



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 173-400 WAC
General Regulations for Air Pollution
Sources*

and

*Chapter 173-401 WAC
Operating Permit Regulation*

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Chapter 173-400 WAC General Regulations for Air Pollution Sources

and

Chapter 173-401 WAC Operating Permit Regulation

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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 the proposed amendments to the General Regulation for Air Pollution Sources rule and the Operating Permit Regulation rule (Chapters 173-400 and 173-401 WAC; the “rules”). This includes the:

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

Proposed amendments focus on the General Regulations for Air Pollution Sources, the Operating Permit Regulation, and revising the State Implementation Plan (SIP). Because of federal court rulings, the U.S. Environmental Protection Agency (EPA) has officially notified Washington (and 35 other states) to change their current rules and update their SIPs to correct the identified deficiencies (a SIP call).

The primary purpose of this revision is to align Chapter 173-400 WAC with federal court decisions that emission standards apply at all times, even during periods of startup, shutdown and malfunction (SSM), and without automatic or discretionary exemptions. These decisions and EPA’s SIP call require us to correct overly broad enforcement discretion and other provisions that would bar enforcement by EPA or other parties in federal court. Existing Ecology rules exempt exceedances of an emission standard during SSM, or allow avoidance of enforcement actions against a company for these emissions.

SSM-related amendments:

- Remove exemptions for emissions and replace with opacity standards.
- Create a process to establish facility specific permit limits for existing sources that exceed an emissions standard in the SIP.
- Simplify the notification process related to excess emission events.
- Align unavoidable excess emission provisions with federal limitations, EPA policy, and the state law.

Other amendments:

- Require an agency to post notice of a public comment period and draft permits on its website instead of requiring publication in a newspaper and a physical location for permit materials. Exclude holidays from the public comment period.
- Outlaw existing and new wigwam and silo burners.
- Simplify application of nonroad engine requirements.
- Update the definition of volatile organic compounds (VOC) to reflect the current federal definition.
- Correct typos and clarify rule language without changing its effect.

- Update adoption by reference of federal rules from January 1, 2016 to January 24, 2018.

Costs summary:

- Estimated costs attributable to the proposed rule amendments include labor costs incurred in paying more attention during startup, shutdown, and soot blowing activities. The frequency of these events would be facility specific. We estimated an overall cost range of \$12 to \$193 per soot blowing, boiler, or refractory curing event.
- Facilities not currently required to have a certified opacity reader on staff would incur costs of certification, including:
 - Initial certification cost of \$325 to \$350.
 - Annual recertification cost of \$200 to \$225.

Benefits summary:

- The proposed rule amendments to opacity standards would allow sources to startup, shutdown, and perform soot blowing activities without violations and incurring penalties.
- Having a rule that complies with EPA requirements and interpretations would allow 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 benefit in facing clear and consistent regulatory requirements.
- The proposed process to establish facility specific limits provides a potential benefit of allowing market entry to sources with individual emission units that may need additional time to come into compliance and are not currently identified.
- 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 initially provided about the excess emissions event.
- Greater flexibility for agency, quicker communication with public and make information more widely available. Continued newspaper notice for an additional year reduces the impact to communities that rely on this notification method, after which a small cost-savings would be a benefit.
- Excluding state holidays from public comment periods could result in better or more comprehensive public input.
- Evaluating impacts from nonroad engines on a project-by-project basis rather than on a site basis is more representative of our original intent on how the section should operate.

After considering alternatives to the proposed rule's contents, as well as the goals and objectives of the authorizing statute, Ecology determined that the proposed rule represents the least-burdensome alternative of possible rule contents meeting these goals and objectives. We also determined that no Small Business Economic Impact Statement is required under the Regulatory Fairness Act (RFA; chapter 19.85 RCW) for the proposed rule amendments.

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 the proposed amendments to the General Regulation for Air Pollution Sources rule and the Operating Permit Regulation rule (Chapters 173-400 and 173-401 WAC; 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 that determination.

The APA also requires Ecology to make several other determinations (RCW 34.05.328(1)(a) – (c) and (f) – (h)) about the rule, 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 proposed rules that impose costs on businesses in an industry. 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. These rules apply statewide, except where a local air agency has implemented its own rules that are at least as stringent as Ecology's 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.

The two rules Ecology is amending implement The Act. 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. This rulemaking focuses on the requirements for stationary sources. 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.

Chapter 173-400 WAC, General Regulations for Air Pollution Sources, establishes the regulatory framework to ensure that healthy air quality exists in Washington, including meeting federal air quality standards.

Chapter 173-401 WAC, Operating Permit Regulation, establishes a permit program that consolidates all air quality requirements for large industries in a single permit.

1.2 Summary of the proposed rule amendments

Proposed amendments focus on the General Regulations for Air Pollution Sources, the Operating Permit Regulation, and revising the State Implementation Plan (SIP). Because of federal court rulings, the US Environmental Protection Agency (EPA) has officially notified Washington (and 35 other states) to change their current rules and update their SIPs to correct the identified deficiencies (a SIP call¹).

The primary purpose of this revision is to align Chapter 173-400 WAC with federal court decisions² that emission standards apply at all times, even during periods of startup, shutdown and malfunction (SSM), and without automatic or discretionary exemptions. These decisions and

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.).

EPA's SIP call require us to correct overly broad enforcement discretion and other provisions that would bar enforcement by EPA or other parties in federal court. Existing Ecology rules exempt exceedances of an emission standard during SSM, or allow avoidance of enforcement actions against a company for these emissions.

Under Ecology's existing rule as well as those of two other permitting agencies³, facilities are not required to meet emission limits during periods of SSM, and EPA interprets our rule language to bar enforcement of excess emissions during periods of SSM under the federal Clean Air Act. Additionally, the state rule includes affirmative defense and director's discretion provisions, and automatic exemptions that violate the federal Clean Air Act. We must update our rules to comply with the federal court decisions and the SIP call. This rulemaking seeks to remove impermissible provisions, establish new alternative standards for opacity during startup or shutdown, and establish a process to set facility specific permit limits for existing sources that exceed an emissions standard in the SIP.

We are also proposing to change public notification procedures based on a recent EPA rule that allows web posting of public notice of the start of a public comment period and draft permits in the Prevention of Significant Deterioration (PSD) and Air Operating Permit programs⁴. We are proposing to extend web posting to these programs and our small source pre-construction permitting program. We are also proposing to exclude Washington holidays from the day count in a 30-day public comment period. We propose to continue requiring publishing notice in a newspaper until June 30, 2019, to address concerns that some communities still rely on the one-day newspaper notice.

This rulemaking also seeks to address stakeholder concerns about impacts from small nonroad engines (hand-held gasoline equipment such as lawnmowers, small generators, and outdoor power tools) while providing ongoing environmental protection by evaluating impacts from nonroad engines on a project-by-project basis rather than on a site basis. We believe the project basis is more representative of operations performed by nonroad engines and the original intent for how the section would operate.

Other proposed rule amendments include:

- Outlawing wigwam and silo burners.
- Updating the definition of volatile organic compounds (VOC) to reflect the current federal definition.
- Correcting typos and clarifying rule language without changing its effect.
- Updating adoption by reference of federal rules from January 1, 2016 to January 24, 2018.

Below is a summary of the proposed rule amendments:

³ The EPA SIP Call affects the Southwest Clean Air Agency and the Energy Facility Site Evaluation Council because their rules are also in the SIP. They intend to change their rules based on our revised rule and send a SIP revision to EPA, which we will submit on their behalf. Neither agency will proceed with rulemaking until Ecology has finished this rule amendment.

⁴ See 81 Federal Register 71613 (October 18, 2016).

SSM-related provisions:

- Remove exemptions for emissions and replace with opacity standards.
- Create a process to establish facility specific permit limits for existing sources that exceed an emissions standard in the SIP.
- Simplify the notification process related to excess emission events.
- Align unavoidable excess emission provisions with federal limitations, EPA policy, and the state law.

Other provisions:

- Require an agency to post notice of a public comment period and draft permits on its website instead of requiring publication in a newspaper and a physical location for permit materials. Exclude holidays from the public comment period.
- Outlaw existing and new wigwam and silo burners.
- Simplify application of nonroad engine requirements.
- Update the definition of volatile organic compounds (VOC) to reflect the current federal definition.
- Correct typos and clarify rule language without changing its effect.
- Update adoption by reference of federal rules from January 1, 2016 to January 24, 2018.

1.3 Reasons for the proposed rule amendments

1.3.1 Remove exemptions for emissions and replace 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 revise their rules and significantly limit the scope of the SSM provisions.

Our existing rules exempt emissions during specific activities and times from having to meet emission limitations or allow a company to avoid an enforcement action in certain situations. These include:

- Periods of startup, shutdown and malfunction (SSM).
- Affirmative defense: An affirmative defense will excuse the emissions of a source that exceed an emissions standard during startup, shutdown, and malfunction from being a violation if the source can demonstrate that it met certain criteria.
- Director's discretion: A director's discretion allows an agency to determine whether an instance of excess emissions is not a violation of an emission limitation.
- Automatic exemptions: The current rule automatically exempts soot blowing or grate cleaning of hog-fuel (wood-fired) boilers, and startup of orchard heating units from all emission standards. The sulfur dioxide standard does not apply when there is no feasible method of reducing the concentration.

EPA interprets our existing rule as limiting EPA and other parties from enforcing applicable requirements in the federal courts. Currently in the state 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 we have informed EPA of our status and progress. We anticipate submitting our amended regulations to EPA as a revision to the SIP during the winter of 2018.

If Washington does not correct its rule deficiencies, EPA could impose a Federal Implementation Plan (FIP). Then Washington businesses would need to comply with the federal plan even though the conflicting state rule would still exist. Further, Ecology and the local air agencies would be unable to enforce the federal plan until an agency adopted the plan by reference in their rule. Conflicting regulatory requirements create an uncertain business climate and uncertainties in permit-related decisions.

The federal plan could simply remove the rule provision EPA identified as “substantially inadequate to meet Clean Air Act requirements” from the SIP⁵, i.e., WAC 173-400-107. The SIP call does not identify the complete list of affirmative defense, director’s discretion, and automatic exemptions in the rule. The proposed rule would allow these 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.

1.3.2 Create a process to establish facility specific permit limits that exceed an emissions standard in the SIP

We developed a proposed process for a source to request and receive approval of a short-term emission limit that exceeds a standard in the SIP. The proposal describes the contents of the request and how a local air agency and Ecology (as required by state law⁶) would process the request. Before a source could use the new limit, EPA must approve it (in conformance with federal requirements) as a plant specific emission limitation in the SIP.

The SIP call does not require this proposed change. The regulated industry proposed it as a method to allow for an operating condition at an individual plant or emission unit that we cannot identify at this time. It is an alternative process to establishing alternative emission standards through rulemaking, and should be more streamlined than the rulemaking process.

1.3.3 Simplify the notification process related to excess emission events

We are proposing clarifications to the timing for notification of excess emission events that do not threaten human health. Rather than an immediate notification that the source is having or has

⁵ See 80 Federal Register 33973 (June 12, 2015).

⁶ RCW 70.94.380(1) requires Ecology approval of an emission control requirement from a local air agency that is less stringent than an Ecology rule requirement.

discovered an excess emission event, the proposed change would bring the notification in line with the required timing of a detailed report of the excess emission event.

This proposed change is not required by the SIP call, but was a streamlining request from industry.

1.3.4 Align unavoidable excess emission provisions with federal limitations, EPA policy, and the state law

We are proposing modifications to existing language in the unavoidable excess emissions section (WAC 173-400-109) that was intended to comply with EPA’s previous excess emissions policy requirements. The modification would align the criteria closer to what EPA requires in its current excess emissions policy⁷, while addressing the requirements in Washington state law⁸ concerning excusing unavoidable excess emission events from an enforcement action. In other words, emissions that exceed emission limits violate the state rule but they may not be subject to a penalty if the emissions are unavoidable.

The SIP call requires making these proposed changes.

1.3.5 Change public notice requirements and public comment period

Based on a change to EPA’s public notice requirements for the Prevention of Significant Deterioration Program (PSD) and the Title V Program (Operating Permit Program), we are proposing to replace our existing public notice requirements with web posting of notices of public comment periods and hearings for proposed permits for our major and minor construction permitting programs and other actions that require a mandatory public comment period. Existing federal and Washington rules require publishing notice in a newspaper and providing access to documents at a physical location. Electronic public notice would enable us to communicate with the public more quickly and efficiently. Additionally, it would provide cost savings on newspaper publications. We are proposing to continue requiring publishing notice in a newspaper until June 30, 2019 to address concerns that some communities still rely on newspaper notice. Even after this change is in effect, public notices could still be supplemented by other means of notifying the public of comment periods on proposed permits and other actions.

All seven air agencies and Ecology agreed to change their public notice provisions to a mandatory web-based notice.

This proposed change applies to the public notice requirements in both rules – Chapters 173-400 and 173-401 WAC.

1.3.6 Simplify application of nonroad engine requirements

Ecology received requests from stakeholders to revise this provision to address trivial-scale nonroad engines and other adjustments to simplify application of the requirements. To address

⁷ 80 Federal Register 33976 – 33982 (June 12, 2015). An excess emissions event will be a violation of the emissions standard.

⁸ RCW 70.94.431(8)

stakeholders' concerns about impacts from nonroad engines on air quality while providing ongoing environmental protection, we propose evaluating impacts from nonroad engines on a project-by-project basis rather than the collection of small nonroad engines that a source has and uses to perform specific tasks like equipment and landscaping maintenance. We believe the project basis is more representative of operations performed by non-road engines and our original intent for how the section would operate.

1.3.7 Outlaw wigwam and silo burners

Wigwam burners, also called “teepee” burners, and silo burners are crude devices to burn wood waste produced at lumber mills. Wigwam burners are usually made of metal with a mesh dome ceiling. Silo burners are cylindrical and may be made of either metal or refractory material. These burners have poor combustion characteristics leading to the production of great quantities of smoke, carbon monoxide, organic compounds resulting from incomplete combustion, unburnt sawdust, and live cinders. Smoke and unburnt sawdust create a nuisance. Live cinders from a wigwam burner create a nuisance and can be a fire hazard.

Starting in 1970, wigwam burners have shut down as they were unable to meet increasingly stringent emission standards or more lucrative uses of the wood waste became available. Operators have transitioned to other methods to dispose of their wood waste such as fuel, wood chips for paper making, or landscaping mulches. We are proposing to make it illegal to operate wigwam and silo burners after January 1, 2020. This will outlaw the one permitted wigwam burner in Washington (currently not in use). If wigwam and silo burners were going to operate in the future otherwise, this would prevent emission of toxic and criteria air pollutants.

1.3.8 Update the definition of volatile organic compounds (VOC) to match the current federal definition

We are proposing to update the definition of a volatile organic compound (VOC) to match the federal definition. Years ago, the rule clarified the federal definition without changing its effect so it is easier to understand. The proposed changes are necessary to keep the state definition current with the federal definition.

1.3.9 Correct typos and clarify rule language without changing its effect

We are proposing to:

- Correct spelling and grammar errors.
- Clarify rule language to make it easier to understand without changing its effect.
- Eliminate duplicative rules for catalytic cracking units and sulfuric acid plants in WAC 173-400-070(5) and (7) because mandatory federal requirements are either more stringent than or equal to the state standards.

1.3.10 Update adoption by reference of federal rules without material change

The proposed update of the adoption date of federal rules from January 1, 2016 to January 24, 2018 captures many required federal rule revisions. This is Ecology's main air quality rule and references over 17 different parts of EPA's environmental regulations covering hundreds of individual rules (40 CFR Parts 50, 51, 52, 53, 60, 61, 62, 63, 65, 60, 72, 75, 81, 82, 89, 124, and 1039). Our rules need to be as current as possible as we can only enforce a federal rule (including rule changes) after we have adopted the rule by reference. After adoption of these rules into our regulation, we request delegation of EPA's responsibilities to implement the rules for EPA, reducing EPA's involvement with regulating emission sources in our state.

1.4 Document organization

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

- Baseline and the proposed rule amendments (Chapter 2): Description and comparison of the baseline (what would occur in the absence of the proposed rule amendments) and the proposed changes to rule requirements.
- Likely costs of the proposed rule amendments (Chapter 3): Analysis of the types and sizes of costs we expect impacted entities to incur as a result of the proposed rule amendments.
- Likely benefits of the proposed rule amendments (Chapter 4): Analysis of the types and size of benefits we expect to result from the proposed rule 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 rule 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.

Chapter 2: Baseline and the Proposed Rule Amendments

2.1 Introduction

We analyzed the impacts of the proposed rule amendments relative to the baseline of the 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 would face if the proposed rule amendments are not adopted. It is discussed in Section 2.2, below.

2.2 Baseline

The baseline for our analyses generally consists of existing rules and laws, and their requirements. This is what allows us to make a consistent comparison between the state of the world with and without the proposed rule amendments.

For this proposed rulemaking, the baseline includes:

- Chapter 173-400 WAC – General Regulations for Air Pollution
- Chapter 173-401 WAC – Operating Permit Regulation
- Federal Clean Air Act 42 U.S.C. Sections 7401 – 7671q (1970)
- Washington Clean Air Act, Chapter 70.94 RCW
- National Emission Standards for Hazardous Air Pollutants for Source Categories: 40 CFR Part 63, Subparts UUU, DDDDD, and JJJJJ
- 40 CFR 260.10 Hazardous Waste Management System

2.3 Proposed rule amendments

Below is a summary list of the proposed amendments:

- Remove exemptions for emissions occurring during specific operating conditions of a source and replace with opacity standards.
- Create a process to establish facility specific permit limits for existing sources that exceed an emissions standard in the SIP.
- Simplify the notification process related to excess emission events.
- Align unavoidable excess emission provisions with federal court decisions, EPA’s SSM policy, EPA’s SIP call, and the state law.
- Change public notice requirements and public comment period.
- Simplify application of nonroad engine requirements.

- Outlaw wigwam and silo burners.
- Update the definition of volatile organic compounds (VOC) to match the current federal definition.
- Clarify rule language without changing its effect.
- Update adoption by reference of federal rules from January 1, 2016 to January 24, 2018.

2.3.1 Remove exemptions for emissions and replace with opacity standards

Baseline

Our existing rules exempt emissions during specific activities and times from having to meet emission limitations or allow a company to avoid an enforcement action in certain situations. These include:

- Periods of startup, shutdown and malfunction (SSM).
- Affirmative defense. An affirmative defense will excuse the emissions of a source that exceed an emissions standard during startup, shutdown, and malfunction from being a violation if the source can demonstrate that it met certain criteria.
- Director's discretion. A director's discretion allows an agency to determine whether an instance of excess emissions is a violation of an emission limitation. A permitting agency can establish a unit-specific alternative sulfur dioxide standard that exceeds the standard if a facility demonstrates that there is no feasible method of reducing the concentration.
- Automatic exemptions. The current rule automatically exempts some actions such as soot blowing or grate cleaning of hog-fuel (wood-fired) boilers, and startup of orchard heating units from all emission standards.

The current standards exempt a hog fuel boiler and wigwam burner during startup and shutdown, soot blowing and grate cleaning events, and the first 30 minutes after lighting of an orchard heater from meeting any emission standard. The current exemptions apply to the opacity and particulate standards in the SIP. Owner/operators are only required to safely perform the operations and document them for excess emissions reporting.

The sulfur dioxide emission standard includes the ability for a source to either meet an alternative sulfur dioxide standard or be exempt from meeting the standard. We think this provision was part of the original state sulfur dioxide emission standard over 35 years ago. No facility nor air agency uses this provision.

Proposed

- Remove all automatic existing exemptions from meeting emission standards and replace with an alternative emission standard as appropriate (see discussion on next proposed change) to be effective when EPA removes the exemption from the SIP. This is a requirement of the SIP call.
- Remove the current opportunity to not meet the existing sulfur dioxide emission standard. The provision is not in the SIP, which means that EPA would not accept an alternative emission standard established using this process. The proposed Section 082 provides the

opportunity to get a unit or site specific alternative emission limitation. Oil refineries use the process in WAC 173-400-107 to get relief from meeting the sulfur dioxide standard when there is an excess emissions event.

- Add new section 082 to provide an opportunity for a source that is unable to meet an emission standard in the rule or SIP during specific, short-term activities or operating modes to get an alternative emission limitation.
- Remove WAC 173-400-107 (excess emissions) to be effective when EPA removes the section from the SIP. Reporting requirements for excess emissions (WAC 173-400--108) and provisions to excuse an unavoidable excess emissions event from a penalty (WAC 173-400-109) will become effective when EPA removes Section 107 from the SIP. This is a requirement of the SIP call.
- WAC 173-400-108: Modify the timing for notification of excess emission events that do not threaten human health. Rather than require notification “as soon as possible” that the source after discovering an excess emission event, the proposed change brings the notification in line with the required timing of a detailed report of the excess emission event.
- WAC 173-400-109: Modify the unavoidable excess emission provisions to align with federal limitations, EPA policy, and the state law. We propose criteria to excuse an excess emissions event, while still a violation, from a penalty as directed by RCW 70.94.431(8). These changes are required under the SIP call.
- Add an opacity limitation to several actions that the current rule does not provide any limitation. The specific actions being proposed to have an alternative emission limitation 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.
 - Soot blowing and grate cleaning.

Expected impact

Removing of emission exemptions:

- Removing SSM provisions and modifying the unavoidable excess emission provisions are required by the SIP call.

Opacity requirements:

- The primary impact of the proposed alternate opacity standards would be to 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 wood-fired boiler owner/operators and boiler and kiln owner/operators needing 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. Particulate

control devices may need to be engaged earlier in the startup process or operated later in the shutdown process than is currently done.

Refractory curing:

- For refractory curing during startup, the sources would have to closely monitor both firebox and refractory temperatures (according to manufacturer's instructions) to have as efficient combustion as attainable, and avoid damaging the newly installed firebrick. The sources 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 owner/operators would need to ensure that the control devices are installed and operating so they do not overload the particulate control device with particles from the soot blowing and grate cleaning activity. Currently, the particulate control device may be overloaded 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.

Orchard heaters:

- The proposal for orchard heaters is to remove the exemption from meeting the 20 percent opacity standard for the first 30 minutes after ignition. This exemption was adopted in the 1970's when orchard heating was primarily performed with open pots of fuel oil or burning used tires. In response to changes in the cost of fuel oil, as well as regulation by the Yakima Regional Clean Air Agency and Ecology's Central Regional Office, orchardists have replaced these heaters with a variety of non-combustion methods to protect flowering trees from frost. This has resulted in combustion-based heating being primarily limited to fringe locations of orchards. Currently, most orchard heating equipment uses much more efficient combustion techniques when using fuel oil and in many cases, they use enclosed propane combustion units, if any heating with fuel is used.

2.3.2 Create a process to establish facility specific permit limits that exceed an emissions standard in the SIP

Baseline

There is no existing process in the rule for a source to request and receive approval of a short-term emission limit that exceeds a standard in the SIP. However, the Washington Clean Air Act allows this option⁹. EPA would still need to approve the higher limit, but this additional level of approval is not transparent.

Proposed

The proposed rule amendments include a process for a source to request and receive approval of a short-term emission limit that exceeds a standard in the SIP. This process includes written request 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.

⁹ RCW 70.94.380(1)

- 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) increments¹⁰, when applicable, and ambient air quality standards in Chapter 173-476 WAC will not be exceeded by emissions from the proposed 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.
- Demonstrate that the emissions allowed by the alternative emission limit will 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 expect the proposed rule amendments to result in increased costs as compared to the baseline for those sources that need an alternative emission limitation that is above a SIP emission standard. The provision would provide a potential benefit by allowing a source with an individual emission unit(s) that cannot meet an emission standard during a transient mode of operation an opportunity to continue to operate without incurring capital costs. The source pursuing an alternative limit under this section would incur the costs to demonstrate the need and appropriateness of a proposed alternative emission limit.

2.3.3 Simplify the notification process related to excess emission events

Baseline

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

Proposed

For excess emissions events that do not threaten human health, the proposed rule amendments specify that notification may be concurrent with issuance of the detailed report on the normal reporting schedule. Excess emissions that do threaten human health must be reported as soon as possible, but not later than 12 hours after discovery.

Expected Impact

The proposed rule 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 issuance of the notice

¹⁰ See WAC 173-400-116 Increment protection.

and report, however, could generate benefits in the form of time efficiencies in streamlining, 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.

2.3.4 Align unavoidable excess emission provisions with federal limitations, EPA policy, and the state law

Baseline

The baseline includes EPA's current excess emissions policy requirements, as well as state requirements in RCW 70.94.431(8) regarding excusing excess emissions.

Proposed

The proposed rule amendments bring the rule language into line with federal¹¹ and state requirements¹² and law¹³.

Expected impact

These proposed rule amendments are not expected to generate costs or benefits, as they are required to meet the SIP call and are not a change from the baseline.

2.3.5 Change public notice requirements and public comment period

Baseline

Notice is required in a newspaper and documents must be available at a physical location near the site of a proposed new source. Alternative methods of notification, including electronic notification, are allowed to supplement the newspaper notification.

30-day public comment periods include state holidays.

Proposed

An agency must post notice and documents on their website. Newspaper notice must continue until June 30, 2019. After that date, newspaper notice would continue as a supplemental method of notification.

30-day public comment periods exclude state holidays as defined in WAC 357-31-005:

- The first day of January (New Year's Day).
- The third Monday of January (Martin Luther King, Jr.'s birthday).
- The third Monday of February (Presidents' Day).
- The last Monday of May (Memorial Day).
- The fourth day of July (Independence Day).
- The first Monday in September (Labor Day).

¹¹ EPA SSM SIP call, 80 FR 33839 (June 12, 2015). Includes 2015 SSM Policy.

¹² RCW 70.94.380

¹³ Federal Clean Air Act 42 U.S.C. Sections 7401 – 7671q (1970). *Sierra Club et al. v. Jackson*, No. 3:10-cv-04060-CRB (N.D. Cal.); *NRDC v. EPA*, 749 F.3d 1055, 1063 (D.C. Cir. 2014), and the settlement agreement from *Sierra Club v. Johnson*, 551 F.3d 1019 (D.C. Cir. 2008).

- The eleventh day of November (Veterans Day).
- The fourth Thursday in November (Thanksgiving Day).
- The Friday immediately following the fourth Thursday in November (Native American Heritage Day).
- The twenty-fifth day of December (Christmas Day).

Expected impact

The proposed change to notification requirements would provide greater flexibility for agencies, faster communication with the public, and make information more widely available at lower cost to unknown interested parties. Continued newspaper notice for an additional year delays the impact to communities and community members with limited access to the internet.

According to a 2010 University of Washington study, those living below the poverty line had the highest use of library computers, with 44 percent having reported using public library computers and internet access during the previous year¹⁴. At the end of the year period, a small cost-savings to the permitting agencies and proposed new sources would be a benefit.

The proposed change to the 30-day public comment period would increase some public comment periods, and potentially benefit the public by reducing potential barriers to commenting that holidays might cause for the public.

2.3.6 Nonroad engine requirements

Baseline

Each time a new nonroad engine is brought on site, evaluation must include impacts from all nonroad engines on site. Nonroad engines include items like diesel electric generators, engine powered air compressors and welders, lawn mowers tractors, and hand held power equipment such as chain saws and yard trimmers.

Proposed

- Limits the scope of evaluation to impacts from nonroad engines in a new project.
- Excludes back-up nonroad engines that have the same or lower emissions than the primary power nonroad engine.

Expected impact

Evaluating the impacts of nonroad engines on a project-by-project basis rather than on a site basis is more representative of the original intent for how this section should operate. There would be no impact from excluding back-up nonroad engines with the same or lower emissions because they would replace the primary power nonroad engine if it fails.

2.3.7 Outlaw wigwam and silo burners

Baseline

¹⁴ Samantha Becker, et al., Opportunity for All: How the American Public Benefits from Internet Access at U.S. Libraries, at pages 1–2, available at http://impact.ischool.washington.edu/documents/OPP4ALL_FinalReport.pdf.

Under the baseline, wigwam and silo burners are allowed, provided they meet all applicable air quality emissions standards, and federal incinerator requirements. There are currently no operating wigwam or silo burners in Washington.

Proposed

Make it illegal to install or operate wigwam and silo burners after January 1, 2020.

Expected impact

We do not expect significant costs or benefits from this proposed rule amendments. All wigwams have shut down, and the only remaining permitted wigwam in the state is currently nonoperational. This potentially provides precautionary benefits of preventing future emissions of toxic and criteria air pollutants.

2.3.8 Update the definition of volatile organic compounds

Proposed

Update the definition of a volatile organic compound or VOC to match the federal definition. This is necessary to keep the state rules current with federal rules.

Expected impact

These proposed amendments are exempt from the current analysis under RCW 34.05.328(5)(b)(iii).

2.3.9 Correct typos and clarify rule language without changing its effect

Proposed

- Correct spelling and grammar errors.
- Clarify rule language to make it easier to understand.
- Eliminate duplicative rules for catalytic cracking units and sulfuric acid plants.

Expected impacts

These proposed amendments are exempt from the current analysis under RCW 34.05.328(5)(b)(iv).

2.3.10 Update adoption by reference of federal rules from January 1, 2016 to January 24, 2018.

Updating the adoption date of federal rules from January 1, 2016 to January 24, 2018 captures many federal rule revisions. This is Ecology's main air quality rule and references over 17 different parts of EPA's environmental regulations covering hundreds of individual rules (40 CFR Parts 50, 51, 52, 53, 60, 61, 62, 63, 65, 60, 72, 75, 81, 82, 89, 124, and 1039). Our rules need to be as current as possible, as we can only enforce a federal rule (including rule changes) after we have adopted the rule by reference. After adoption of these rules into our regulation, we request delegation of EPA's responsibilities to implement the rules for EPA, reducing EPA's involvement with regulating emission sources in our state.

These proposed amendments are exempt from the current analysis under RCW 34.05.328(5)(b)(iii).

Chapter 3: Likely Costs of the Proposed Rule Amendments

3.1 Introduction

We estimated the likely costs associated with the proposed rule amendments, as compared to the baseline. The proposed rule amendments and the baseline are discussed in detail in Chapter 2 of this document.

3.2 Cost Analysis

3.2.1 Remove exemptions for emissions and replace with opacity standards

The specific actions being proposed to have an alternative emission limitation for opacity include:

- 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, lime kiln or industrial furnace.
- Soot blowing and grate cleaning of a wood-fired (hog-fuel) boiler.
- Startup of orchard heaters.

3.2.1.1 Opacity standards

The proposed rule 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 plant economics. (See discussion of quantifiable costs in 3.2.1.6 below.)

3.2.1.2 Startup and shutdown of a wood-fired boiler with a dry particulate emission control

A plant maintenance outage typically happens annually. Following this outage, the wood-fired boiler is started up. A given 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 will need to assure that the revised standard is being met. 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 amendment requires greater care be taken throughout the process and observations by a certified opacity reader. (See discussion of quantifiable costs in 3.2.1.6 below.)

3.2.1.3 Initial startup and curing of new refractory materials installed in a wood – fired boiler, lime kiln or industrial furnace

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 prefer to avoid the expense of more frequent replacements.

The curing step is part of the restart of the wood-fired boiler, industrial furnace, 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 amendment requires the operator take greater care throughout the process and a certified opacity reader take periodic observations. (See discussion of quantifiable costs in 3.2.1.6 below.)

3.2.1.4 Soot blowing and grate cleaning

Boilers generally conduct soot blowing and grate cleaning once per shift. The exemption applies to smaller units used at smaller lumber mills.

The proposal for soot blowing and grate cleaning follows the longstanding allowance for these activities in state rule¹⁵. 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. (See discussion of quantifiable costs in 3.2.1.6 below.)

3.2.1.5 Startup of orchard heaters

Startup of orchard heaters occurs only in the spring of the year, and in any given orchard with heaters may be needed on as few as zero days per year to as many as a dozen days per year, depending on a prediction of frost and the state of the flower buds on the trees. Orchards currently utilize numerous methods to provide frost protection to developing flower buds, with orchard heaters being relegated from the primary method to a supplemental method of heating. Fuel costs have been a driver in the conversion from orchard heaters to other methods of frost protection.

To use, the heaters are lit by the orchardist or orchard staff. Addressing any smoky heaters will take the person a few minutes to adjust airflow for best combustion. Smokey heaters use fuel

¹⁵ WAC 173-400-070(2)(a) and 173-400-040(2)(a)

inefficiently, do not provide as much heat and use more fuel than properly adjusted heaters. Once adjusted, these heaters generally retain their settings for the full heating season. During storage, the air flow adjustments may be misadjusted, requiring adjustments the following spring.

While it is clear that these heaters exist, it is unclear what share of orchards have them, and how many of these heaters are used. Ecology welcomes additional input in this area. (See discussion of quantifiable costs in 3.2.1.6 below.)

3.2.1.6 Quantifiable Costs

Paying attention to opacity visually would take less than a minute. These situations may take longer:

- One hour for wood-fired boiler startup or shutdown.
- Up to four one-hour periods for refractory curing¹⁶.
- 15 minutes for soot blowing.

At a 2015 hourly wage of \$45.84 for an environmental manager or maintenance manager¹⁷, updated to \$48.36 in current dollars using 5.5 percent inflation¹⁸, 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 will 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. This is an 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 \$200 to \$225¹⁹.

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.

At orchards, however, attention to particulate emissions from orchard heaters is likely already part of existing work when lighting heaters. Orchardists would already adjust air flow to burners in smoking heaters as part of lighting procedure.

¹⁶ Communication between Shon Kraley and Alan Newman (2017). Email, subject: "RE: Opacity Memo-Draft (002).docx" 7/5/17.

¹⁷ US Bureau of Labor Statistics (2015). Wages by Area and Occupation, 2015. Washington State. Median wage for environmental engineers.

¹⁸ US Bureau of Labor Statistics (2017). Consumer Price Index.

¹⁹ 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".

3.2.2 Create a process to establish facility specific permit limits that exceed an emissions standard in the SIP

We do not expect this proposed 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 2.3.2, above. 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 proposed 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.

3.2.3 Simplify the notification process related to excess emission events

We do not expect this proposed rule amendment to result in costs as compared to the baseline.

3.2.4 Align unavoidable excess emission provisions with federal limitations, EPA policy, and the state law

We do not expect this proposed rule amendment to result in costs as it is not a change from the baseline.

3.2.5 Change public notice requirements and public comment period

We do not expect this proposed rule amendment to result in costs as compared to the baseline.

3.2.6 Nonroad engine requirements

We do not expect this proposed rule amendment to result in costs as compared to the baseline.

3.2.7 Outlaw wigwam and silo burners

We do not expect this proposed rule amendment to result in costs as compared to the baseline.

3.2.8 Update the definition of volatile organic compounds

These proposed amendments are exempt from the current analysis under RCW 34.05.328(5)(b)(iii).

3.2.9 Correct typos and clarify rule language without changing its effect

These proposed amendments are exempt from the current analysis under RCW 34.05.328(5)(b)(iv).

3.2.10 Update adoption by reference of federal rules

These proposed amendments are exempt from the current analysis under RCW 34.05.328(5)(b)(iii).

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Chapter 4: Likely Benefits of the Proposed Rule Amendments

4.1 Introduction

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

4.2 Benefit analysis

4.2.1 Remove exemptions for emissions and replace with opacity standards

The proposed rule amendments would allow certain sources 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.

In addition, having a rule that complies with EPA requirements and federal court decisions would allow 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.

4.2.2 Create a process to establish facility specific permit limits that exceed an emissions standard in the SIP

The proposed rule amendment would provide a potential benefit of allowing sources 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 will not be exceeded.

4.2.3 Simplify the notification process related to excess emission events

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 will be limited to exceedances that represent a potential threat to human health so there will be fewer reports written and reviewed.

4.2.4 Align unavoidable excess emission provisions with federal limitations, EPA policy, and the state law

These proposed rule amendments are not expected to generate benefits, as they are not a change from the baseline.

4.2.5 Change public notice requirements and public comment period

These changes would provide greater flexibility for agencies, faster communication with the public, and make information more widely available. Continued newspaper notice for an additional year reduces the impact to communities that rely on this notification method, after which a small cost-savings would be a benefit.

Improved public notice requirements would:

- Improve communication with the public on permit actions in comparison to a one-day newspaper notice.
- Result in broader and better informed public participation.
- Reduce costs and conserve air agency resources.
- Improve public access by making permit actions immediately available through convenient and reliable electronic media outlets.
- Improve communication with environmental justice communities and other target audiences.
- Allow for information to be made available for an extended time period.
- Provide flexibility for permitting authorities and sources by avoiding time delays associated with newspaper publication and allowing for faster correction of errors and rescheduling of events.

The proposed exclusion of state holidays from the 30-day comment period would increase some public comment periods, and potentially benefit the public by reducing potential barriers to commenting caused by holiday commitments, travel, or office closure. It would reflect a best practice in public engagement, and potentially better or more comprehensively reflect public input.

4.2.6 Nonroad engine requirements

Evaluating impacts from nonroad engine emissions on a project-by-project basis rather than on a site basis is more representative of the original intent on how this section should operate.

Industry would have reduced paperwork from tracking nonroad engines on their facilities and annual reporting to the permitting agencies. At the Department of Energy's Hanford Site, this would reduce the workload from tracking several thousand engines to only the few hundred associated with specific projects.

4.2.7 Outlaw wigwam and silo burners

We do not expect benefits from this proposed rule amendment. Wigwams have shut down, and the only remaining permitted wigwam in the state is currently nonoperational. This potentially provides precautionary benefits of preventing future emissions of toxic and criteria air pollutants, but based on ongoing economic pressures to move away from using wigwam and silo burners, a practical impact is not likely.

4.2.8 Update the definition of volatile organic compounds (VOC) to match the current federal definition.

These proposed amendments are exempt from the current analysis under RCW 34.05.328(5)(b)(iii).

4.2.9 Correct and clarify rule language without changing its effect

These proposed amendments are exempt from the current analysis under RCW 34.05.328(5)(b)(iv).

4.2.10 Update adoption by reference of federal rules

These proposed amendments are exempt from the current analysis under RCW 34.05.328(5)(b)(iii).

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Chapter 5: Cost-Benefit Comparison and Conclusions

5.1 Summary of the costs and benefits of the proposed rule amendments

Costs summary:

- Estimated costs attributable to the proposed rule amendments include labor costs incurred in paying more attention during startup, shutdown, and soot blowing activities. The frequency of these events would be facility specific. We estimated an overall cost range of \$12 to \$193 per soot blowing, boiler, or refractory curing event.
- Facilities not currently required to have a certified opacity reader on staff would incur costs of certification, including:
 - Initial certification cost of \$325 to \$350.
 - Annual recertification cost of \$200 to \$225.

Benefits summary:

- The proposed rule amendments to opacity standards would allow sources to startup, shutdown, and perform soot blowing activities without violations and incurring penalties.
- Having a rule that complies with EPA requirements and interpretations would allow 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 benefit in facing clear and consistent regulatory requirements.
- The proposed process to establish facility specific limits provides a potential benefit of allowing market entry to sources with individual emission units that may need additional time to come into compliance and are not currently identified.
- 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 initially provided about the excess emissions event.
- Greater flexibility for agency, quicker communication with public and make information more widely available. Continued newspaper notice for an additional year reduces the impact to communities that rely on this notification method, after which a small cost-savings would be a benefit.
- Excluding state holidays from public comment periods could result in better or more comprehensive public input.

- Evaluating impacts from nonroad engines on a project-by-project basis rather than on a site basis is more representative of our original intent on how the section should operate.

5.2 Conclusion

Ecology concludes, based on reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the proposed rule amendments, that the benefits of the proposed rule 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 will 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 proposed rule content, 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 rule were the least burdensome to those required to comply with them.

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

The authorizing 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.

In addition, EPA determined 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 current 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 Alternative sulfur dioxide limit

We developed an alternative limit for sulfur dioxide but we did not include it in this rulemaking. We also considered deleting the exemption entirely. To support submittal of the proposed alternative as an amendment to the SIP, EPA required additional modeling of the emissions from each of the five oil refineries to demonstrate compliance with the national ambient air quality standard for sulfur dioxide. Once we have the modeling report, we will discuss options with this sector, and include the alternative limit in a subsequent rulemaking should that be appropriate.

6.3.2 Alternative opacity standard

We considered changing the opacity standard from a 3 minute in an hour standard (“method 1”) to a 6-minute average standard (“method 2”) for the proposed alternative opacity standards. As this would be a change from the opacity standard in the SIP (method 1) we evaluated the ability to demonstrate equivalency of the method 1 and method 2 forms of the opacity standard. We determined that this was not possible with our current information. As a result, we decided to keep the current form of the state opacity standard.

Plants with a continuous opacity monitor use method 2, and it is easier for a regulator to confirm compliance. Determining compliance with the 3 minutes in an hour standard is determined through a different methodology (Ecology Method 9A) that uses visual emission reading by a certified visual opacity reader. Compliance with the 6-minute average standard can also be determined by a certified visual opacity reader or by a continuous opacity monitor.

In addition to the difficulty in demonstrating equivalency, if we used method 2 to determine compliance for the alternative standards, EPA indicated:

- 1) We would need to demonstrate for the SIP that the change did not make the requirement less stringent, and

- 2) The facility would still need to show compliance with the 20 percent standard using the existing 3 minute methodology.

Requiring a source to comply with both standards at the same time using two different methods adds a burden. Further, as noted above, we believe we could not prove to EPA that we were not relaxing a requirement if we changed the methodology for determining compliance with the 20 percent standard.

Using a certified visual emissions reader to read emissions for the alternative emission standards could be seen as adding a new cost to the sources. At this time, they should already be using certified readers during these events to determine (and for sources with an air operating permit, certify) compliance with the 3 minute in an hour standard in the SIP.

6.3.3 Malfunction abatement plan

A malfunction abatement plan was considered as an alternative to a quantitative limit but was not included in the proposal.

Stakeholders indicated that the malfunction abatement plan was too similar to existing maintenance plans so it provided little additional value. The level of review from the regulatory agency and the associated workload were also mentioned as concerns.

Stakeholders raised legitimate concerns over the possible increased workload for a facility and its regulator. Existing WAC 173-400-109 requires a similar plan as part of the documentation for relief from a civil penalty for unavoidable excess emissions. Therefore, Ecology did not pursue this option.

6.3.4 General requirement to minimize emissions

We considered including a general requirement to have acceptable operating and maintenance procedures for the facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.

Because multiple parties raised concerns that these are additional requirements subject to broad interpretation, and there was no need for the provision, Ecology chose to not include this provision.

6.3.5 Operating Permit Regulation emergency defense provision

We considered proposing to remove the affirmative defense provisions for emergencies in the state Operating Permit Regulation.

In June 2016, EPA proposed a rule amendment to 40 C.F.R. Parts 70 and 72 to remove the affirmative defense provision from the federal Title V permitting regulations. This proposal was an extension of the startup, shutdown and malfunction (SSM) SIP call. EPA has not finalized this rulemaking so we decided to postpone the deletion of WAC 173-401-645.

6.3.6 Alternative requirements for nonroad engine located on a Departments of Defense or Energy facility

Ecology received requests from stakeholders to revise this provision to address small nonroad engines and other related adjustments to simplify application of the requirements on the Department of Energy (Hanford Site) and Department of Defense (example: Naval Base Kitsap, Joint Base Lewis-McChord) facilities. We negotiated provisions that exempted small engines (handheld and manually propelled engines like yard trimmers and push lawnmowers) on these facilities. We did not propose the changes because exempting small engine inadvertently imposes more stringent requirements on private entities than on public entities and there is no federal or state law which would require this. Under RCW 34.05.328(1)(g) this is not allowed.

6.3.7 Air operating permit as mechanism to establish alternative emission standard

We considered using the operating permit (Title V) as the mechanism to establish an alternative limit that must be SIP approved. This permit is federally enforceable; however, the state rule does not contain any provision for this permit to be the authority to issue a new emission requirement. This permit is specifically a document that compiles all applicable requirements. Therefore, we did not pursue this option.

6.3.8 Alternative effective dates for SSM provisions

We considered several alternative dates for the effective date to remove or delete the excess emissions section identified by EPA in the SIP action. These dates include:

- Effective date of EPA's removal of the September 20, 1993 version from the SIP. EPA and several stakeholders supported this option because it appears to provide certainty and flexibility by retaining the existing rule structure until EPA takes action.
- May 22, 2018 (18 months after the EPA SIP call deadline). Ecology supported this option because it establishes a date certain when the new provisions would apply. Few stakeholders supported this option.
- Existing rule language: This section is in effect until the effective date of EPA's incorporation of the entirety of WAC 173-400-108 and 173-400-109 into the Washington state implementation plan as replacement for this section. The Western States Petroleum Association (WSPA) and a few stakeholders supported this option. However, we were changing sections 108 and 109 to comply with EPA's SIP policy and we would not be including them in the SIP.
- Do nothing and wait until EPA takes action. WSPA suggested we wait until EPA completes its review of the SSM SIP call for possible modification or repeal allowed by the federal court as part of a lawsuit²⁰. We are still required to comply with EPA's existing directive – delete WAC 173-400-107 and remove it from the SIP, and revise rule provisions that exempt specific activities from being required to meet emission standards.

²⁰ April 24, 2017, *Walter Coke, Inc., et al. v. EPA, et al.* USCA Case #15-1166 Document #1672430.

Facing the dual challenge of uncertainty and the SIP call from EPA, we are proposing that affected SSM SIP-related rule changes not become effective until EPA acts on our SIP request. By using this structure, we maintain current exemptions for excess emissions and continuous emission standards until EPA makes final decisions and approves this revision in the SIP.

6.4 Conclusion

After considering alternatives to the proposed rule's contents, as well as the goals and objectives of the authorizing statute, Ecology determined that the proposed rule represents 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 rule 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 rule amendments.

Based on our analysis, facilities performing soot blowing, boiler, or refractory curing activities may incur compliance costs as a result of the proposed rule amendments. We estimated potential additional employee costs of \$12 to \$193 per startup, shutdown, or soot blowing event, but could not confidently identify or assume how many of these events a facility would experience in a year. We also identified costs of \$325 to \$350 the first year, and \$200 to \$225 in subsequent years, for facilities not currently required to have a certified opacity reader on staff.

None of the identified covered businesses performing these activities is a small business²¹. Consequently, Ecology is not required to prepare a Small Business Economic Impact Statement under the RFA (RCW 19.85.025(4)).

The small business that owns the only standing wigwam burner in the state is not expected to incur additional compliance costs as a result of the proposed rule amendments, because the burner is not currently operational. Consequently, Ecology is not required to prepare a small business economic impact statement under the RFA (RCW 19.85.030(1)(a)).

²¹ WA Employment Security Department (2017). Workforce Explorer; Websites and financial documents for Sonoco, KapStone Kraft Paper Corporation, Cosmo Specialty Fibers (Gores Group), and Georgia Pacific.

References

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Communication with Gary Huitsing (2018). Email 1/11/18. “RE: Cost of opacity certification”.

US Bureau of Labor Statistics (2015). Wages by Area and Occupation, 2015. Washington State. Median wage for environmental engineers.

US Bureau of Labor Statistics (2017). Consumer Price Index.

WA Employment Security Department (2017). Workforce Explorer.

List of Acronyms

1. CBA Cost Benefit Analysis
2. CFR Code of Federal Regulation
3. EPA Environmental Protection Agency
4. FIP Federal Implementation Plan
5. PSD Prevention of Significant Deterioration
6. RCW Revised Code of Washington
7. RFA Regulatory Fairness Act
8. SIP State Implementation Plan
9. SSM Startup, shutdown, and malfunction
10. VOC Volatile Organic Compounds
11. WAC Washington Administrative Code
12. WSPA Western States Petroleum Association

Appendix A

Administrative Procedure Act (RCW 34.05.328)

Determinations

Describe the general goals and specific objectives of the statute that this rule implements. RCW 34.05.328(1)(a)

See Chapter 6.

Explain why this rulemaking is needed to achieve the goals and objectives of the statute. RCW 34.05.328(1)(b)

See Chapters 1 and 2.

Describe alternatives to rulemaking and the consequences of not adopting this rule. RCW 34.05.328(1)(b)

General Regulations for Air Pollution Sources, Chapter 173-400 WAC

If we do not revise these rules to remove the exemption provisions, EPA could impose a Federal Implementation Plan (within 24 months of missing the November 22, 2016 deadline). Conflicting regulatory requirements create an uncertain business climate and uncertainties in permit-related decisions. Based on the SIP call, EPA's most likely action would be to remove WAC 173-400-107 (Section 107) from the SIP. This section would still be in effect as a matter of the state regulatory structure, but a Washington business must comply with the more restrictive federal plan (which is really a federal rule with another name). A business that continues to use Section 107 to excuse its higher emissions does so illegally as a matter of federal law. EPA or other parties could sue the company in federal court. A permitting agency could not enforce the more restrictive federal plan until it has been included in a state rule through rulemaking. It is possible that the Sierra Club will sue EPA for failure to comply with the SIP call if EPA does not completely comply with the SIP call within the deadline in the federal Clean Air Act. Without a rule change, a facility could still use the process in the statute to get a permit-specific emissions limit that is higher than a standard in the SIP.²²

Web posting provisions, in Chapter 173-400 WAC and Chapter 173-401 WAC

Revising our public notice process is optional. Currently, each agency must publish a one-day notice in a newspaper and the Ecology Permit Register, and place the draft permit and the administrative in a physical location near the source. Keeping the existing public participation process allows each agency to determine the appropriate approach to web posting rather than providing a uniform system where the public can easily find consistent information on the web.

Since Ecology and all of the seven local air agencies must post notice on their web sites of each permit application they receive for 15 days the public is already used to this method. Additionally, agencies also post the notice on the public comment period and the

²² RCW 70.94.360

draft **permit**. The proposal continues to allow an agency to publish a newspaper advertisement when they think it is appropriate.

Update adoption by reference of federal rules.

Our main air quality rule references over 17 different types of federal rule covering hundreds of rules in 40 CFR Parts 50, 51, 52, 53, 60, 61, 62, 63, 65, 60, 72, 75, 81, 82, 89, 124, and 1039. State rules need to be as current as possible because we can't enforce a federal rule (including rule changes) until we have adopted the rule by reference.

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

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

Notice is provided in the proposed rulemaking notice (CR-102 form) filed under RCW 34.05.320.

Do the probable benefits of this rulemaking outweigh the probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented? RCW 34.05.328(1)(d)

See Chapters 1 – 5.

Is this rule the least burdensome alternative for those required to comply? RCW 34.05.328 (1)(e)

Please see Chapter 6 and the record for this rulemaking.

Does this rule require those to whom it applies to take an action that violates requirements of another federal or state law?

- Yes
- No

Explain how that determination was made. RCW 34.05.328(1)(f)

This rulemaking corrects existing deficiencies to meet the requirements of the federal Clean Air Act. We worked with EPA to ensure that the rule complies with EPA's requirements.

Does this rule impose more stringent performance requirements on private entities than on public entities? RCW 34.05.328 (1)(g)

- Yes. Provide a citation. Explain.
- No

Do other federal, state, or local agencies have the authority to regulate this subject?

- Yes. List below.
- No

Is this rule different from any federal regulation or statute on the same activity or subject?

- Yes
- No

If yes, check all that apply. The difference is justified because:

- A state statute explicitly allows Ecology to differ from federal standards. (If checked, provide the citation.)
- There is substantial evidence that the difference is necessary to achieve the general goals and objectives of the statute that this rule implements. (If checked, explain.)

RCW 34.05.328 (1)(h)

The Energy Facility Site Evaluation Council and seven local air agencies have authority to regulate this subject. A local air agency may adopt emission standards that are less stringent than the statewide standards adopted by Ecology provided they hold a hearing on the proposed change and Ecology agrees with their proposal (RCW 70.94.380).

RCW 70.94.331 (2) provides authority to adopt statewide emission standards.

Explain how Ecology ensures that the rule is coordinated with other federal, state, and local agencies, laws, and rules. RCW 34.05.328 (1)(i)

Air quality staff worked with staff of Ecology's Industrial Section in the Waste 2 Resources Program, and staff in Ecology's Nuclear Waste Program to develop rule language and ensure consistency across programs Ecology implements.

EPA identified two other Washington State agencies with deficient rules: Southwest Clean Air Agency and the Energy Facility Site Evaluation Council. Ecology staff worked closely with these agencies and the other local agencies throughout this rulemaking. These agencies intend to revise their rules to correct the deficiencies using Ecology's final rule as their model.

Olympic Region Clean Air Agency, Puget Sound Clean Air Agency, Southwest Clean Air Agency, and Spokane Regional Clean Air Agency must update their rules to include the new alternative opacity emission standards and the public notice procedures. These agencies implement and enforce their own rules regarding these provisions rather than the state rule. Therefore, a facility is unable to use the new alternative standards until the local agency completes their rulemaking.

Ecology staff coordinated with EPA staff throughout the rulemaking process to ensure we are complying with requirements of EPA and the federal Clean Air Act.