DEPARTMENT OF ECOLOGY
State of Washington

Rule Implementation Plan

Chapter 173-201A WAC Water Quality Standards for surface Waters of the State of Washington

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For more information contact:

Water Quality Program
P.O. Box 47600
Olympia, WA 98504-7600
Phone: 360-407-6600

Washington State Department of Ecology— www.ecology.wa.gov

- Headquarters, Olympia 360-407-6000
- Northwest Regional Office, Bellevue 425-649-7000
- Southwest Regional Office, Olympia 360-407-6300
- Central Regional Office, Union Gap 509-575-2490
- Eastern Regional Office, Spokane 509-329-3400

Rule Implementation Plan

Chapter 173-201A WAC
Water Quality Standards for Surface Waters of the State of Washington

Water Quality Program

Washington State Department of Ecology

Olympia, Washington

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Purpose

The Washington State Department of Ecology (Ecology) provides the information in this implementation plan to meet agency and Administrative Procedure Act (RCW 34.05.328) requirements related to rule adoptions.

Introduction

On July 31, 2019, Ecology proposed amendments to Chapter 173-201A WAC Water Quality Standards for Surface Waters of the State of Washington (AO # 19-02). On December 30, 2019, Ecology adopted the final rule amendments. The amendments adopted into rule include the following:

- Amending the numeric criteria for total dissolved gas (TDG) in the Snake and Columbia rivers at WAC 173-201A-200(1)(f)(ii).
- Amending specific sections of the rule to meet legal obligations in a 2018 Stipulated Order of Dismissal, including:
    - Removing two sub-sections in the fresh and marine water temperature criteria related to an incremental temperature allowance from nonpoint source activities, at WAC 173-201A-200(1)(c)(ii)(B) and WAC 173-201A-210(1)(c)(ii)(B), and
    - Amending footnote 'dd' in WAC 173-201A-240(5) Table 240, to clarify that an adjustment of metals criteria (Water Effects Ratio) pursuant to this footnote requires EPA approval.
- Clarifying the descriptions of marine water aquatic life use designations at WAC 173-201A-210(1)(a) and WAC 173-201A-610 Table 610.

The purpose of this rule implementation plan is to inform those who must comply with Chapter 173-201A WAC about how Ecology intends to:

- Implement and enforce the rule.
- Inform and educate persons affected by the rule.
- Promote and assist voluntary compliance for the rule.
- Evaluate the rule.
- Train and inform Ecology staff about the new or amended rule.

Also included in this plan is information about:

- Supporting documents that may need to be written or revised because of the new rule or amended rule.
- Other resources where more information about the rule is available.
- Contact information for Ecology employees who can answer questions about the rule implementation.

Implementation of the Rule Changes

Adjusting Total Dissolved Gas

The amendments considered during rulemaking were mainly focused on the most substantive amendment, which is adjusting the numeric criteria for total dissolved gas (TDG) in the Snake and Columbia rivers at WAC 173-201A-200(1)(f)(ii) to improve juvenile fish passage. The goal of this amendment is to improve fish passage for salmon and steelhead migrating downstream in the Snake and Columbia rivers. Dams release water through spillways over the dam and fish using the spillway have a better chance for survival compared to those that pass through the dams' turbines. However, spilling water also increases TDG that can negatively impact aquatic life. This rulemaking amends the TDG limit to allow for greater water flow through spillways for improved salmonid migration, while ensuring that TDG limits minimize negative impacts to aquatic life through sufficient biological monitoring. These revisions:

- Provide a new adjusted TDG criteria that may be applied at dams that operate increased spills for the purpose of improving downstream juvenile salmon and steelhead migration in the Snake and Columbia rivers.
- Establish biological thresholds that must be met to apply an adjusted criteria up to 125% TDG.

The majority of this Implementation Plan document focuses on how Ecology will implement the adjustment of TDG to improve fish spill on the Snake and Columbia rivers.

Other Amendments to this Rulemaking

The other rule amendments are intended to meet legal obligations in a 2018 Stipulated Order of Dismissal, and to clarify descriptions of marine water aquatic life use designations. These amendments are considered nonsubstantive for purposes of implementation, and therefore do not require detailed descriptions of how the amendments will be implemented. Rationale for these amendments, and why they are not considered to be challenges for implementation, are provided below.

Meeting Legal Obligations

Amendments were made to sections of the Surface Water Quality Standards (SWQS) as agreed to in a 2018 U.S. District Court Stipulated Order of Dismissal (Order) between Northwest Environmental Advocates (NWEA), the U.S. Environmental Protection Agency (EPA), and Ecology. In the Order, Ecology agreed to take action on several sections of the surface water quality standards by October 2021, including the following two revisions:

1. Remove two sub-sections in the fresh and marine water temperature criteria related to an incremental temperature allowance from nonpoint source activities.
    - Although these provisions for nonpoint temperature increases have been in the standards for decades, they have not been applied in Ecology's nonpoint protection program. The provisions may also conflict with our current antidegradation requirements that already prescribe a different temperature allowance when water is cooler than the assigned numeric criterion. For these reasons, Ecology agreed to remove these sub-sections of

temperature criteria and is including the revision in this rulemaking to be compliant with the Order. Amending these two provisions do not require implementation details because they are being removed from the rule.

2. Amend footnote 'dd' in Table 240 to clarify that an adjustment of metals criteria (Water Effects Ratio) pursuant to this footnote requires EPA approval pursuant to 33 U.S.C. § 1313(c).

    - Ecology agreed to amend the footnote in Table 240 to clarify that adjustments to metals criteria requires EPA approval. EPA previously indicated to Ecology that any efforts to revise metals criteria by developing water effects ratios would need to go through a separate rulemaking, which Ecology agreed to. This amendment would codify the agreed-upon intent of this footnote and would not change how the footnote is currently implemented.

Clarifying the descriptions of marine water aquatic life use designations

The amendments to the aquatic life use designation descriptions for marine waters provide clarification on what differentiates the aquatic life marine uses described in the water quality standards. In a 2003 rulemaking to update Washington's Water Quality Standards, the restructuring of aquatic life use designations descriptions resulted in an unintentional change that applied these use designations to cold water fisheries. This error was recently discovered when the City of Everett petitioned Ecology to revise dissolved oxygen criteria for marine waters. The city pointed out the discrepancies in the marine use designation descriptions, and upon review, Ecology agreed that this was an unintended error and that the agency would correct in a future rulemaking. This clarification would return the descriptions to their original intent for marine waters. This clarification will not change how the criteria that apply to each designated use are implemented.

Implementation and Enforcement of TDG Adjusted Criteria Amendment

Implementing TDG Adjusted Criteria

Hydropower facilities that use the adjusted TDG criteria for the spring spill season in the Snake and Columbia rivers will have two options.

Option 1 (forebay and tailrace criteria)
The current exemption in the TDG standard requires hydropower projects to submit a gas abatement plan (GAP) accompanied by a fisheries management and biological monitoring plan in order to apply the adjusted TDG criteria. As a result of the final adopted rule amendments, federal hydropower projects are no longer required to prepare these plans to apply the adjusted 12-hour average criteria of 115% in the forebay, 120% in the tailrace, and a maximum 2-hour average criteria of 125% in the tailrace. Public Utility Districts (PUDs) may continue to be required to submit GAPs when necessary to meet obligations of their Federal Energy Regulatory Commission license or associated Clean Water Act Section 401 water quality certification (401WQC).

Option 2 (tailrace-only criterion)
Hydropower projects in Washington that spill to aid fish passage by operating spill levels up to the adjusted 125% (12hr.)/126% (2hr.) tailrace-only criteria must submit an annual biological monitoring plan to Ecology for review and approval. The rule amendment would require the biological monitoring plan to include salmon and non-salmonid sampling. Details required for the biological monitoring plan are included in a following section of this implementation plan.

Hydropower projects would have a choice to apply adjusted criteria described in option 1 or option 2 but would be required to follow the additional requirements set forth in option 2 in order to apply the 125% (12hr.)/126% (2hr.) TDG tailrace-only criteria.

Other Biological Requirements

Federal hydropower projects
The Endangered Species Act (ESA) consultation process guides hydropower operations in a coordinated manner to meet the congressionally authorized purposes of the dams, including conservation of fish and wildlife species. The U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration Fisheries (“Services”) release biological opinions concerning the effects of the dams on ESA-listed species. These consultations guide the Federal Columbia River Power System (FCRPS) operations, including spill and fish passage for the ESA-listed species. For the purpose of this rulemaking, the term “Endangered Species Act consultation documents” refer to these ESA requirements described above that guide Federal hydropower project operations to meet ESA law.

Public Utility District (PUD) hydropower projects

Biological Opinions and Habitat Conservation Plans (HCPs) are documents that fulfill consultation requirements under ESA section 7 and ESA section 10, respectively. PUD hydropower projects conduct fish management operations under Biological Opinions, settlement agreements, and/or approved HCPs. The requirements derived from one or more of these documents to meet the ESA are incorporated into their respective Federal Energy Regulatory Commission (FERC) licenses. This rule would not place any new requirements on PUD hydropower projects because biological and operational requirements are established through their Federal Energy Regulatory Commission licensing process and the conditions included in the associated 401 WQCs issued by Ecology. For PUDs, in this rulemaking the term "Endangered Species Act consultation documents" refers to the ESA requirements described above that guide PUD operations to meet ESA law.

Compliance with Endangered Species Act

Ecology has placed the following language into the surface water quality standards rule that apply to both federal and PUD hydropower projects:

In addition to complying with the requirements of this chapter, the tailrace maximum TDG criteria at hydropower dams must be applied in accordance with Endangered Species Act consultation documents associated with spill operations on the Snake and Columbia rivers, including operations for fish passage. The Endangered Species Act consultation documents are those by which dams may legally operate during the time that the adjusted criteria in (f)(ii)(B) of this subsection are in use.

The intent of this language is to make clear that any dams that employ the 125% (12hr.)/126% (2hr.) tailrace-only criteria must do so in a manner that meets their ESA requirements regarding spill volumes, including juvenile and adult fish passage. Dams may not employ these adjusted criteria unless the ESA requirements have evaluated and currently allow the spill volumes and any resulting impacts to ESA species. Any application of the 125% (12hr.)/126% (2hr.) tailrace-only criteria to increase spill that does not comply with the U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration Fisheries ESA consultation documents under which the dam is operating, is not allowed by this rule.

Ensuring Protection of Downstream Water Quality

Under certain atmospheric conditions (warm air temperatures/lack of wind) TDG levels may not sufficiently 'degas' as the spill water travels from an upstream dam's tailrace to the next downstream dam's forebay. This may cause the downstream dam to have little capacity to spill water without exceeding the applicable criteria for that dam. This scenario may also result in downstream increases well above 125% that are not otherwise allowed by this rule. Ecology does not expect this scenario to occur with the Snake and Columbia river dams that are owned and operated by the U.S. Army Corps of Engineers (USACE). These dams are operated as a unified system therefore Ecology assumes that controls of spill at upstream dams will be mitigated if that spill causes a burden for the downstream dam to comply with TDG criteria.

However, those dams in the middle reach of the Columbia River that are owned by 3 different Public Utilities may not function as a unified system in the same manner as the USACE dams. Therefore,

Ecology will require within the biological monitoring plan approval that dams take into consideration the downstream TDG compliance concerns to which the upstream dam may be contributing. Ecology does not intend to allow upstream dam spill operations to utilize the 125% (12hr.)/126% (2hr.) tailrace-only criteria if the spill regime results in additive TDG increases that may disproportionately impact downstream aquatic life.

If compliance with applicable TDG criteria is difficult for a downstream dam due to high forebay TDG levels, Ecology will apply Chapter 90.48.422(3) RCW which applies to non-federal dams. In accordance with the intent of the language in Chapter 90.48.422(3) RCW, Ecology will use its discretion when determining project compliance with the standards, accounting for all factors contributing to in situ TDG levels for which the dam has not caused. Additionally, Ecology will work with downstream operators to evaluate annual TDG data with respect to concerns of TDG accumulation above the 125% criteria to determine if degassing between dams is not providing the next downstream dam with the ability to maintain tailrace TDG levels at or below 125%.

Total Dissolved Gas Biological Monitoring Plan Requirements

Introduction

The purpose of this guidance section is to outline details of the biological monitoring plan required within WAC 173-201A-200(1)(f)(ii)(B). The biological monitoring requirements outlined within this document should be followed when applying adjusted total dissolved gas (TDG) levels up to 125% during the spring spill season on the Snake and Columbia rivers. The biological monitoring plan is required for a minimum of five years and must be approved by Ecology. After five years, Ecology will make a determination if changes to biological monitoring is necessary. This decision will be informed by the compliance and biological monitoring data provided in the preceding years.

The Biological Monitoring Plan incorporates flexibilities in regards to minimum sampling requirements and employs an adaptive management approach. Hydropower project operators utilizing the 125% (12hr.)/126% (2hr.) tailrace-only criteria must provide a biological monitoring plan for salmonid fish that meet the minimum sampling requirements herein. Ecology will use its discretion for minimum sample size requirements depending on water conditions and feasibility. The 2021 spring spill season must also include biological monitoring for non-salmonid fish.

Adjusted Total Dissolved Gas Criteria of 125%

WAC 173-201A-200(1)(f)(ii)(B) in the final adopted rule states that TDG may be increased up to a maximum saturation level of one hundred twenty-five percent, calculated as an average of the two highest hourly TDG measures in a calendar day as measured in fixed-monitoring sites in the tailrace of each dam. TDG may be adjusted to 125% with a department approved biological monitoring plan that must include non-salmonid fish species monitoring in 2021 and thereafter.

Site-Specific Sampling

Non-salmonid fish should be collected in the fish bypass system, within distance of the next downstream TDG fixed monitoring site, or within 1 mile downstream from the hydropower project, whichever is

greater. Biological monitoring occurring outside of the fish bypass system should focus on relatively shallow areas of the river that have a higher likelihood of TDG related impacts due to limited depth compensation. Fish collected and monitored in the bypass system are considered most susceptible to TDG related effects due to the shallow waters in the bypass system. If insufficient samples sizes are collected at the fish bypass system, in-river sampling downstream from the hydropower project may be necessary to reach minimum sample size requirements.

Salmonid sampling may continue at locations prescribed in the 2019 Gas Bubble Trauma Monitoring Protocol or as updated by the Action Agencies. Ecology reserves the right to make modifications to gas bubble trauma monitoring protocols to better evaluate impacts to aquatic species.

Minimum Sample Size Requirements

The weekly target sample size for gas bubble trauma monitoring will be 100 non-salmonids and 100 salmonids. However, the weekly minimum required sample size will be 50 non-salmonid and 50 salmonid fish to determine compliance with the biological thresholds established for gas bubble trauma. All gas bubble trauma observations must be reported regardless of sample size requirements and should be included in the calculated incidence of gas bubble trauma. It is preferred that fish sampled are of the same life stage (juvenile or adult life stage) for a given species when evaluating the incidence of gas bubble trauma to the biological thresholds due to sensitivity differences among life stages. If a fish is examined for gas bubble trauma, it must be included in the assessment of compliance with biological thresholds, regardless if it meets species richness requirements.

Species Richness Requirements

A minimum of three native non-salmonid species should be included in the weekly evaluation of biological thresholds for gas bubble trauma. All gas bubble trauma observations must be reported regardless of meeting the minimum sample requirements to calculate the incidence of gas bubble trauma. Non-native or invasive fish species incidence of gas bubble trauma should be reported but fish do not count towards minimum sample sizes and may not be used to compare to the biological thresholds.

There are no minimum number of species required for salmonids.

Gas Bubble Trauma Monitoring

Examination of fish for gas bubble trauma should follow the procedures detailed in the 2019 Gas Bubble Trauma Monitoring Protocol or updated versions established by the Fish Passage Center Smolt Monitoring Program. The hydropower project operator that submitted an application to utilize the 125% (12hr.)/126% (2hr.) tailrace-only criteria will be responsible for comparing the weekly incidence of gas bubble trauma to the biological thresholds and any accompanying actions. This guidance document applies to gas bubble trauma monitoring for all species and life stages, as applicable.

TDG must be reduced to allowances specified in WAC 173-201A-200(1)(f)(ii)(A) if the calculated incidence of gas bubble trauma in salmonids or non-salmonids exceeds:

- Gas bubble trauma in non-paired fins of 15 percent; or

- Gas bubble trauma in non-paired fins of five percent and gas bubbles occlude more than 25 percent of the surface area of the fin.

Salmonids and non-salmonids are to be evaluated separately when comparing gas bubble trauma incidence to the biological threshold values described above. If gas bubble trauma exceeds these biological thresholds for either salmonids or non-salmonids, additional monitoring must demonstrate the incidence of gas bubble trauma is below biological thresholds before the TDG criteria can be adjusted up to 125%. Gas bubble trauma must be below biological thresholds over the next 7-day averaging period before the adjusted TDG criteria of 125% can be applied again.

Gas bubble trauma monitoring data shall be excluded from comparison to biological thresholds when higher than normal river flow results in excess spill above the ability to meet subsection (f)(ii)(B). This monitoring data exclusion shall apply for one full calendar day after every project [that utilizes the adjusted 125% (12hr.)/126% (2hr.) tailrace-only criteria] within an assigned zone is meeting subsection (f)(ii)(B) criteria. For example, in the lower Columbia River zone (McNary Dam to Bonneville Dam), the application of biological thresholds would not resume until one full calendar day after all four dams can meet subsection (f)(ii)(B). If McNary, John Day, and The Dalles dams can meet 125% (12hr.)/126% (2hr.) tailrace only criteria but flows at Bonneville Dam result in excess spill above the ability to meet 125% (12hr.)/126% (2hr.) tailrace only criteria, then the biological thresholds would not apply to the lower Columbia River zone until one full calendar day after Bonneville has met subsection (f)(ii)(B). These details will be further elaborated, as needed, through Ecology's approval process of biological monitoring plans.

One full calendar day extension of this exemption from biological thresholds was chosen to allow fish species to acclimate to controlled river conditions for fish passage spill and remove any influence that spill due to higher than capacity flows may have on gas bubble trauma incidence during high river flows. Research has found that gas bubbles in tissues dissipates relatively rapid (Hans et al. 1999; Knittel et al. 1980; Montgomery Watson 1995; Elston et al. 1997). When accounting for gas bubble dissipation, in conjunction with depth compensation, fish should be equilibrated to ambient river conditions within one calendar day. One calendar day may range from 24 to 47 hours, depending on when uncontrolled spill ended during the calendar day.

When biological thresholds are exceeded, hydropower operators must default to the following alternative criteria:

1) TDG shall not exceed 115% TDG in the forebay of the next downstream dam with an averaging period of the twelve highest consecutive hourly readings in a calendar day,

2) 120% TDG in the tailrace of each dam with an averaging period of the twelve highest hourly readings in a calendar day; and

3) TDG shall not exceed a maximum saturation level of 125% calculated as an average of the two highest hourly TDG measures in a calendar day.

Establishment of Biological Thresholds

The biological thresholds outlined above are equivalent to the action levels for gas bubble trauma established in the 2000 Federal Columbia River Power System Biological Opinion. Oregon has applied identical biological thresholds requirements as part of the TDG order they administer to the lower Columbia River hydropower projects.

Biological Monitoring Locations

An Ecology approved biological monitoring plan is required from each hydropower project operator within an assigned zone that intends to utilize the adjusted 125% (12hr.)/126% (2hr.) tailrace-only criteria. If multiple hydropower projects are owned by the same entity, then only one biological monitoring plan is required in a given zone. If the same hydropower operator operates in multiple zones, then a biological monitoring plan will need to be submitted for each zone but not for each individual project. Hydropower operators may collaborate to develop monitoring locations that meet the minimum requirements to use the adjusted 125% tailrace-only TDG criteria. The minimum weekly requirements required for biological monitoring of TDG related impacts should be met within the following river segments:

1) From the tailrace of Bonneville Dam to the mouth of the Snake River (Lower Columbia),

2) From the mouth of the Snake River to the tailrace of Lower Granite Dam (Lower Snake), and

3) From the mouth of the Snake River to the tailrace of Chief Joseph Dam (Middle Columbia).

Data collected from multiple facilities within one segment may be combined to meet minimum weekly sample size requirements if spill is being managed to operate at TDG levels between 120-125% and at least one facility has an approved biological monitoring plan within a given segment. Biological monitoring for non-salmonid species is not required on a river segment if there are no hydropower projects utilizing the adjusted 125% tailrace-only TDG criteria.

The following river segments were established based on hydrological and geographical differences. The middle Columbia is influenced by a different watershed than the Snake River resulting in disparate water quality conditions, flows, and biogeochemical processes. The influence of the Snake River at the confluence of the Columbia and Snake River represent a change in water volume and water quality. Given the influence of the Snake River on the Columbia River below and above the confluence and the distinct water hydraulics and water quality of the Snake River, aquatic life may be evaluated together within a given river segment.

2020 Pilot Study for Biological Monitoring

The 125% (12hr.)/126% (2hr.) tailrace-only criteria is considered optional. However, those hydropower projects interested in utilizing the further adjusted TDG allowance have had some concerns regarding monitoring. The concerns include the feasibility of collecting non-salmonid fish and meeting the minimum sample size required to utilize the 125% (12hr.)/126% (2hr.) tailrace-only criteria. The 2020 spill season is regarded as a pilot year for hydropower projects to develop and refine methods to assess gas bubble trauma in non-salmonids, establish monitoring locations, make determinations regarding the most efficient method to sample non-salmonid fish, and budget for changes in sampling programs.

Biological monitoring data collected during the 2020 spill season does not need to be compared to the established biological thresholds and the minimum sample sizes are not applicable. However, biological monitoring data collected during the 2020 spill season shall be submitted to Ecology. The data collected during the 2020 pilot season will be used to develop biological monitoring plans that will be required for approval in 2021 and that must be approved by Ecology.

Data Reporting

Hydropower project operators utilizing the adjusted 125% (12hr.)/126% (2hr.) tailrace-only TDG criteria will be required to submit annual reports to Ecology for the first five years of biological monitoring by no later than January 31 of each year. Annual reports should include the incidence of gas bubble trauma for each non-salmonid species and weekly data summaries of gas bubble trauma for all non-salmonid fish. Biological data should be accompanied with corresponding TDG results from the tailrace fixed site monitoring location.

Informing and Educating Persons Affected by the TDG Adjusted Criteria Amendment

Previous Outreach

On November 16, 2018, Ecology issued an Environmental Impact Scoping notice that evaluated risks of various TDG levels in determination of issuing a short-term modification of the TDG criteria for the 2019 spring spill season on the Snake and Columbia rivers. Two public hearings were conducted, one in-person hearing in Vancouver, WA and one public hearing via webinar. During the short-term modification outreach, Ecology messaged that upcoming rule proposals related to the TDG criteria in the Snake and Columbia Rivers would occur in summer 2019. During the short-term modification public process, both future rulemakings and the short-term modification was discussed. The short-term modification was issued on March 29, 2019.

Organizations that commented on the short-term modification included:

- Tidewater transportation and terminals
- Washington State Senate
- Orca Salmon Alliance
- Defenders of Wildlife
- Save Our Wild Salmon Coalition
- Washington Environmental Council
- Natural Resource Defense Council
- Endangered Species Coalition
- Whale and Dolphin Conservation
- Center for Biological Diversity
- Earthjustice
- Orca Network
- Oceana
- Seattle Aquarium
- Toxic Free Future
- Whale Scout
- Puget Soundkeeper
- Sierra Club
- American Rivers

- Center for Law and Policy
- Columbia Riverkeeper
- Institute of Fisheries Resources
- National Wildlife Federation
- Northwest Sportfishing Industry Association
- Pacific Coast Federation of Fishermen's Associations
- Northwest RiverPartners
- Seattle City Light
- Defenders of Wildlife
- Concerned citizens
- Oregon Department of Fish and Wildlife
- Bonneville Power Administration
- U.S. Army Corps of Engineers
- Fish Passage Center
- Palouse Great Old Broads
- Friends of the San Juans
- Sea Lion Defense Brigade
- Columbia River Inter-Tribal Fish Commission
- Nez Perce Tribe

During the public comment period for the scoping notice of the draft environmental impact statement on the proposed rulemaking, we received nine submissions that included the following organizations:

- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- National Oceanic and Atmospheric Administration
- Oregon Department of Fish and Wildlife
- Defenders of Wildlife
- Northwest RiverPartners
- Sierra Club
- Columbia Riverkeeper
- Save Our Wild Salmon

- Northwest Sportfishing Industry Association
- Earthjustice
- Columbia River Inter-Tribal Fish Commission
- Nez Perce Tribe

Future Outreach to Hydropower Projects

Ecology held a public comment period during the rule proposal stage. Ecology held an in-person meeting and webinar meetings to discuss comments and questions on the rulemaking.

In addition to the public process, Ecology will continue to meet with the public utility districts that operate hydropower projects on the middle Columbia River to discuss the TDG criteria changes during the spring spill season and discuss any concerns in regard with their 401 water quality certifications requirements. Furthermore, Ecology will continue discussions with the Corps of Engineers who operate the lower eight federal dams on the Snake and Columbia rivers that may be impacted by this rule. Ecology will collaborate with hydropower projects on the Snake and Columbia rivers to develop biological monitoring plans for the 2021 spring spill season. Discussion regarding an adaptive management approach to biological monitoring will continue into the future.

Promoting and Assisting Voluntary Compliance for the TDG Adjusted Criteria Amendment

The final rule adoption allows for the implementation of the 2019-2021 Spill Operation Agreement (also known as the Flexible Spill Agreement). This agreement was formally announced on December 18, 2018 for the 2019-2021 spill operations at the eight federal dams on the lower Snake and Columbia rivers, and was signed by the states of Washington and Oregon, the Nez Perce Tribe, the Bonneville Power Administration, U.S. Army Corps of Engineers, and the Bureau of Reclamation. The Flexible Spill Agreement is supported by the states of Idaho and Montana and the Columbia River Inter-Tribal Fish Commission.

The final rule adoption also adheres to recommendation 8 of the Southern Resident Orca Task Force convened by Governor Jay Inslee. This recommendation includes testing the potential of higher TDG standards and attendant spill to improve salmon survival and abundance, while also considering ways to minimize impacts on the Bonneville Power Administration's Fish and Wildlife Program.

The final rule adoption presents two options for applying adjusted TDG criteria for hydropower projects to aid in fish passage.

Evaluating the TDG Adjusted Criteria Amendment

The purpose of the surface water quality standards is to restore and maintain the chemical, physical, and biological integrity of Washington's waters. More specifically, the water quality standards are designed to protect public health, public recreation in the waters, and the propagation of fish, shellfish, and wildlife. The numeric and narrative criteria in the water quality standards are intended to protect those beneficial uses.

Ecology will consider if the proposed changes have achieved their purpose to protect the beneficial uses. The water quality standards should also protect those beneficial uses in the least burdensome way.

Objectively measurable outcome: Outcomes of the rule can be measured if water quality standards are attained. Ecology monitors surface waters across the state to determine whether water quality conditions meet the designated uses set in the standards. Monitoring data (meeting requirements of the Data Quality Act; RCW 90-48-570 to 90-48-590) will be used to determine whether designated uses are met.

Hydropower projects will not be penalized when incoming TDG levels are greater than the water quality standard as outlined in Revised Washington Code 90.48.422(3) that states: "With respect to federal energy regulatory commission licensed hydropower projects, the department may only require a person to mitigate or remedy a water quality violation or problem to the extent there is substantial evidence such person has caused such violation or problem." Ecology will use its discretion when determining project compliance with the standards, accounting for all factors contributing to in situ TDG levels.

Training and Informing Ecology Staff on the TDG Adjusted Criteria Amendment

A rulemaking requires broad outreach to Ecology permit writers, staff, and management involved with water quality regulation. This will be achieved through meetings, email communication, written guidance, and one-to-one communication. After this rule is adopted, Ecology will notify all Ecology staff who use the criteria or tools. Ecology will also notify all Ecology staff after EPA has finished its Clean Water Act (CWA) review of the adopted standards. EPA is required to review and approve new rule language before use for CWA actions.

Additional training on implementation of the revised water quality standards will be provided to Ecology staff upon request.

List of Supporting Documents that May Need to be Written or Revised

Ecology did not identify any documents that would need to be written or revised because of the final rule adoption.

More Information

The following websites contain more rule related information on the TDG Adjusted Criteria:

- **Water quality standards website**: https://ecology.wa.gov/Water-Shorelines/Water-quality/Freshwater/Surface-water-quality-standards
- **2019-2021 Spill Operations Agreement (flexible spill agreement)**: https://www.bpa.gov/efw/FishWildlife/SpillOperationAgreement/doc/ECF-2298_Spill-Notice-and-Agreement.pdf
- **2019 biological opinion**: https://www.salmonrecovery.gov/BiologicalOpinions/FCRPSBiOp.aspx

Contact Information

For more information about this rule implementation plan, please contact:

Bryson Finch – Technical Lead
PO Box 47600
Olympia, WA 98504
360-407-7158
bryson.finch461@ecy.wa.gov

Chad Brown – Water Quality Management Unit Supervisor
PO Box 47600
Olympia, WA 98504
360-407-6128
chad.brown@ecy.wa.gov