation
- EQC action alternatives



Renewal Request

- April 4, 2014, the Corps submitted the modification renewal request
- Most recent EQC order
 - In effect 2010-2014
 - Continuous effect April 1 through August 31, for seasonal juvenile salmonid migration
 - 110% TDG standard modified to 120%
- Renewed EQC order
 - Must be in place by April 2015 for start of seasonal juvenile salmonid migration



Spill for Juvenile Salmonid Passage

John Day Dam – Subyearling Chinook Salmon



Image and data modified from 2013 Comprehensive Evaluation released by

U.S. Army Corps of Engineers, U.S. Bureau of Reclamation and Bonneville Power Administration

Total Maximum Daily Load

- Corps attempted implementation of all structural and operational modifications
- Regulators (EPA, Washington Department of Ecology, and DEQ) and the Corps met July 2014
 - TMDL implementation phase concludes in 2020
 - Options to allow more time for TMDL implementation after 2020
 - Amend the TMDL management plan
 - Revise the TMDL

Voluntary spill

- Affected by EQC order
- Exceedances result from
 - Uncertainties associated with forecasting
 - Sudden changes in environmental conditions

Involuntary spill

- Outside scope of EQC order
- Exceedances result from
 - High runoff flows, hydraulic capacity constraints
 - Temporary water storage
 - Flow passing through turbines
 - Malfunctioning gauges
 - Lack of power demand, “lack of load”

Environmental Quality Commission Concerns

Biological monitoring

- Occurs twice weekly at McNary and John Day dams during voluntary spill period
- Sample size is 100 smolt per day
- Gas bubble trauma monitoring
 - Smolts evaluated for prevalence and severity of GBT
 - Voluntary spill will halt if an action criterion is met
 - Either 15 percent of fish examined show signs of GBT, or
 - Five percent of fish examined show signs of GBT on non-paired fins where more than 25 percent of the surface is occluded by gas bubbles
 - Action criteria are not observed during voluntary spill operations
 - Action criteria developed to prevent mortality due to GBT

Request Details

- 2014 Biological Opinion requirements
 - Standard adjustment allowed by Oregon and Washington
 - Oregon specified 120 percent in tailrace
 - Washington includes 115 percent in forebay
 - Time span of juvenile salmonid migration in lower Columbia River
 - April 10 through August 31
- Period of EQC order is five years, 2015-2019
- Additional access to modification
 - For specific purposes outside of the juvenile migration period
- Reporting
 - Submitting annual report one month later to January 31 deadline
 - Additional time to quality check data

Public Comment Period

- 30-day public comment issued Sept. 10, 2014
- 21-day public comment issued Jan. 5, 2015
- DEQ received six comment letters:
 1. U.S. Environmental Protection Agency
 2. Bonneville Power Administration
 3. Northwest RiverPartners
 4. Pacific Northwest Generating Cooperative Power
 5. Oregon Department of Fish and Wildlife
 6. State, Federal and Tribal Fishery Agencies Joint Technical Staff Memo, signed by:
 - Columbia River Inter-Tribal Fish Commission
 - Oregon Department of Fish and Wildlife
 - Washington Department of Fish and Wildlife
 - U.S. Fish and Wildlife Service
 - Colville Tribe

DEQ's Findings and Recommendation

Requirements of OAR 340-041-0104(3):

a) Failure to act will result in greater harm

- Spill passes approximately 52-88 percent of juvenile salmonids
- Spill has lower mortality rates than turbine passage
- Transport and hatchery releases are less likely to contribute to genetic adaptation to altered conditions
- Smolt transport is associated with greater likelihood of straying

b) Reasonable balance of risk

- 1.1 percent incidence of GBT in juvenile salmonids from 1995 to 2014

c) Adequate data will exist to determine compliance

- Corps provided DEQ with a revised Water Quality Plan

d) Biological monitoring will occur to document protection

- Fish Passage Center will continue monitoring for GBT

DEQ recommends EQC grant request components:

- Five-year order, 2015-2019
- 120 percent tailrace limit
- January 31 annual report deadline

With the following modifications:

- April 1 through August 31 continually effective period
- Allow additional effective periods provided:
 - Seven-day advance notice and approval
 - Physical and biological monitoring will take place
- Include an adaptive management component

DEQ's Findings and Recommendation

DEQ support for five-year order

- Advisory groups
 - Technical Management Team
 - Fish Passage Center advisory committee
- Real time TDG data and modeling used to manage voluntary spill
- Daily, online reporting of physical and biological monitoring
- Annual reporting by Corps, annual review by DEQ
- Safe guards contained in draft order
 - EQC may terminate or modify order at any time
 - DEQ Director will halt spill program if biological monitoring shows critical levels of GBT
- Maximizes resources of entities associated with regulating, monitoring and operating voluntary spill operations

1. Approve request with or without DEQ's recommended modification

- In accordance with OAR 340-041-0140(3), EQC must find:
 - a) Failure to act will result in greater harm
 - b) Reasonable balance of risk
 - c) Adequate data will exist to determine compliance
 - d) Biological monitoring will occur to document protection

2. Decline to approve the request

EQC Discussion and Action

Thank you,

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