

142 FERC ¶ 62,244
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Public Utility District No. 1 of
Douglas County, Washington

Project Nos. 2149-156

ORDER APPROVING 2013 TOTAL DISSOLVED GAS ABATEMENT PLAN
AND 2013 BYPASS OPERATING PLAN

(March 25, 2013)

1. On February 22, 2013, Public Utility District No. 1 of Douglas County, Washington (licensee) filed its 2013 total dissolved gas abatement plan and 2013 bypass operating plan pursuant to article 401(a) of the license for the Wells Hydroelectric Project No. 2149.¹ The project is located on the Columbia River in Douglas, Okanogan, and Chelan counties, Washington. The project occupies 8.60 acres of land administered by the U.S. Department of the Interior and 6.55 acres of land administered by the U.S. Army Corps of Engineers.

BACKGROUND AND LICENSE REQUIREMENTS

2. Various conditions of the license require the licensee to prepare and implement specific plans without prior Federal Energy Regulatory Commission (Commission) approval. The plans are to be developed in consultation with various entities and be approved by the Washington State Department of Ecology (Ecology) or the U.S. Department of the Interior or the National Marine Fisheries Service (NMFS). Article 401(a) requires that each such plan also be submitted to the Commission for approval.

2013 Total Dissolved Gas Abatement Plan

3. Article 401(a) requires the licensee to annually prepare a total dissolved gas abatement plan (GAP), pursuant to Ecology's section 401 Water Quality Certification (WQC) Condition No. 6.7(2)(a) and NMFS's Incidental Take Statement Term and Condition No. 2. The GAP is to be developed in consultation with the parties to the Aquatic Settlement Agreement and Habitat Conservation Plan (HCP), including Ecology, NMFS, the U.S. Fish and Wildlife Service (FWS), U.S. Bureau of Land Management

¹ Order Issuing New License issued November 9, 2012 (141 FERC ¶ 62,104).

(BLM), Washington State Department of Fish and Wildlife (WDFW), the Confederated Tribes of the Colville Reservation (CCT), and the Confederated Tribes and the Bands of the Yakama Nation (YN). The GAP is to provide details on operational and structural measures to be implemented by the licensee and is intended to result in compliance with the Washington State water quality standards for allowable total dissolved gas (TDG). The 2013 GAP was approved by Ecology and NMFS.

2013 Bypass Operating Plan

4. Article 401(a) requires the licensee to annually prepare a bypass operating plan (BOP), pursuant to Ecology's section 401 WQC Condition No. 6.7(2)(d) and NMFS's Incidental Take Statement Term and Condition No. 2. The BOP is to provide for the safe outmigration during the spring and summer for naturally produced juvenile salmonids spawned above Wells Dam. The HCP requires the licensee to submit the BOP to the HCP Coordinating Committee for review and approval. The 2013 BOP was approved by the HCP Coordinating Committee, which includes NMFS.

Total Dissolved Gas Abatement Plan/Bypass Operating Plan Coordination

5. Article 401(a) requires the licensee to annually coordinate the GAP and the BOP with the Aquatic Settlement Work Group, using best available information to minimize the production of TDG during periods of spill. The coordination of the GAP and the BOP is to provide compliance with Washington State water quality standards for TDG and safe outmigration passage for juvenile salmonids during spill operations. Ecology has indicated that the licensee has appropriately coordinated the GAP and the BOP.

LICENSEE'S PROPOSED PLANS

2013 Total Dissolved Gate Abatement Plan

6. The Wells Project, consisting of 10 generating units with relatively small storage capacity, operates in a "run-of-river" mode releasing river flows in excess of the project's hydraulic capacity over the spillways. Washington State water quality standards require that TDG not exceed 110 percent in any State water body. However, a dam operator is not held to the TDG standards when the river flow exceeds the 7-day, 10-year frequency flood (7Q-10). The 7Q-10 flow is the highest calculated flow of a running seven consecutive day average, using the daily average flows that may be seen in a 10-year period.

7. The licensee used a two-phase computational fluid dynamics tool to predict the hydrodynamics of TDG distribution and to identify operational configurations that would minimize TDG production within the Wells Dam tailrace. The licensee develops an annual Spill Playbook to concentrate releases through specific spillways. In an April 2009 report, the model demonstrated that Wells Dam can be operated to meet TDG

criteria during the fish passage season with flows up to the 7Q-10 levels provided the forebay TDG levels are below 115 percent. Compliance was achieved through the use of a concentrated spill pattern through Spillway No. 7 and surplus flow volume through adjacent odd-numbered spillways in a defined pattern and volume.

8. Based on the TDG performance associated with implementation of the 2012 Spill Playbook, similar operating principles will be implemented for the 2013 fish passage (spill) season. In 2012, high Columbia River flows resulted in flood flows and subsequent forced spill. Often, incoming water from the forebay was already above tailrace compliance levels. However, operations following the 2012 Spill Playbook, when forebay flows were above 115 percent TDG adjustment criterion and below 7Q-10 flows, resulted in high rates of compliance.

9. In addition to minimizing involuntary spill through implementation of the 2013 Spill Playbook, the licensee will manage spill toward meeting Washington State water quality criteria for TDG during all flows below 7Q-10, as follows:

- minimize voluntary spill through operations including to the extent practicable, by scheduling maintenance based on predicted flows;
- avoid spill by continuing to coordinate operations with upstream users, to the extent that it reduces TDG;
- maximize powerhouse discharge, especially during periods of high river flows; and
- during fish passage (spill) season, manage voluntary spill levels in real time in an effort to continue to meet TDG numeric criteria.

2013 Bypass Operating Plan

10. The 2013 spring and summer outmigration of naturally produced juvenile salmonids will consist of offspring of adults that spawned above Wells Dam during brood years 2011 and 2012. The spring migration will include juvenile spring Chinook, coho, sockeye, and steelhead, and summer/fall Chinook sub-yearlings will migrate during both spring and summer bypass operations.

11. Operation of the bypass system throughout the 2013 season will follow criteria contained in the Wells Dam Juvenile Dam Passage Survival Plan in the HCP. One of the main goals of the plan is to provide bypass operations for at least 95 percent of both the spring and summer migration of juvenile salmonids. Upon completion of the 2012 bypass season, the updated analysis determined that the adjusted dates of bypass operations (commenced at 00:00 on April 9 and ended at 24:00 hours on August 19) at Wells Dam provided bypass passage for 99.96 percent of yearling Chinook, 99.86

percent of steelhead, 100 percent of sockeye, and 99.30 percent of sub-yearling Chinook. Based upon this high level of compliance with HCP bypass operating criteria (exceeding the 95 percent bypass-passage criteria for all species), the licensee proposes to commence operation of the bypass system starting at 00:00 hours on April 9 and to end operations at 24:00 hours on August 19.

Coordination of the Two Plans

12. Seasonal bypass operations generally coincide with the spring freshet, an event during which hydroelectric operators must cope with flows that often exceed the project's hydraulic capacity. When flows exceed the hydraulic capacity of the generating units, water must be passed via spillways. These spills increase the concentration of atmospheric gases in the water downstream of project and can result in excessive levels of TDG that may injure fish. The licensee has developed annual spill playbooks for operation of spillways at the Wells Dam.

13. The Wells 2013 Spill Playbook specifies the release and operation of the spillways at the Wells Dam to achieve Washington State water quality standards for TDG in the project tailrace. The licensee has determined that concentrating spill through the middle of the spillway and supporting that concentrated spill with turbine discharge results in the most effective minimization of TDG in the tailrace.

AGENCY CONSULTATION

14. The licensee has developed the 2013 total dissolved gas abatement plan (GAP) and the 2013 bypass operating plan (BOP) in consultation with the parties to the Aquatic Settlement Agreement and Habitat Conservation Plan. The Washington Department of Ecology and the National Marine Fisheries Service (NMFS) have approved the GAP. The HCP Coordinating Committee, which includes the NMFS, has approved the BOP.

15. On December 28, 2012, a draft copy of the BOP was provided to the Aquatic Settlement Work Group to coordinate the BOP with the GAP. No comments were received from any of the agencies. On February 12, 2013, Ecology submitted a letter indicating that the GAP and BOP were appropriately coordinated in accordance with its Section 401 WQC. The licensee provides documentation of consultation with mail correspondence and email communications in support of its agency approval requirements.

CONCLUSIONS

16. The licensee's 2013 total dissolved gas abatement and 2013 bypass operating plans fulfill the requirements of its license article and Section 401 WQC requirements and provide guidelines for compliance with Washington State water quality standards for TDG and safe downstream fish migration. Accordingly, the plans should be approved.

17. The licensee's 2014 total dissolved gas abatement plan and 2014 bypass operating plan, pursuant to license article 401(a), are due by February 28, 2014. Further, the licensee's 2012 total dissolved gas report, filed February 25, 2013, pursuant to license article 401(b), is under Commission staff review and will be addressed under a separate proceeding.

18. The Commission should reserve the right to require changes to the plans based on staff's review of the annual plans, annual reports, and agency recommendations.

The Director orders:

(A) Public Utility District No. 1 of Douglas County, Washington's 2013 total dissolved gas abatement plan, filed February 22, 2013, pursuant to license article 401(a) for the Wells Hydroelectric Project No. 2149, as modified by ordering paragraph (C), is approved.

(B) Public Utility District No. 1 of Douglas County, Washington's 2013 bypass operating plan, filed February 22, 2013, pursuant to license article 401(a) for the Wells Hydroelectric Project No. 2149, as modified by ordering paragraph (C), is approved.

(C) The Commission reserves the right to require changes to the plans based on staff's review of the annual plans, annual reports, and agency recommendations.

(D) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance, as provided in section 313(a) of the Federal Power Act, 16 U.S.C. § 8251 (2006), and the Commission's regulations at C.F.R. § 385.713 (2012). The filing of a request for rehearing does not operate as a stay of the effective date of this order, or of any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

Thomas J. LoVullo
Chief, Aquatic Resources Branch
Division of Hydropower Administration
and Compliance

Document Content(s)

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