STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
4601 N Monroe Street • Spokane, Washington 99205-1295 • (509)329-3400

March 21, 2016

The Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street N.E.
Washington DC, 20426

RE: Order No. 11636, Amending the Water Quality Certification for the Pend Oreille River Boundary Hydroelectric Project, FERC License No. 2144

Dear Secretary Bose:

The Department of Ecology (Ecology) has issued the enclosed Administrative Order No. 11636 to Mr. John Armstrong, Seattle City Light, amending the Water Quality Certification for the Pend Oreille River Boundary Dam Project, FERC License No. 2144. The amendment shows the original 401 Water Quality Certification (Order No. 8872) Section 4.2.1 with the tailrace biological sampling requirement in the Total Dissolved Gas Attainment Plan removed by strikethrough.

No other conditions or requirements of Order No. 8872 (dated November 18, 2011) are affected by this amendment.

All correspondence relating to this document should be directed to:

Patrick McGuire
Water Quality Program
Washington State Department of Ecology
4601 N. Monroe Street
Spokane, WA 99205

Please contact Pat McGuire at (509) 329-3567 or pmcg461@ecy.wa.gov if you have any questions regarding the content of the document.

Sincerely,

James M. Bellatty
Section Manager
Water Quality Program

JMB:PDM:jab
Enclosure

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

IN THE MATTER OF GRANTING AN ADMENDED ADMINISTRATIVE ORDER TO SEATTLE CITY LIGHT	)))	AMENDED ADMINISTRATIVE ORDER DOCKET NO. 11636 ADMINISTRATIVE ORDER
MR. JOHN ARMSTRONG		DOCKET NO. 8872

To:
Mr. John Armstrong
Boundary Relicensing Project Manager
Seattle City Light
700 Fifth Avenue, Suite 3200
Seattle, WA 98124

Amended Order Docket No.	11636
401 Certification Order Docket No.	8872
Site Location	Boundary Dam, Pend Oreille River, River Mile 17.0 Powerplant Latitude: 48.99409631 Powerplant Longitude: -117.3543288

The Department of Ecology (Ecology) has issued this amended Administrative Order (Order) Docket No. 11636 to amend Order Docket No. 8872 dated November 18, 2011 issued to Boundary Dam Hydroelectric Project (Project), Seattle City Light. This Order describes the changes and purpose for the changes for the Project.

PURPOSE

On November 14, 2014, Seattle City Light sent a letter to Washington State Department of Ecology (Ecology) asking for a modification of the Boundary Hydroelectric Project 401 Certification. The letter requests that Ecology eliminate the requirements for biological sampling for total dissolved gas (TDG) impacts to fish following the implementation of TDG improvement measures at Boundary Dam.

The biological fish sampling requirements are located in section 4.2.1, *Field Studies and Monitoring*, of the *Total Dissolved Gas Attainment Plan, August 2011*. The *Total Dissolved Gas Attainment Plan* is in Appendix B of the 401 Certification. The modification eliminates the third paragraph of section 4.2.1 of the Plan.

No other condition or requirement of Order Docket No. 8872 is hereby affected by this amendment.

BACKGROUND

Ecology issued the 401 Certification Order No. 8872 to the Seattle City Light Boundary Dam Hydroelectric Project (Project) on November 18, 2011. The Federal Energy Regulatory Commission (FERC) issued a new 42-year operating license to the Project on March 20, 2013.

Section 3.4.1 of the 401 Certification requires Seattle City Light to develop and implement a Total Dissolved Gas Attainment Plan (Plan). The Plan is located in Appendix B, *Water Quality Plans*, of the 401 Certification.

PROJECT DESCRIPTION

Boundary Dam Hydroelectric Project (Project) is on the Pend Oreille River at River Mile 17.0, about 1 mile south of the United States-Canada border. The Pend Oreille River is in Water Resource Inventory Area (WRIA) 62 and flows north into Canada.

The Project site covers 609 acres of U.S. Forest Service land and 329 acres managed by the Bureau of Land Management (BLM). The dam forms a reservoir that is 17.5 miles long.

Boundary Dam is a concrete arch structure that was completed in 1967. The dam is about 340 high with a crest length of 508 feet. The Project power plant has six turbine generator units with a capacity of about 1,040 MW. The Boundary Dam Project was built without fish passage facilities. No anadromous fish are found in the Boundary Dam Reservoir.

FINDINGS

The Washington State Department of Ecology 401 Water Quality Certification in Section 3.4 requires a Total Dissolved Gas Attainment Plan (Plan). Section 4.2.1 of the Plan states that Seattle City Light will conduct biological sampling in the Project tailrace within two days of a spill event or at a time that is safe to access the tailrace. These sampling events are to take place after the implementation of each program of TDG improvement measure(s). The measures can be either operational or structural changes.

The sampling is to be done by boat electrofishing along five 200 meter transects in the tailrace during each sampling period, once per year in years following installation of a new TDG measure. Fish captured will be examined for injury and indications of gas bubble trauma.

This biological sampling requirement in the Total Dissolved Gas Attainment Plan was discussed in the Boundary Water Quality Workgroup. The workgroup consists of members from Seattle City Light, U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, Ecology, Kalispel Tribe, Bureau of Indian Affairs, and U.S. Forest Service.

At the meeting on April 16, 2014, the workgroup unanimously agreed that the biological sampling should be removed. The workgroup requested that Ecology remove the biological sampling requirement from the Total Dissolved Gas Attainment Plan. Seattle City Light sent Ecology a letter on November 14, 2014, as a formal request to amend the 401 Water Quality Certification to remove the tailrace biological sampling requirement. The letter is attached to document the Water Quality Workgroup decision process.

The Water Quality Workgroup felt that fish sampling in the tailrace area will not provide useful information on operational or structural Project changes to reduce TDG. The following reasons summarize why the sampling should not be used:

1. There is no baseline information or data on gas bubble trauma for comparison to conditions following Project TDG abatement operational or structural changes.

2. The low densities of fish and limited sampling restrict Seattle City Light's ability to evaluate whether the Project changes relate to any physical fish trauma found.
3. There is variability in the susceptibility of different species to TDG and no information on the recent behavior of captured fish (residence time in the tailrace or time at various depths).

The Boundary Water Quality Workgroup felt that the following research activities Seattle City Light is performing would provide more useful information:

1. Total dissolved gas data is collected at the USGS gaging station in the forebay and tailrace at Boundary Dam since 1999. Seattle City Light has conducted TDG studies with USGS, including placing additional TDG meters in the tailrace to study total dissolved gas patterns. Seattle City Light has developed a physical model and has used a Computational Fluid Dynamics computer model. Seattle City Light has developed accurate correlations between TDGs data at the USGS gaging stations and physical and numerical model data.
2. Seattle City Light's population monitoring studies will include sampling in the tailrace area and any occurrences of gas bubble trauma will be recorded.
3. Pacific Northwest National Laboratory/Battelle tested sensor fish in 2014 to assess baseline conditions. The tests will be repeated in 2015 to provide data for fish population studies and vulnerability to injury through the newly modified spillway. If sensor fish provide useful information, they will be used in the future to evaluate modifications to the Project.

AUTHORITIES

In exercising authority under Section 401 of the Clean Water Act (33 U.S.C. § 1341) and Revised Code of Washington (RCW) 90.48.120 and 90.48.260, Ecology has investigated this proposal for:

1. Conformance with all applicable water quality based, technology based, toxic or pretreatment effluent limitations as provided under Federal Water Pollution Control Act Sections 301, 302, 303, 306, and 307, and 33 U.S.C. §§ 1311, 1312, 1313, 1316, and 1317.
2. Conformance with all applicable provisions of Chapter 90.48 RCW, including the provision to use all known, available, and reasonable technologies (AKART) to prevent and control pollution of state waters as required by RCW 90.48.010.
3. Conformance with the state water quality standards as provided for in Chapter 173-201A WAC and by Chapter 90.48 RCW, and with other appropriate requirements of state law that are related to compliance with such standards.
4. Conformance with RCW 90.56, which prohibits discharge of oil, fuel, or chemicals into state waters or onto land where such contaminants could potentially drain into state waters.
5. Conformance with the Minimum Flows and Levels Act, Chapter 90.22 RCW and the Water Resources Act, Chapter 90.54.020 RCW.

CURRENT STANDARDS

1. **Washington State Water Pollution Control Act**
   The intent of the actions required in this certification is to support the goals of the State of Washington to "maintain the highest possible standards to ensure the purity of all waters of the state consistent with public health and public enjoyment thereof, the propagation and protection of wildlife, birds, game, fish, and other aquatic life and the industrial development of the State, and to that end require the use of all known and available technologies (AKART) by industries and others to control pollution of the waters of the state of Washington" (RCW 90.48.010).

2. **Washington State Water Quality Standards (WAC 173-201A, 2006)**
   The Pend Oreille River use-based water quality characteristics are:
   - *Salmonid spawning and rearing and migration. Key characteristic is salmon and trout spawning and emergence outside of summer (September 16 – June 14).*
   - *Primary contact recreation.*
   - *Water supply for domestic, agriculture, industry, and stock watering.*
   - *Miscellaneous uses – wildlife habitat, harvesting, commerce and navigation, boating and aesthetics.*

   Numeric water quality criteria applicable to the designated uses listed above are found in WAC 173-201A-200 and WAC 173-201A-602, Table 602. These include criteria for TDGs, pH, dissolved oxygen (DO), fecal coliform, turbidity, and temperature. Criteria for these parameters specific to the Pend Oreille River are identified below.

Primary Water Quality Standard		
Salmonid Spawning, Rearing and Migration Habitat – Primary Contact Recreation		
Parameter	**Condition**	**Value**
Temperature	Highest 7-DADMAX.	17.5º C. **Verify if this stream has Supplemental Spawning data.** If Supplemental Spawning applies in this stream, check the date of application. For streams with Supplemental Spawning data, the temperature listed above applies during the time frame NOT covered in the Supplemental temperature information.
Dissolved Oxygen	Lowest 1 day minimum.	8 mg/L.
Turbidity	Turbidity shall not exceed:	5 NTU over background when background is <= 50 NTU -or- 10% increase in turbidity when background is > 50 NTU.

Total Dissolved Gas	% Saturation.	Total dissolved gas shall not exceed 110% of saturation at any point of sample collection.
pH		Range within 6.5 – 8.5, with a human-caused variation within the above range of < 0.5 units.
Bacteria		Fecal coliform organism levels must not exceed a geometric mean value of 100 colonies/100mL, with not more than 10% of all samples (or any single sample when less than 10 sample points exist) obtained for calculating the geometric mean value > 200 colonies/100 mg/L.
Toxic Substance Criteria	See WAC 173-201A-240 and 250.	

Additional Water Quality Standards

Table 602

Description	Pend Oreille River from Canadian border (river mile 16.0) to Idaho border (river mile 87.7)1
Special Conditions	
Description	Temperature shall not exceed a 1-DMax of 20.0°C due to human activities. When natural conditions exceed a 1-DMax of 20.0°C no temperature increase will be allowed which will raise the receiving water temperature by greater than 0.3°C; nor shall such temperature increases, at any time exceed t=34/(T+9).

Pend Oreille River TMDL status:

Waterbody Name	Pollutants	Status**
Pend Oreille River	Temperature	Under development Undergoing dispute resolution
	Total Dissolved Gas	EPA approved

** ***Status*** *will be listed as one of the following: Approved by EPA, Under Development or Implementation*

EPA approved the Pend Oreille River Total Dissolved Gas (TDG) TMDL on March 26, 2008. The TDG Implementation Plan will be developed in conjunction with the Temperature TDG Implementation Plan.

The Temperature TMDL is currently awaiting EPA approval.

3. **Toxics and Oil Spills [WAC 173-201A-260(2)(a) and RCW 90.56]**
Toxics concentrations shall be below those which have the potential, either singularly or cumulatively, to adversely affect characteristic water uses, cause acute or chronic conditions

to the most sensitive biota dependent on those waters, or adversely affect public health. RCW 90.56 prohibits any discharge of oil, fuel, or chemicals into state waters or onto land where such contaminants could potentially drain into state waters.

SPECIFIC CONDITIONS

The *Total Dissolved Gas Attainment Plan* will be changed as shown below. Paragraph 3 of Section 4.2.1 is to be removed as shown below:

4.2 Development of Prioritized Implementation

4.2.1 Field Studies and Monitoring

Monitoring TDG will continue using the USGS gaging station located in the Project forebay and at the USGS-FMS compliance monitoring site in the Project tailwater. (The compliance monitoring site was identified in the Pend Oreille River TDG TMDL, and is located at the upstream end of the TDG compliance area for the Project [Ecology 2007].) If the hydrologic conditions allow, SCL takes advantage of opportunities to fill in gaps in data records to continue to build a better understanding of the operational influences on TDG production at the Project.

Once operational changes are formally implemented or a prototype alternative has been installed at the Project, the TDG data will continue to be collected and evaluated for actual performance and critically compared to the predicted performance to assess potential improvements.

~~Following implementation of each program of TDG improvement measure(s), SCL will conduct biological sampling in the Project tailrace area within two days of a spill event or at a time that is safe to access the tailrace. SCL will use boat electrofishing to sample along five 200 meter transects in the tailrace during each sampling period once per year in years following installation of a new TDG measure. (Sampling methods are described in the Fish and Aquatics Management Plan in the Boundary license.) Fish captured will be examined for injury and indications of gas bubble trauma. Sampling will not be conducted during spill due to concerns regarding the safety of field crews in the tailrace.~~

There are no other changes proposed for the 401 Certification or the Total Dissolved Gas Attainment Plan.

FAILURE TO COMPLY WITH THIS ORDER

Failure to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.

YOUR RIGHT TO APPEAL

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do both of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

Your appeal alone will not stay the effectiveness of this Order. Stay requests must be submitted in accordance with RCW 43.21B.320.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel Road SW STE 301 Tumwater, WA 98501	**Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

CONTACT INFORMATION

Please direct all questions about this Order to:

Patrick McGuire
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Eastern Regional Office
N. 4601 Monroe

Spokane, WA 99205

Phone: 509-329-3567
Email: pmcg461@ecy.wa.gov

MORE INFORMATION

Pollution Control Hearings Board Website
www.eho.wa.gov/Boards_PCHB.aspx

Chapter 43.21B RCW - Environmental and Land Use Hearings Office – Pollution Control Hearings Board
http://app.leg.wa.gov/RCW/default.aspx?cite=43.21B

Chapter 371-08 WAC – Practice and Procedure
http://app.leg.wa.gov/WAC/default.aspx?cite=371-08

Chapter 34.05 RCW – Administrative Procedure Act
http://app.leg.wa.gov/RCW/default.aspx?cite=34.05

Laws: www.ecy.wa.gov/laws-rules/ecyrcw.html

Rules: www.ecy.wa.gov/laws-rules/ecywac.html

SIGNATURE

James M. Bellatty
Water Quality Section Manager
Eastern Regional Office

3/21/16
Date