DEPARTMENT OF ECOLOGY
State of Washington

Preliminary Regulatory Analyses

Including the:

Preliminary Cost-Benefit Analysis
Least-Burdensome Alternative Analysis
Administrative Procedure Act Determinations
Regulatory Fairness Act Compliance

Chapter 173-405 WAC, Kraft Pulping Mills
Chapter 173-410 WAC, Sulfite Pulping Mills
Chapter 173-415 WAC, Primary Aluminum Plants

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Chapter 173-405 WAC, Kraft Pulping Mills

Chapter 173-410 WAC, Sulfite Pulping Mills

Chapter 173-415 WAC, Primary Aluminum Plants

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Executive Summary

This report presents the determinations made by the Washington State Department of Ecology (Ecology) as required under Chapters 34.05 and 19.85 RCW, for proposed amendments to the Kraft Pulping Mills, Sulfite Pulping Mills, and Primary Aluminum Plants air quality rules (Chapters 173-405, 173-410, and 173-415 WAC, respectively; the "rules"). This includes the:

- Preliminary Cost-Benefit Analysis (CBA)
- Least-Burdensome Alternative Analysis (LBA)
- Administrative Procedure Act Determinations
- Regulatory Fairness Act Compliance

The Washington Administrative Procedure Act (APA; RCW 34.05.328(1)(d)) requires Ecology to evaluate significant legislative rules to "determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the law being implemented."

The APA also requires Ecology to "determine, after considering alternative versions of the rule…that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives" of the governing and authorizing statutes (RCW 34.05.328(1)(d)).

The APA also requires Ecology to make several other determinations (RCW 34.05.328(1)(a) – (c) and (f) – (h)) about the rule or rules, including authorization, need, context, and coordination.

The Washington Regulatory Fairness Act (RFA; Chapter 19.85 RCW) requires Ecology to evaluate the relative impact of rules that impose costs on small businesses. It compares the relative compliance costs to small businesses to the largest businesses affected.

All determinations are based on the best available information at the time of publication. Ecology encourages feedback (including specific data) that may improve the accuracy of this analysis.

The proposed amendments focus on the three rules covering kraft pulping mills, sulfite pulping mills, and primary aluminum plants, and revising the State Implementation Plan (SIP) to reflect the language amended in each of the three rules.

In response to a rulemaking petition filed by Sierra Club, the US Environmental Protection Agency (EPA) has officially notified Washington (and 35 other states) to amend their startup, shutdown, and malfunction (SSM) rules and update their SIPs to correct identified deficiencies (a SIP call).

The baseline rules allow companies to:

- Avoid enforcement actions for exceeding the emissions standards during startup, shutdown, scheduled maintenance, and malfunction, provided that they reported the excess emissions in a timely manner, and demonstrate the excess emissions were unavoidable.
- Exceed emission standards during soot-blowing and grate cleaning of boilers.

EPA interprets the baseline rule language as limiting EPA and other parties from enforcing applicable requirements in the federal courts. In the baseline rule, unavoidable excess emissions from specific activities, or excess emissions determined unavoidable by the permitting authority, are exempt from emission standards so they are not violations.

The primary purpose of the proposed amendments is to align the rules with the General Regulations for Air Pollution Sources (Chapter 173-400 WAC), the federal Clean Air Act (CAA), and the Environmental Protection Agency (EPA) startup, shutdown and malfunction (SSM) policy. The current interpretation of the federal Clean Air Act in federal court decisions and EPA SSM policy require emission standards apply at all times, even during periods of SSM, and without automatic or discretionary exemptions.

On August 16, 2018, Ecology amended the primary air quality rule covering SSM (Chapter 173-400 WAC, General Regulations for Air Pollution Sources) to align with the SSM SIP Call, EPA SSM policy and the federal Clean Air Act (CAA). This rulemaking proposes amendments that would align Chapters 173-405, 173-410, and 173-415 WAC with the August 2018 adopted Chapter 173-400 WAC to:

- Remove impermissible provisions that excuse excess emissions from enforcement actions.
- Establish new alternative standards for opacity during startup or shutdown, soot-blowing and grate cleaning, and refractory curing.
- Establish processes to set facility-specific alternative emission limits for existing sources that exceed an emissions standard in the SIP.
- Simplify excess emissions notification and reporting requirements.

Other proposed amendments include:

- Updating source testing requirements.
- Correcting typos and clarifying rule language without changing its effect.
- Updating references.

Summary of the proposed amendments:

Proposed amendments applicable to all covered facilities (kraft and sulfite pulping mills and primary aluminum plants):

- Creating a process to establish facility-specific permit limits that exceed an emissions standard in the SIP.
- Simplifying excess emissions notification and reporting requirements.

- Extending the time allowed for submission of source testing reports to 60 days.

Proposed amendments applicable to only kraft or sulfite pulping mills:

- Removing the shield from penalties for excess emissions during startup, shutdown and scheduled maintenance, and replacing with opacity standards for refractory curing, and startup and shutdown of wood-fired or hog-fuel boilers.
- Removing exemption from the opacity emission standard during soot blowing and grate cleaning, and replacing it with an opacity standard.

Proposed amendments applicable to only primary aluminum plants:

- Explicitly requiring monthly secondary emissions performance tests for total fluoride.
- Adding a procedure that allows a primary aluminum plant to request that Ecology reduce the monitoring frequency for total fluoride from monthly to quarterly.

Costs summary

- Potential training or process change for existing certified staff to read opacity during shutdown, startup, refractory curing and soot blowing/grate cleaning at one pulping mill.
- Time cost of staff performing readings during SSM, of $12 to $193 per event at one pulping mill.
- We do not expect additional costs to arise from the proposed amendments at seven other covered pulping mills, due to existing monitoring technology.
- We do not expect additional costs to arise from the proposed amendments at the currently operating primary aluminum plant, due to more-stringent existing operating permit limitations.

Benefits summary

- Rule compliance with U.S. Environmental Protection Agency requirements and federal court decisions, allowing comprehensive enforcement of applicable requirements.
- Avoided emissions violations and penalties that would occur without the proposed alternative emissions standards.
- Potential pathway for facilities to receive site-specific emissions limits under certain circumstances. This allows facilities to continue to operate without significant capital investments.
- Clear and consistent regulatory requirements across air emissions rules.
- Time efficiencies and potential improved information in notifications and reporting of excess emissions.
- Report deadlines that better reflect the time it takes to develop them, allowing facilities to avoid late reporting.
- Protecting human health and the environment through early identification of excess total fluoride emissions by maintaining the monthly total fluoride performance testing frequency for the secondary emission control systems.

- The opportunity to reduce source-testing frequency at aluminum plants, from monthly to quarterly, providing incentive for the facility to maintain secondary total fluoride emissions well below the standard.
- Potential relief from the cost of frequent source-testing through the petition process. If the facility is allowed to reduce to quarterly source-testing, it would save the facility the cost of eight source tests per year (reducing costs by two-thirds).

Ecology concludes, based on a reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the proposed amendments, that the benefits of the proposed amendments are greater than the costs.

After considering alternatives to the contents of the proposed amendments, as well as the goals and objectives of the authorizing statute, Ecology determined that the proposed amendments represent the least-burdensome alternative of possible rule contents meeting these goals and objectives.

Based on our employment research, none of the ten existing facilities (nine currently operating) covered by the proposed amendments are small businesses as defined in the RFA. Consequently, Ecology is not required to prepare a Small Business Economic Impact Statement under the RFA (RCW 19.85.025(4)).

Chapter 1: Background and Introduction

1.1 Introduction

This report presents the determinations made by the Washington State Department of Ecology (Ecology) as required under Chapters 34.05 and 19.85 RCW, for proposed amendments to the Kraft Pulping Mills, Sulfite Pulping Mills, and Primary Aluminum Plants air quality rules (Chapters 173-405, 173-410, and 173-415 WAC, respectively; the "rules"). This includes the:

- Preliminary Cost-Benefit Analysis (CBA)
- Least-Burdensome Alternative Analysis (LBA)
- Administrative Procedure Act Determinations
- Regulatory Fairness Act Compliance

The Washington Administrative Procedure Act (APA; RCW 34.05.328(1)(d)) requires Ecology to evaluate significant legislative rules to "determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the law being implemented." Chapters 1 – 5 of this document describe that determination.

The APA also requires Ecology to "determine, after considering alternative versions of the rule…that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives" of the governing and authorizing statutes (RCW 34.05.328(1)(d)). Chapter 6 of this document describes our determinations for these rules.

The APA also requires Ecology to make several other determinations (RCW 34.05.328(1)(a) – (c) and (f) – (h)) about the rule or rules, including authorization, need, context, and coordination. Appendix A provides the documentation for these determinations.

The Washington Regulatory Fairness Act (RFA; Chapter 19.85 RCW) requires Ecology to evaluate the relative impact of rules that impose costs on small businesses. It compares the relative compliance costs to small businesses to the largest businesses affected. Chapter 7 documents that analysis, when applicable.

All determinations are based on the best available information at the time of publication. Ecology encourages feedback (including specific data) that may improve the accuracy of this analysis.

1.1.1 Background

The state legislature first enacted The Washington Clean Air Act (Chapter 70.94 RCW; "The Act") in 1957. The legislature has periodically amended The Act since that time. The most significant amendments occurred in 1965, 1971, and 1991.

The Act directs Ecology to implement the programs and requirements in the state by adopting rules. It is the intent of the Act that the implementation of programs and rules to control air pollution shall be the primary responsibility of Ecology and the local air agencies.

This statute generally covers the control of emissions from four types of sources – stationary sources; wood stoves; agricultural, silvicultural and open burning; and emissions from motor vehicles through the use of commute trip reduction strategies and programs. In this context, the general goal and objective of the statute is to control air pollution to protect human health and the environment.

The statute directs Ecology to:

- Establish rules to attain and maintain the national ambient air quality standards.
- Limit emissions from sources of air pollutants by rule and by permit.
- Protect and improve general air quality.
- Establish a statewide renewable permit program that assembles all air quality requirements in one permit.
- Take all actions necessary to secure the benefits of the federal Clean Air Act.

This rulemaking focuses on the requirements for specific types of stationary sources. The three rules Ecology is proposing to amend are among those that implement The Act. The following three rules that Ecology is proposing to amend are statewide rules enacted according to RCW 70.94.395 to attain the goal of the Washington Clean Air Act.

1. Chapter 173-405 WAC, Kraft Pulping Mills, regulates air pollution from mills that use the kraft process to produce paper pulp or paper from wood fibers. Covered mills use alkaline solution containing sodium hydroxide and/or sodium sulfide, or other chemical for the pulping process, unless they are covered under Chapter 173-410 WAC.
2. Chapter 173-410 WAC, Sulfite Pulping Mills, regulates air pollution from mills that use a cooking liquor consisting of sulfurous acid, a sulfite or bisulfite salt alone or in any combination, with or without additional mechanical refining or delignification to produce pulp, pulp products, or cellulose from wood fibers.
3. Chapter 173-415 WAC, Primary Aluminum Plants, regulates air pollution from primary aluminum reduction plants that manufacture aluminum by electrolytic reduction. These plants use processes that include pitch storage tanks, paste production plants, anode bake furnaces, potlines, and casthouses.

1.2 Summary of the proposed amendments

The proposed amendments focus on the three rules covering kraft pulping mills, sulfite pulping mills, and primary aluminum plants, and revising the State Implementation Plan (SIP) to reflect amended language in each of the three rules.
In response to a rulemaking petition filed by Sierra Club, the US Environmental Protection Agency (EPA) has officially notified Washington (and 35 other states) to amend their startup, shutdown, and malfunction (SSM) rules and update their SIPs to correct identified deficiencies (a SIP call).[1]

The existing rules allow companies to:

- Avoid enforcement actions for exceeding the emissions standards during startup, shutdown, scheduled maintenance, and malfunction, provided that they reported the excess emissions in a timely manner, and demonstrate the excess emissions were unavoidable.
- Exceed emission standards during soot-blowing and grate cleaning of boilers.

EPA interprets the existing rule language as limiting EPA and other parties from enforcing applicable requirements in the federal courts. In the existing rules, unavoidable excess emissions from specific activities, or excess emissions determined unavoidable by the permitting authority, are exempt from emission standards so they are not violations.

The primary purpose of the proposed amendments is to align the rules with the General Regulations for Air Pollution Sources (Chapter 173-400 WAC), the federal Clean Air Act (CAA), and the Environmental Protection Agency (EPA) startup, shutdown and malfunction (SSM) policy. The current interpretation of the federal Clean Air Act in federal court decisions and EPA SSM policy require emission standards apply at all times, even during periods of SSM, and without automatic or discretionary exemptions.[2]

On August 16, 2018, Ecology amended the primary air quality rule covering SSM (Chapter 173-400 WAC, General Regulations for Air Pollution Sources) to align with the SSM SIP Call, EPA SSM policy and the federal Clean Air Act (CAA). This rulemaking proposes amendments that would align Chapters 173-405, 173-410, and 173-415 WAC with the August 2018 adopted Chapter 173-400 WAC:

- Remove impermissible provisions that excuse excess emissions from enforcement actions.
- Establish new alternative standards for opacity during startup or shutdown, soot-blowing and grate cleaning, and refractory curing.

[1] See State Implementation Plans: Response to Petition for Rulemaking; Restatement and Update of EPA's SSM Policy Applicable to SIPs; Findings of Substantial Inadequacy; and SIP Calls To Amend Provisions Applying to Excess Emissions During Periods of Startup, Shutdown and Malfunction, Final Action [SSM SIP Call], 80 FR 33839 (June 12, 2015).
[2] NRDC v. EPA, 749 F.3d 1055, 1063 (D.C. Cir. 2014) and Sierra Club v. Johnson, 551 F.3d 1019 (D.C. Cir. 2008). See the settlement agreement based on Sierra Club et al. v. Jackson, No. 3:10–cv–04060–CRB (N.D. Cal.).

- Establish processes to set facility-specific alternative emission limits for existing sources that exceed an emissions standard in the SIP.
- Simplify excess emissions notification and reporting requirements.

Other proposed amendments include:

- Update source-testing reporting requirements
- Correcting typos and clarifying rule language without changing its effect.
- Updating references.

Summary of the proposed amendments:

Proposed amendments applicable to all covered facilities (kraft and sulfite pulping mills and primary aluminum plants):

- Creating a process to establish facility-specific permit limits that exceed an emissions standard in the SIP.
- Simplifying excess emissions notification and reporting requirements.
- Extending the time allowed for submission of source testing reports to 60 days.

Proposed amendments applicable to only kraft or sulfite pulping mills:

- Removing the shield from penalties for excess emissions during startup, shutdown and scheduled maintenance, and replacing with opacity standards for refractory curing, and startup and shutdown of wood-fired or hog-fuel boilers.
- Removing exemption from the opacity emission standard during soot blowing and grate cleaning, and replacing it with an opacity standard.

Proposed amendments applicable to only primary aluminum plants:

- Explicitly requiring monthly secondary emissions performance tests for total fluoride.
- Adding a procedure that allows a primary aluminum plant to request that Ecology reduce the monitoring frequency for total fluoride from monthly to quarterly.

1.3 Reasons for the proposed amendments

The primary reason for this rulemaking is to align the startup, shutdown and malfunction related regulatory requirements in these rules with the August 2018 amendments in Chapter 173-400 WAC, and the relevant federal requirements. Without these rule amendments, conflicting regulatory requirements create an uncertain business climate and uncertainties in permit-related decisions.

If Ecology does not make the proposed amendments it will be impossible to enforce the exemptions in these rules, once EPA remove WAC 173-400-107 from the SIP. Moreover, the 10 facilities will not be able to use the alternative emission standards in the August 16 adopted Chapter 173-400 WAC.

As EPA is reviewing the SSM SIP Call for potential repeal or modification, the SSM provisions in Chapter 173-400 WAC were crafted to allow the current provisions to remain in effect until EPA removes WAC 173-400-107 from the SIP, at which point the new alternative opacity standards would become effective.

1.3.1 All covered facilities

1.3.1.1 Creating a process to establish facility-specific permit limits that exceed an emissions standard in the SIP

During the August 2018 rulemaking for Chapter 173-400 WAC, Ecology adopted a process that allows a facility to request and receive approval of a short-term emission limit that exceeds a SIP standard.

The proposed amendments align rules covering kraft and sulfite pulping mills and primary aluminum plants with this past rulemaking. Before a facility could use the new limit, EPA must approve it (in conformance with federal requirements) as a plant specific emission limitation in the SIP.

1.3.1.2 Aligning timing of excess emissions notification and reporting

Ecology is proposing to simplify the timing for when facilities must provide notification of excess emission events that do not threaten human health. Instead of an immediate notification that the facility is having or has discovered an excess emission event, the proposed amendments would bring the notification in line with the required timing of a detailed report of the excess emission event.

1.3.1.2 Extending the time allowed for submission of source testing reports to 60 days

Under the baseline, covered facilities have difficulty complying with the existing 15-day requirement for submitting source testing reports. This is due to report development and review periods necessary to submit accurate reports. Extension of the deadline is intended to reflect more realistic 60-day expectations for how long it takes to create a source testing report for the facilities, based on input from Ecology's Industrial Air Quality section, and covered facilities.

1.3.2 Only kraft or sulfite pulping mills

1.3.2.1 Removing exemptions from emission standard and excuse from penalties, and replacing with opacity standards

The proposed amendments remove exemptions from the opacity emission standard during soot blowing and grate cleaning, and remove the shield from penalties for excess emissions during SSM, and replace them with opacity standards.

EPA determined that rules in Washington and 35 other states are inadequate to comply with federal Clean Air Act requirements. EPA requires states to amend their rules and significantly limit the scope of the SSM enforcement discretion provisions.

The baseline rules allow companies to avoid enforcement actions for exceeding the emissions standards during startup, shutdown, scheduled maintenance, and malfunction, provided that the

companies reported the excess emissions in a timely manner and demonstrate the excess emissions were unavoidable.

EPA interprets the baseline rule language as limiting EPA and other parties from enforcing applicable requirements in the federal courts. In the baseline rule, unavoidable excess emissions from specific activities, or excess emissions determined unavoidable by the permitting authority, are exempt from emission standards so they are not a violation.

EPA directed states to correct their rule deficiencies and submit them into the SIP by November 22, 2016. Ecology did not meet this deadline. EPA is aware of this and Ecology has informed EPA of current status and progress. Ecology anticipates submitting the amended regulations to EPA as a revision to the SIP during the first quarter of 2019.

1.3.3 Only primary aluminum plants

1.3.3.1 Explicitly requiring monthly secondary emissions performance tests for total fluoride

When the secondary testing requirements for total fluoride were established in the baseline rule, it was done by reference to federal law (40 CFR, part 63, subpart LL). At the time, it required monthly emissions performance testing. In 2015, however, the federal standard was revised to semiannual performance testing. To maintain the original intent of the requirement, this rulemaking proposes to explicitly require monthly testing.

1.3.3.2 Adding a procedure that allows a primary aluminum plant to request reduced monitoring frequency

Under the proposed amendments, Ecology may approve a reduction in the frequency of TF testing from monthly to quarterly for sources meeting set criteria showing their monthly average TF emissions are well below the applicable limit. This proposed amendment is intended to reduce monitoring costs at plants that demonstrate they do not need monthly monitoring.

1.4 Document organization

The remainder of this document is organized in the following chapters:

- Baseline and the proposed amendments (Chapter 2): Description and comparison of the baseline (what would occur in the absence of the proposed amendments) and the proposed changes to rule requirements.
- Likely costs of the proposed amendments (Chapter 3): Analysis of the types and sizes of costs we expect impacted entities to incur as a result of the proposed amendments.
- Likely benefits of the proposed amendments (Chapter 4): Analysis of the types and size of benefits we expect to result from the proposed amendments.
- Cost-benefit comparison and conclusions (Chapter 5): Discussion of the complete implications of the CBA.
- Least-Burdensome Alternative Analysis (Chapter 6): Analysis of considered alternatives to the contents of the proposed amendments.

- Small Business Economic Impact Statement (Chapter 7, when applicable): Comparison of compliance costs to small and large businesses; mitigation; impact on jobs.
- Appendix A: RCW 34.05.328 determinations not discussed in previous chapters.

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Chapter 2: Baseline and the Proposed Amendments

2.1 Introduction

We analyzed the impacts of the proposed amendments relative to the baseline of existing rules, within the context of all existing requirements (federal and state laws and rules). This context for comparison reflects the most likely regulatory circumstances that entities will face if the proposed amendments are not adopted. It is discussed in Section 2.2, below.

2.2 Baseline

The baseline for our analyses generally consists of requirements in existing rules and laws. This is what allows us to make a consistent comparison between compliance behavior with and without the proposed amendments.

For this rulemaking, the baseline includes, but is not limited to:

- Chapter 173-405 WAC – Kraft Pulping Mills
- Chapter 173-410 WAC – Sulfite Pulping Mills
- Chapter 173-415 WAC – Primary Aluminum Plants
- Chapter 173-400 WAC – General Regulations for Air Pollution (applicable portions)
- Federal Clean Air Act 42 U.S.C. Chapter 85
- Washington Clean Air Act, Chapter 70.94 RCW

2.3 Proposed amendments

Summary of the proposed amendments:

Proposed amendments applicable to all covered facilities (kraft and sulfite pulping mills and primary aluminum plants):

- Creating a process to establish facility-specific permit limits that exceed an emissions standard in the SIP.
- Aligning timing of excess emissions notification and reporting.
- Extending the time allowed for submission of source testing reports to 60 days.

Proposed amendments applicable to only kraft or sulfite pulping mills:

- Removing the shield from penalties for excess emissions during SSM and replacing with opacity standards for refractory curing, and wood-fired or hog-fuel boilers, during startup and shutdown.

- Removing exemption from the opacity emission standard during soot blowing and grate cleaning, and replacing it with an opacity standard.

Proposed amendments applicable to only primary aluminum plants:

- Explicitly requiring monthly secondary emissions performance tests for total fluoride.
- Adding a procedure that allows a primary aluminum plant to request that Ecology reduce the monitoring frequency for total fluoride from monthly to quarterly.

2.3.1 All covered facilities

2.3.1.1 Creating a process to establish facility-specific permit limits that exceed an emissions standard in the SIP

Baseline
There is no existing process in the rules for a facility to request and receive approval of a short-term emission limit that exceeds a SIP standard. However, the federal and Washington Clean Air Act allows this option.[3] The U.S. Environmental Protection Agency (EPA) would still need to approve higher limits.

Proposed
Through reference to Chapter 173-400 WAC, the proposed amendments establish a detailed process for a facility to request an alternative emission limit, and for Ecology and EPA to review and approve the request. This process requires a written request that is complete with data and documentation sufficient to:

- Specify which emission unit(s) and specific transient mode(s) of operation the requested alternative emission limit is to cover.
- Demonstrate that the operating characteristics of the emission unit(s) prevent meeting the applicable emission standard during the specific transient mode of operation.
- Demonstrate why it is not technically feasible to use the existing control system or any practicable operating scenario that would enable the emission unit to comply with the SIP emission standard.
- Demonstrate that Prevention of Significant Deterioration (PSD) increments,[4] when applicable, and ambient air quality standards in Chapter 173-476 WAC would not be exceeded by emissions from the alternative limit.
- Determine best operational practices for the emission unit(s) involved.
- Demonstrate that the frequency and duration of the specific transient mode of operation is limited to the shortest practicable amount of time.
- Demonstrate the quantity and impact of the emissions resulting from the specific transient mode of operation are the lowest practicably possible.

[3] RCW 70.94.380(1)
[4] See WAC 173-400-116 Increment protection.

- Demonstrate that the emissions allowed by the alternative emission limit would not exceed an applicable emission standard in 40 CFR Parts 60, 61, 62, 63, or 72 (in effect on the date in WAC 173-400-025).

Expected impact
We do not expect this proposed amendment to result in increased costs as compared to the baseline for those facilities that need an alternative emission limitation that is above a SIP emission standard. The amendment would provide a potential benefit by allowing a facility with an individual emission unit (or units) that cannot meet an emission standard during a transient mode of operation a chance to continue to operate without incurring significant capital costs. (Some cost may be incurred to demonstrate they are minimizing the excess emissions to the lowest practicable level.) The facility pursuing an alternative limit under this section would incur the costs to demonstrate the need and appropriateness of an alternative emission limit.

2.3.1.2 Aligning timing of excess emissions notification and reporting

Baseline
Existing rule language requires facilities to provide immediate notification of all excess emission events to avoid enforcement action, followed by a detailed report. They are required to notify their permitting authority as soon as possible about those events that would threaten human health.

Proposed
Through reference to Chapter 173-400 WAC, the proposed amendments bring the rules into line with recent amendments to that chapter. For excess emissions events that do not threaten human health, the proposed amendments specify that notification may be concurrent with the submittal of the detailed report on the normal reporting schedule. Facilities must still report excess emissions that threaten human health as soon as possible, but not later than 12 hours after discovery.

Expected Impact
The proposed amendments are not likely to generate any additional costs as compared to the baseline, as delaying reporting of events with no health impact would not incur a health or environmental cost as compared to the baseline. Allowing for concurrent submittal of the notice and report, however, could generate benefits in the form of time efficiencies, as well as providing more complete information on the causes, resolution, and quantity of excess that occurred compared to the limited information that would be available as the excess emission event is occurring.

2.3.1.3 Extending the time allowed for submission of source testing reports to 60 days

Baseline
Reports must be submitted within 15 days (pulping mills) and 30 days (aluminum plants) of the end of each calendar month.

Proposed
Reports must be submitted within 60 days of completion of each source testing.

Expected impact
The proposed amendment is likely to result in improved compliance with source testing report deadlines, as currently report development and review processes result in difficulty complying with the existing limit. 60 days is in line with information provided by industry.

2.3.2 Only kraft or sulfite pulping mills

2.3.2.1 Removing exemptions from emissions standard and excuse from penalties, and replacing with opacity standards

Baseline
The existing rules exempt emissions during specific maintenance activities from having to meet emission limitations and allow a mill to avoid an enforcement action in certain situations. These include:

- Startup, shutdown, scheduled maintenance, and malfunction, provided that the company reported the excess emissions in a timely manner and demonstrate the excess emissions were unavoidable.
- Soot blowing and grate cleaning.

The baseline exemptions apply to the opacity standards in the SIP during certain maintenance activities. The baseline rule excuses excess emissions during startup, shutdown and scheduled maintenance (like refractory curing) that were unavoidable from an enforcement action (specifically penalty), including those from hog-fuel boilers during startup and shutdown, provided that owner/operators safely perform the operations and document them for excess emissions reporting.

Proposed
The proposed amendments remove exemptions from the opacity emission standard during soot blowing and grate cleaning, and remove the shield from penalties for excess emissions during SSM, and replace them with opacity standards.

Through reference to requirements in WAC 173-400-040(2) for soot blowing or grate cleaning, hog fuel or wood fired boilers, and furnace refractory, the proposed amendments:

- Remove the excuses from enforcement actions provided for startup, shutdown, and scheduled maintenance of emission sources. Instead, it sets alternative opacity standards for some specific actions that the baseline rule does not provide any limitation. The specific actions being proposed (by reference to Chapter 173-400 WAC) to have an alternative standards for opacity include:
    - Startup and shutdown of a wood fired boiler with a dry particulate emission control.
    - Initial startup and curing of new refractory materials installed in a boiler or lime kiln.
- Remove all automatic existing exemptions from emission standards during soot-blowing and grate cleaning (scheduled maintenance), and replace them with an alternative emission standard that will be effective when EPA removes WAC 173-400-107 from the SIP. This is a requirement of the SIP call.

Expected impact

- **Removing of the excuses for excess emission during startup, shutdown and scheduled maintenance:** The SIP call requires Ecology to remove excess emission provisions from the SIP (WAC 173-400-107) because it provides impermissible excuses for planned activities, and it interfere with federal enforcement provisions. Thus, Ecology is proposing to remove WAC 173-400-107 and modify the unavoidable excess emission provisions under WAC 173-400-108 and 109, and keep them as state-only provision. As a result, when EPA approves the removal of WAC 173-400-107 from the SIP, the excess emissions during startup, shutdown, scheduled maintenance, and malfunction will be considered violations. The excuses from enforcement action will be limited to excess emissions during malfunction, if the owners or operators demonstrate that the excess emissions meet the criteria in WAC 173-400-109. However, such excuses for unavoidable excess emission during malfunction will be limited to state-level enforcement discretion, while EPA or citizens may exercise their own enforcement discretions at federal level.

- **Opacity requirements:** Alternate opacity standards would cause the owner/operator to pay more attention to the operation of the equipment or modify operating practices to further minimize emissions.

- **Wood-fired boilers:** The alternative opacity standards would result in the need for wood-fired or hog-fuel boiler owners/operators and boiler and kiln owners/operators to pay attention to controlling particulates (which cause opacity) from being emitted at concentrations that would make it difficult to meet the alternate opacity standards. This means more attention to balancing firebox temperatures against overfire air and fuel feed rates as the unit is started. Owners/Operators may need to engage particulate control devices earlier in the startup process or keep control devices operating later in the shutdown process than current practice. They may need to use clean fuel (including dry wood) during startup and shutdown.

- **Refractory curing:** For refractory curing, the facilities with boilers or lime kilns would have to closely monitor both firebox and refractory temperatures (according to manufacturer's instructions) and use clean fuels (including clean dry wood) to have as efficient combustion as attainable while optimizing the curing of the newly installed firebrick. The facilities would have to engage emission controls as soon as possible during the curing process.

- **Soot blowing and grate cleaning:** For soot blowing and grate cleaning, the owners/operators would need to ensure that they implement work practice standards and/or properly operate control devices so they do not overload the particulate control device with particles from the soot blowing and grate cleaning activities. Under the baseline, owners/operators may overload the particulate control device during this operation but there is no violation since there is no opacity limitation in effect. In some cases, this may require more frequent soot blowing and grate cleaning, or tuning of the boiler.

2.3.3 Only primary aluminum plants

2.3.3.1 Explicitly requiring monthly secondary emissions performance tests for total fluoride

Baseline
The baseline rule initially required monthly testing for total fluoride (TF) from the secondary emission control system, and adopted a federal rule by reference (40 CFR, Part 63, Subpart LL; under WAC 173-415-030(1). In October 2015, the federal rule changed to require semiannual testing. Consequently, the baseline rule requires both semiannual and monthly testing.

Proposed

- Monthly performance testing for total fluoride from secondary emission control systems.

Expected impact
While the change from semiannual to monthly performance testing increases testing frequency on the surface (increasing costs and reducing the likelihood that testing would miss noncompliance), we do not expect it to impact testing frequency at primary aluminum plants in the state. There are currently two primary aluminum plants in Washington State. Only one of these plants is currently operating, and under its air operating permit it is required to perform monthly secondary emissions performance tests for total fluoride. Maintaining the monthly total fluoride performance testing frequency for the secondary emission control system protects human health and the environment through early identification of excess emission of fluorides.

2.3.3.2 Adding a procedure that allows a primary aluminum plant to request reduced monitoring frequency

Baseline
The baseline rule initially required monthly testing for total fluoride (TF) from the secondary emission control system, and adopted a federal rule by reference (40 CFR, Part 63, Subpart LL; under WAC 173-415-030(1). In October 2015, the federal rule changed to require semiannual testing. Consequently, the baseline rule requires both semiannual and monthly testing.

Proposed

- A procedure that allows an aluminum plant to request a reduction in monitoring frequency from monthly to quarterly.

Expected impact
The only primary aluminum plant operating in the state (operated by Intalco) is currently experiencing total fluoride compliance issues. Ecology issued a Notice of Construction approval order allowing Intalco to convert their side work prebake (SWPB) reduction cells (pots) to point feed or Centerwork Prebake (CWPB) technology. This change is expected to reduce the total fluoride emissions from the secondary emission control system by about 25 percent. The proposed amendments would allow the facility to request a quarterly testing frequency. We believe this will motivate the source to maintain the emissions well below the standard because quarterly testing would eliminate the cost of eight performance tests per year.[5]

[5] In future, the permittee could request a reduction in testing frequency for total fluoride, after providing data or documentation that convinces Ecology that less-frequent monitoring is acceptable to ensure air quality protection.

Chapter 3: Likely Costs of the Proposed Amendments

3.1 Introduction

We estimated the likely costs associated with the proposed amendments, as compared to the baseline. Chapter 2 of this document details the proposed amendments and the baseline.

3.2 Cost analysis

3.2.1 All covered facilities

3.2.1.1 Creating a process to establish facility-specific permit limits that exceed an emissions standard in the SIP

We do not expect this rule amendment to result in net costs as compared to the baseline. Facilities needing a site specific emission standard would incur the costs of requesting a facility specific limit, including determinations and demonstrations listed in section 2.3.1 of this document. They could also incur potential compliance costs of meeting site specific standards. These short-term emission standards would be higher than standards in the SIP. In the absence of this rule amendment, facilities would be in violation of emission standards in the SIP, due to technical limitations of their existing control systems and operational limitations. We expect this to result in a net cost reduction, giving facilities a lower-cost option of meeting a short-term site specific standard during a transient mode of operation.

3.2.1.2 Aligning timing of excess emissions notification and reporting

We do not expect this proposed amendment to result in costs as compared to the baseline. See Chapter 2 for discussion.

3.2.1.3 Extending the time allowed for submission of source testing reports to 60 days

We do not expect this rule amendment to result in costs as compared to the baseline. See Chapter 2 for discussion.

3.2.2 Only kraft or sulfite pulping mills

3.2.2.1 Removing exemptions from emissions standard and excuse from penalties, and replacing with opacity standards

The specific actions being proposed by reference to Chapter 173-400 WAC have an alternative emission limitation for opacity for:

- Startup and shutdown of a wood fired (hog-fuel) boiler with a dry particulate emission control.

- Initial startup and curing of new (replaced) refractory materials installed in a boiler or lime kiln.
- Soot blowing and grate cleaning of a wood-fired (hog-fuel) boiler.

These proposed amendments would cause the owner/operator to pay more attention to the operation and maintenance of their equipment. There may be circumstances where the owner/operator would choose to install new emission controls or replace the emitting equipment as an easier or less costly option. Such decisions would be site-specific and based on a facility's budget.

Startup and shutdown of a wood-fired boiler with a dry particulate emission control
A facility typically shuts down for planned maintenance at least once per year. Following a shutdown, the wood-fired boiler is started up. There are also times when a wood-fired boiler may have to shut down for unplanned maintenance during the year and will have to startup after that shutdown. Such unplanned outages are unpredictable by nature.

When restarting the wood-fired boiler, the wood-fired boiler operator and environmental staff would need to assure that the facility is meeting the revised standard. This may result in changes to standard operating practices for starting the boiler and visual opacity readings being performed by the environmental manager or other certified staff at the plant.

Boiler startups will continue to occur regardless of whether the activity is exempt or not. The proposed amendments may require greater care be taken throughout the process and observations by a certified opacity reader. The facility may need to use clean fuel (including dry wood) during startup and shutdown.

Initial startup and curing of new refractory materials installed in a wood-fired boiler or lime kiln
Refractory curing will occur after a major maintenance outage. Not every major maintenance outage requires the firebrick to be replaced or have a major repair. Done well, the firebrick will last five years or more between replacements and repairs. Plant owners likely prefer to avoid the expense of more frequent replacements.

The curing step is part of the restart of the boiler or lime kiln after a maintenance outage. The same staff are involved in refractory curing as are included in startup of this equipment.

The curing occurs regardless of whether the activity is exempt or not so there would be no additional costs associated with curing. However, the proposed amendments require the operator take greater care throughout the process, use dried hog-fuel or wood, and a certified opacity reader take periodic observations.

Soot blowing and grate cleaning
Boiler facilities generally conduct soot blowing and grate cleaning once per shift. This activity is done while all air pollution controls on a source are operating. Because of this, exceedances of the 20 percent opacity emission standard that applies during normal operations are unlikely.

However, the alternative higher standard of 40 percent opacity provides a reasonable margin of error.

Soot blowing and grate cleaning are activities performed by the boiler operator. Opacity reading during these events may involve the environmental manager or certified smoke readers of the facility.

Quantifiable Costs
Paying attention to opacity visually would take less than a minute. We assumed these situations could take longer:

- One hour for wood-fired boiler startup or shutdown.
- Up to four one-hour periods for refractory curing.[6]
- 15 minutes for soot blowing.

At a 2015 hourly wage of $45.84 for an environmental manager or maintenance manager,[7] updated to $48.36 in current dollars using 5.5 percent inflation,[8] this overall range would be $12 to $193 per soot blowing, boiler, or refractory curing event. If non-managerial staff are assigned to do the opacity readings, costs would be lower. Because an existing internal employee would do this work, we did not assume additional overhead as part of this cost.

A potential new cost would be the annual cost for the opacity reader to be certified. The certification involves a bi-annual one day testing process done at multiple locations around the state by more than one certification service. Many sources are already required to have certified opacity readers on staff, so there would be no added cost for those facilities. Facilities that do incur this cost would pay:

- Initial certification cost of $325 to $350.
- Annual recertification cost of $400 to $450.[9]

Facilities may also comply with the opacity standard for wood-fired boilers by using only clean fuel, as identified in 5.b. in Table 3 in 40 CFR Part 63, subpart DDDDD. Clean fuel includes dry wood, so boiler operators would need to document the use of dry wood, and potentially change practices to ensure wood is dry (no more than 20 percent moisture). Some facilities likely currently cover their wood. Facilities with natural gas could also use natural gas during this period. As a result of this additional compliance option, costs may be lower than described above.

[6] Communication between Shon Kraley and Alan Newman (2017). Email, subject: "RE: Opacity Memo-Draft (002).docx" 7/5/17. See documentation for Regulatory Analyses for chapters 173-400 and -401 WAC, February 2018, Ecology publication number 18-02-003.
[7] US Bureau of Labor Statistics (2015). Wages by Area and Occupation, 2015. Washington State. Median wage for environmental engineers.
[8] US Bureau of Labor Statistics (2017). Consumer Price Index.
[9] Communication with Gary Huitsing (2018). Email 1/11/18. "RE: Cost of opacity certification". Costs reflect prices at Smoke School, Inc. and Northwest Opacity Certification "Smoke School".

During previous rulemaking, we received input regarding the viability of using clean fuel (including clean dry woody fuel with less than 20 percent moisture content) as a work practice standard alternative during boiler start up. Specifically, concern was expressed that existing supplies of dry fuel are not adequate to raise fireboxes and particulate control systems to minimum operating temperatures in time to comply with the requirement of the work practice standard, including the requirement to use clean fuel, and operate dry particulate control within an hour of using non-clean fuel, and ultimately meet 20 percent opacity within four hours after the boiler starts supplying useful thermal energy. While Ecology cannot allow de facto exemptions in such situations, we believe facilities encountering this issue could make some physical/operational changes to comply with the proposed amendments.

We believe facilities could meet the alternative opacity requirements using facility-specific options, including:

- Drying hog fuel.
- Using natural gas (where possible) for startup.
- Purchasing dry wood fuels specifically for startup of the boiler.
- Providing storage to keep an adequate supply of dry fuel for startups.
- Using auxiliary fuel such as on-road diesel (alone or spread on hog fuel) during unit startup.
- Energizing their particulate control earlier (if technologically feasible).

Since these compliance choices are unique to some facilities with wood-fired boilers with existing dry particulate control technologies attempting to meet the alternative standard of using clean fuels (rather than the 40 percent opacity standard) during boiler startup, we could not confidently assume to what degree facilities would use these compliance options.

Applicability to technology and practices at mills in Washington State
The following pulping mills are covered by the proposed amendments:

- Cosmo Specialty Fibers, Cosmopolis
- Kapstone, Longview
- Port Townsend Paper, Port Townsend
- WestRock, Tacoma
- Boise Paper, Wallula
- Nippon Dynawave, Longview
- GP Camas, Camas
- Norpac Paper, Longview

Ecology's permit managers for these facilities indicated that all but one kraft or sulfite pulping mill in the state has continuous opacity monitoring systems (COMS), and so would likely not incur the additional costs described above, under the proposed amendments.

The remaining mill cannot install COMS because of technological limitations applicable to their process. This one facility currently uses visual readings of emissions, but not during periods of SSM or soot blowing/grate cleaning activities. This means while they have staff already certified in performing the readings, they may need to some additional training or process change to take opacity readings during periods of startup, shutdown, soot blowing, and grate cleaning. Per our estimates above, the additional time spent on these activities would then cost between $12 and $193 per event.

3.2.3 Only primary aluminum plants

3.2.3.1 Explicitly requiring monthly secondary emissions performance tests for total fluoride

We do not expect these rule amendments to result in additional costs compared to the baseline costs. See Chapter 2 for discussion.

3.2.3.2 Adding a procedure that allows a primary aluminum plant to request reduced monitoring frequency

We do not expect these rule amendments to result in additional costs compared to the baseline costs. See Chapter 2 for discussion.

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Chapter 4: Likely Benefits of the Rule Amendments

4.1 Introduction

We estimated the likely benefits associated with the proposed amendments, as compared to the baseline (both described in Chapter 2 of this document).

4.2 Benefit analysis

4.2.1 All covered facilities

4.2.1.1 Creating a process to establish facility-specific permit limits that exceed an emissions standard in the SIP

The rule amendment would provide a potential benefit by allowing facilities with individual emission units that are unable to comply with a SIP emission standard during a specific operating scenario to get a site-specific limit for that scenario, thus avoiding a violation. The process to approve the higher permit-specific limit would ensure that alternatives to the emission standard are evaluated and ambient air quality standards would not be exceeded.

4.2.1.2 Aligning timing of excess emissions notification and reporting

Allowing for concurrent issuance of the notice and report could generate benefits in the form of time efficiencies in streamlining, as well as better information provided about the excess emissions event. Reporting within 12 hours would be limited to exceedances that represent a potential threat to human health so there would be fewer reports written and reviewed.

4.2.1.3 Extending the time allowed for submission of source testing reports to 60 days

Allowing additional time for completion and submission of source testing reports would allow mills and aluminum plants to maintain compliance with reporting requirements while acknowledging the time necessary for report development and review. Based on information provided by kraft and sulfite pulping mills, and aluminum plants, 60 days is the amount of time necessary to complete and submit a source test report to Ecology.

4.2.2 Only kraft or sulfite pulping mills

4.2.2.1 Removing exemptions from emissions standard and excuse from penalties, and replacing with opacity standards

The proposed amendments would allow certain facilities to startup, shutdown, and perform soot blowing/grate cleaning activities without violations and incurring penalties. This would allow for ongoing operations and cost savings as compared to a more stringent federal plan without alternative opacity standards.

In addition, having a rule that complies with EPA requirements and federal court decisions would allow the EPA and citizens to comprehensively enforce applicable requirements in federal courts. This would prevent potential loss of environmental values for clean air and visibility due to exemption of excess emissions events without comprehensive regulation. The regulations would also then be enforceable by the state, unlike a federal plan not incorporated into rule.

Businesses would also benefit in facing clear and consistent regulatory requirements.

4.2.3 Only primary aluminum plants

4.2.3.1 Explicitly requiring monthly secondary emissions performance tests for total fluoride (TF), and provide process to reduce the frequency to quarterly

We do not expect a change in performance testing frequency at the only operating primary aluminum plant in the state. See Chapter 2 for discussion.

4.2.3.2 Adding a procedure that allows a primary aluminum plant to request reduced monitoring frequency

Based on the historical fluoride emissions data, there are potential environmental and human health benefits to maintaining a minimum monthly testing frequency in rule to allow for early identification of excess fluoride emissions. When the facility meets the TF emission standard consistently for a long enough period, the proposed amendment would provide the owner or operator a procedure to request that Ecology reduce the testing from monthly to quarterly, by demonstrating that their secondary TF emissions are well below the emission standard and have low variability.

Ecology issued a Notice of Construction approval order to the operating facility allowing them to convert their Side Work Prebake (SWPB) reduction cells (pots) to point feed or Centerwork Prebake (CWPB) technology. This change is expected to reduce the total fluoride emissions from the secondary emission control system by about 25 percent. If this technology enables the source to reduce their secondary TF emission to qualify for the quarterly source-testing frequency, it will save the facility the cost of eight source tests per year (reducing costs by two-thirds).

Chapter 5: Cost-Benefit Comparison and Conclusions

5.1 Summary of the costs and benefits of the proposed amendments

Costs summary:

- Potential training or process change for existing certified staff to read opacity during shutdown, startup, refractory curing and soot blowing/grate cleaning at one pulping mill.
- Time cost of staff performing readings during SSM, of $12 to $193 per event at one pulping mill.
- We do not expect additional costs to arise from the proposed amendments at seven other covered pulping mills, due to existing monitoring technology.
- We do not expect additional costs to arise from the proposed amendments at the currently operating primary aluminum plant, due to more-stringent existing operating permit limitations.

Benefits summary:

- Rule compliance with EPA requirements and federal court decisions, allowing comprehensive enforcement of applicable requirements.
- Avoided emissions violations and penalties that would occur without the proposed alternative emissions standards.
- Potential pathway for facilities to receive site-specific emissions limits under certain circumstances. This allows facilities to continue to operate without significant capital investments.
- Clear and consistent regulatory requirements across air emissions rules.
- Time efficiencies and potential improved information in notifications and reporting of excess emissions.
- Report deadlines that better reflect the time it takes to develop them, allowing facilities to avoid late reporting.
- Protecting human health and the environment through early identification of excess total fluoride emissions by maintaining the monthly total fluoride performance testing frequency for the secondary emission control systems.
- The opportunity to reduce source-testing frequency at aluminum plants, from monthly to quarterly, providing incentive for the facility to maintain secondary total fluoride emissions well below the standard.
- Potential relief from the cost of frequent source-testing through the petition process. If the facility is allowed to reduce to quarterly source-testing, it would save the facility the cost of eight source tests per year (reducing costs by two-thirds).

5.2 Conclusion

Ecology concludes, based on reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the proposed amendments, that the benefits of the proposed amendments are greater than the costs.

Chapter 6: Least-Burdensome Alternative Analysis

6.1 Introduction

RCW 34.05.328(1)(e) requires Ecology to "...[d]etermine, after considering alternative versions of the rule and the analysis required under (b), (c), and (d) of this subsection, that the rule being adopted is the least burdensome alternative for those required to comply with it that would achieve the general goals and specific objectives stated under (a) of this subsection." The referenced subsections are:

> (a) Clearly state in detail the general goals and specific objectives of the statute that the rule implements;
>
> (b) Determine that the rule is needed to achieve the general goals and specific objectives stated under (a) of this subsection, and analyze alternatives to rule making and the consequences of not adopting the rule;
>
> (c) Provide notification in the notice of proposed rulemaking under RCW 34.05.320 that a preliminary cost-benefit analysis is available. The preliminary cost-benefit analysis must fulfill the requirements of the cost-benefit analysis under (d) of this subsection. If the agency files a supplemental notice under RCW 34.05.340, the supplemental notice must include notification that a revised preliminary cost-benefit analysis is available. A final cost-benefit analysis must be available when the rule is adopted under RCW 34.05.360;
>
> (d) Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented;

In other words, to be able to adopt the rule, Ecology is required to determine that the contents of the rule are the least burdensome set of requirements that achieve the goals and objectives of the authorizing statute(s).

Ecology assessed alternatives to the content of the proposed amendments, and determined whether they met the goals and objectives of the authorizing statutes. Of those that would meet these goals and objectives, Ecology determined whether those chosen for the proposed amendments were the least burdensome to those required to comply with them.

6.2 Goals and objectives of the authorizing statute: Chapter 70.94 RCW

Washington's Clean Air Act authorizes the rules amended by this rulemaking and directs Ecology to:

- Establish rules to attain and maintain the national ambient air quality standards.
- Limit emissions from sources of air pollutants by rule and by permit.

- Protect and improve general air quality for current and future generations.
- Prevent injury to plant, animal life, and property.
- Establish a statewide renewable permit program that assembles all air quality requirements in one permit.
- Take all actions necessary to secure the benefits of the federal Clean Air Act.

In addition, the EPA determined in 2015[10] that rules in Washington and 35 other states are inadequate to comply with federal Clean Air Act requirements. EPA requires states to revise their rules and significantly limit the scope of the SSM provisions. EPA interprets our existing rule as limiting EPA and citizens from seeking enforcing applicable requirements in the federal courts. The baseline rule establishes that during the specific activities listed in the rule, or that may be determined by the permitting authority as unavoidable excess emissions, are exempt from that limit or SIP emission standards and are not a violation.

6.3 Alternatives considered and why they were not included

6.3.1 Streamlining the three rules by removing redundant language

Stakeholders requested that Ecology streamline the three rules in this rulemaking along with their respective permits. This, according to the stakeholders, would reduce their regulatory burden and save resources as they currently follow a number of different federal, state, and local requirements for the same pollutant.

Ecology considered this request and determined that streamlining the rule would require re-scoping the project. Ecology would need to complete a thorough analysis before entering into such rulemaking as federal and state requirements for SSM have different averaging periods, units of measure, and/or compliance requirements.[11] Ecology committed to adding this proposal to the rules docket for future rulemaking consideration.

The three rules included in this rulemaking define Ecology's authority to regulate facilities that contribute to air pollution; the rules must be maintained regardless of where final requirements for facilities may reside (federal, local clean air agencies, etc.).

6.3.2 Not proposing amendments to the Startup, Shutdown, Malfunction (SSM) rules

Stakeholders requested that Ecology not propose amendments to the SSM rules at all. Ecology was unable to accommodate these requests. It is necessary for Ecology to propose amendments to the SSM rules to bring the three rules included in this rulemaking in line with the August 2018 updates to Chapter 173-400 WAC – General Regulations for Air Pollution Sources. The

[10] A copy of EPA's determination is available at https://www3.epa.gov/airquality/urbanair/sipstatus/docs/20150522fr.pdf

[11] For information regarding the scope of this rulemaking, see Ecology's CR-101 for this rulemaking, published June 20, 2018 (*Washington State Register*, 18-13-113, http://lawfilesext.leg.wa.gov/law/wsr/2018/13/18-13-113.htm).

revisions to Chapter 173-400 WAC were necessary to comply with the EPA's 2015 SIP call, which required that Ecology update SSM rules. If these three rules are not revised, the owners and operators of the pulping mills and aluminum plants will not be able to use the alternative opacity standards of 40 percent; instead they will be required to meet the otherwise applicable opacity standard of 20 percent.

6.3.3 Incorporating the federal work practice as the alternative standard for startup at aluminum smelters

Stakeholders suggested that Ecology incorporate by reference federal work practice standards for startup and shutdown periods for aluminum smelters (40 C.F.R. 63.854). This would reduce the facility's need to request alternative emission standards for the startup or shutdown of their processes.

Federal work practice standards are already adopted as an applicable emissions standard in WAC 173-415-015. The work practice standard in 40 C.F.R. 63.854 is set for hazardous air pollutants, and may not be relevant to reduce emissions of criteria pollutants such as sulfur dioxide (SO_2). The only operating aluminum production facility is causing SO_2 National Ambient Air Quality Standards (NAAQS) exceedances in the area, while using the same federal work practice standard.

6.4 Conclusion

After considering alternatives to the contents of the proposed amendments, as well as the goals and objectives of the authorizing statute, Ecology determined that the proposed amendments represent the least-burdensome alternative of possible rule contents meeting these goals and objectives.

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Chapter 7: Regulatory Fairness Act Compliance

7.1 Introduction

Ecology analyzed the compliance costs of the proposed amendments in Chapter 3 of this document. We determined that no Small Business Economic Impact Statement is required under the Regulatory Fairness Act (RFA; chapter 19.85 RCW) for the proposed amendments.

Based on our employment research, none of the ten existing facilities (nine currently operating) covered by the proposed amendments are small businesses as defined in the RFA.[12] Consequently, Ecology is not required to prepare a Small Business Economic Impact Statement under the RFA (RCW 19.85.025(4)).

[12] Washington State Employment Security Department (2018); Websites for facility ownership at highest owner/operator level (see References list).

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List of Acronyms

1.	APA	Adminstrative Procedure Act
2.	CAA	Clean Air Act
3.	CBA	Cost Benefit Analysis
4.	CFR	Code of Federal Regulation
5.	COMS	Continous opacity monitoring systems
6.	CWPB	Centerwork Prebake
7.	EPA	Environmental Protection Agency
8.	FIP	Federal Implementation Plan
9.	LBA	Least-Burdensome Alternative
10.	NAAQS	National Ambien Air Quality Standards
11.	PSD	Prevention of Significant Deterioration
12.	RCW	Revised Code of Washington
13.	RFA	Regulatory Fairness Act
14.	SIP	State Implementation Plan
15.	SSM	Startup, shutdown, and malfunction
16.	SWPB	Side Work Prebake
17.	TF	Total floride
18.	VOC	Volatile Organic Compounds
19.	WAC	Washington Administrative Code

Appendix A
Administrative Procedure Act (RCW 34.05.328) Determinations

A. RCW 34.05.328(1)(a) – Clearly state in detail the general goals and specific objectives of the statute that this rule implements.

See Chapter 6.

B. RCW 34.05.328(1)(b) –

1. Determine that the rule is needed to achieve the general goals and specific objectives of the statute.

See Chapters 1 and 2.

2. Analyze alternatives to rulemaking and the consequences of not adopting this rule.

Failure to align Chapters 173-405, 410, and 415 WAC with the SSM SIP Call-related changes in Chapter 173-400 WAC prohibit the 10 major Washington facilities subject to Chapters 173-405, 410, and 415 WAC from using the alternative opacity emission standards during startup and shutdown as negotiated during the Chapter 173-400 WAC SSM rulemaking.

Please see the Least Burdensome Alternative Analysis, Chapter 6 of this document, for more discussion of alternative rule content considered.

C. RCW 34.05.328(1)(c) - A preliminary cost-benefit analysis was made available.

When filing a rule proposal (CR-102) under RCW 34.05.320, Ecology provides notice that a preliminary cost-benefit analysis is available. At adoption (CR-103 filing) under RCW 34.05.360, Ecology provides notice of the availability of the final cost-benefit analysis.

D. RCW 34.05.328(1)(d) – Determine that probable benefits of this rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented.

See Chapters 1 – 5.

E. RCW 34.05.328 (1)(e) - Determine, after considering alternative versions of the analysis required under RCW 34.05.328 (b), (c) and (d) that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives stated in Chapter 6.

Please see Chapter 6 and the record for this rulemaking.

F. RCW 34.05.328(1)(f) - Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law.

The actions required by the amendments in this rulemaking would not require covered parties to violate existing federal or state laws or rules. Where the new requirements diverge from federal requirements, Ecology possesses the authority to affect requirements more stringent that those set by EPA.

G. RCW 34.05.328 (1)(g) - Determine that the rule does not impose more stringent performance requirements on private entities than on public entities unless required to do so by federal or state law.

No, it does not. The rules amended by this rulemaking apply to a particular set of private entities (pulp and paper mills and aluminum smelters). There are no public entities operating in Washington State that would be regulated under these rules.

H. RCW 34.05.328 (1)(h) Determine if the rule differs from any federal regulation or statute applicable to the same activity or subject matter.

Yes.

If yes, the difference is justified because of the following:

☐ (i) A state statute explicitly allows Ecology to differ from federal standards. [If checked, provide the citation included quote of the language.]

☒ (ii) Substantial evidence that the difference is necessary to achieve the general goals and specific objectives stated in Chapter 6.

The federal regulation requirement relaxed the performance testing frequency for total fluoride from the secondary emission control system from monthly to semi-annually. The primary aluminum facilities in the state have shown some history of exceedances of the secondary emission standard for total fluoride. Therefore, Ecology is maintaining the monthly testing frequency to avoid undetected exceedances of the emission standard.

I. RCW 34.05.328 (1)(i) – Coordinate the rule, to the maximum extent practicable, with other federal, state, and local laws applicable to the same subject matter.

To coordinate the rule with existing state, federal, and local regulations, Air Quality staff worked closely with staff from Ecology's Industrial Section of the Solid Waste Program (formerly known as Waste 2 Resources) as well as EPA Region 10 staff that focus on air quality and the SIP.