

Technical Support Document

Regulation Proposal

7 DE Admin. Code 1105

“Particulate Emissions from Fuel Industrial Process Operations”



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List of Acronyms

CAA	Clean Air Act
CFR	Code of Federal Regulations
DNREC	Department of Natural Resources and Environmental Control
EPA	U.S. Environmental Protection Agency
FR	Federal Register
G/SCF	Grains Per Standard Cubic Foot
GHG	Greenhouse Gas
NAAQS	National Ambient Air Quality Standards
SIP	State Implementation Plan
SSM	Startup, Shutdown, and Malfunction

1.0 Introduction

The Division of Air Quality of the Department of Natural Resources and Environmental Control (DNREC) is proposing to amend 7 **DE Admin. Code** 1105, *Particulate Emissions from Industrial Process Operations*. Regulation 1105 sets air emission limits for particulate matter (PM), to protect public health and the environment.

2.0 Background

Under the Clean Air Act (CAA), states are required to implement plans for national primary and secondary ambient air quality standards, these plans are known as State Implementation Plans (SIP). Section 110(k)(5) of the CAA requires the U.S. Environmental Protection Agency (EPA) to determine the completeness of these plans.

A SIP is a federally enforceable plan that is developed by states to explain how they will comply with the CAA, in order to improve air quality. It is comprised of a collection of regulations and documents used by a state to demonstrate that they are protecting public health and the environment.

7 DE Admin. Code 1105 is part of Delaware's SIP. When regulations that are part of the SIP are amended, states are required to submit the proposed amendments to the EPA for approval. If the amendments are approved by EPA, they become part of the SIP and become federally enforceable through 40 Code of Federal Regulations (CFR) Part 52, Subpart I - Delaware.¹

¹ 40 CFR Part 52, Subpart I – Delaware. <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-52/subpart-I>

3.0 2015 Startup, Shutdown, & Malfunction State Implementation Call (SSM SIP CALL)

On June 30, 2011, the Sierra Club filed a petition with the EPA administrator, concerning emissions during periods of startup, shutdown or malfunction (SSM). A startup is the setting in operation of a source and a shutdown is the cessation of operation of a source. A malfunction is a sudden and unavoidable breakdown of process or control equipment. During periods of SSM, equipment is not running at peak efficiency, resulting in excess emissions during these times. Air pollution emitted during these periods may adversely impact the health of people nearby and contribute to smog and other problems in communities that are further downwind.

The Sierra Club petition included requests concerning the treatment of excess emissions during SSM; specifically, how those emissions are treated in SIP provisions that the EPA approved in the past. The CAA section 110(k)(5) provides a mechanism commonly called a “SIP Call” for correcting SIPs that the Administrator finds to be substantially inadequate to meet CAA requirements. On June 12, 2015, EPA took final action on the Sierra Club petition; this final rule is commonly known as the 2015 SSM SIP Call (80 FR 33840).² In the SIP Call, EPA asked states to ensure they had plans in place that require industrial facilities to follow air pollution rules during periods of SSM; specifically, how these emissions are treated in SIPs. In issuing the SIP Call action, the EPA directed states to correct specific SSM provisions in their SIPs, giving a SIP submission deadline of November 22, 2016. 7 DE Admin. Code 1105 was one of the Delaware regulations included in this SIP Call.

In the SSM SIP Call, the EPA found 7 DE Admin. Code 1105, Subsection 1.7 deficient because it provided a potential exemption from the emission limit in Section 2.0 of the regulation, during SSM events:

“1.7 The provisions of this Regulation shall not apply to the start-up and shutdown of equipment which operates continuously or in an extended steady state when emissions from such equipment during start-up and shutdown are governed by an operation permit issued pursuant to the provisions of 2.0 of 7 DE Admin. Code 1102.

2.0 General Restrictions

No person shall cause or allow the emission of particulate emissions into the atmosphere from any source not provided for in subsections of this Regulation in excess of 0.2 grains per standard cubic foot.”

²State 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. EPA Final Rule. 80 FR 33840. June 12, 2015. <https://www.govinfo.gov/content/pkg/FR-2015-06-12/pdf/2015-12905.pdf>

3.1 Delaware's SSM SIP Call Response

On November 22, 2016, Delaware submitted a SIP revision, in response to EPA's SSM SIP Call. The SIP submittal included a revised version of 7 DE Admin. Code 1105. The revision removed the offending exemption from the SIP, and created a new 30-day rolling average emission limit in a new subsection 2.2, that would now apply at all times:

~~*"1.7 The provisions of this Regulation shall not apply to the start-up and shutdown of equipment which operates continuously or in an extended steady state when emissions from such equipment during start-up and shutdown are governed by an operation permit issued pursuant to the provisions of 2.0 of 7 DE Admin. Code 1102."*~~

2.0 General Restriction

~~*2.1 Reserved No person shall cause or allow particulate emissions into the atmosphere from any source not provided for in subsections of this Regulation in excess of 0.2 grains per standard cubic foot.*~~

2.2 No person shall cause or allow particulate emissions into the atmosphere from any source not provided in subsequent sections of this Regulation in excess of 0.2 grains per standard cubic foot on a 30-day rolling average basis."

3.2 Retention of a "State Only" Regulation

It should be noted, that Delaware did not agree with EPA's position that the SSM components of Delaware's SIP were deficient, in relation to the 2015 SSM SIP Call. Delaware's approach has been to require a permit for facilities that limits emissions during start-up and shutdown, and to subject the conditions of the permit to upfront environmental review, ample public scrutiny and demonstration that no National Ambient Air Quality Standards (NAAQS) would be violated if the permit conditions are met. Therefore, Delaware believed that the SSM components of its SIP were protective of the NAAQS and not deficient.

Despite this disagreement, in order to avoid the imposition of CAA sanctions (CAA 110(m) and 179(b)),³ Delaware proposed to: 1) revise the SIP as referenced above and 2) adopt a separate "state only" version of Regulation 1105. The "state only" regulation resulted in the same 0.2 grains per standard cubic foot (g/scf) (subsection 2.1), but allowed a 0.2 g/scf 30-day rolling average for SSM events (subsection 2.2):

³The two types of sanctions are: 1) highway funding sanctions, which impose a funding moratorium for all but exempt projects (safety, mass transit) and 2) offsets, which require a ratio of at least 2:1 emissions reductions within a nonattainment area for new or modified major facilities undergoing New Source Review permitting.

“1.7 The provisions of subsection 2.1 of this Regulation shall not apply to the start-up and shutdown of equipment which operates continuously or in an extended steady state when emissions from such equipment during start-up and shutdown are governed by an operation permit issued pursuant to the provisions of Section 2.0 of 7 DE Admin. Code 1102.

2.0 General Restrictions

2.1 No person shall cause or allow particulate emissions into the atmosphere from any source not provided for in subsequent sections of this Regulation in excess of 0.2 grains per standard cubic foot.

2.2 No person shall cause or allow particulate emissions into the atmosphere from any source not provided for in subsequent sections of this Regulation in excess of 0.2 grains per standard cubic foot on a 30-day rolling average basis.”

3.3 Disapproval of Delaware’s SSM SIP Call Submittal for 1105

On October 23, 2023, EPA issued a final rule disapproving Delaware’s November 22, 2016, SSM SIP Call submittal for Regulation 1105 (88 FR 72688).⁴ EPA did not agree that a proper evaluation of the impacts of a change of averaging period was adequate to ensure that the longer 30-day rolling averaging period would not cause backsliding, in accordance with CAA Section 110(l).

Therefore, Delaware is proposing to amend Regulation 1105 in response to EPA’s disapproval, to comply with 2015 SSM SIP Call. These amendments are described in more detail in Section 4.0, below.

⁴ Air Plan Disapproval; Delaware; Removal of Excess Emissions Provisions. EPA Final Action. 88 FR72688. October 23, 2023.
<https://www.govinfo.gov/content/pkg/FR-2023-10-23/pdf/2023-23242.pdf>

4.0 Current Proposed Amendments to DE Admin. Code 1105

The current proposed amendments address Section 1.0 “General Provisions” and Section 2.0 “General Restrictions”. The intent of the new amendments is to remove the “0.2 grains per standard cubic foot, on a 30-day rolling average” emission limit for SSM events in Delaware’s “state only” regulation and make the “0.2 grains per standard cubic foot” emission limit apply at all times, as shown below in the proposed regulation language:

~~“1.7 The provisions of subsection 2.1 of this Regulation shall not apply to the start-up and shutdown of equipment which operates continuously or in an extended steady state when emissions from such equipment during start-up and shutdown are governed by an operation permit issued pursuant to the provisions of Section 2.0 of 7 DE Admin. Code 1102.”~~

2.0 **General Restrictions**

~~2.1 No person shall cause or allow particulate emissions into the atmosphere from any source not provided for in subsequent sections of this Regulation in excess of 0.2 grains per standard cubic foot.~~

~~2.2 No person shall cause or allow particulate emissions into the atmosphere from any source not provided for in subsequent sections of this Regulation in excess of 0.2 grains per standard cubic foot on a 30 day rolling average basis.”~~

This action eliminates EPA’s backsliding concerns, as the current proposed amendments both eliminate the original SSM exemption and make the more stringent “0.2 grains per standard cubic foot” now apply at all times.

5.0 Impact of Proposed Amendments

Regulation 1105 was promulgated to control the particulate emission from industrial process operations. The paragraphs below describe the general impact of the proposed amendments.

5.1 Impact on Facilities

7 DE Admin. Code 1105, *Particulate Emissions from Industrial Process Operations* (Regulation 1105), was promulgated to control the emission of PM from industrial process equipment. In accordance with 7 DE Admin. Code 1101, *Definitions and Administrative Principles*, “Process emission” means discharge into the atmosphere of air contaminants resulting from a specific process or combination of processes. Delaware is proposing to amend 7 DE Admin. Code 1105 to apply a PM emission limit of 0.2 g/scf, at all times. Currently, the emission limit for start-up and shutdown of equipment is 0.2 g/scf, on a 30-day rolling average, from industrial process equipment.

The following, more stringent, Federal regulations already exist for many sources covered by this regulation. Therefore, it is not expected that sources will need to expend any additional resources to comply with the proposed amendments to Regulation 1105.

In addition, since the large majority of sources are already required to meet the proposed emission limits in 1105, substantial emission reductions are not expected to result from the promulgation of the amendments, as detailed in Sections 5.1.1 and 5.1.2 below.

5.1.1 Federal Regulations

5.1.1.1 Standards of Performance for Hot Mix Asphalt Facilities - 40 CFR Part 60 Subpart I
40 CFR Part 60, Subpart I — *Standards of Performance for Hot Mix Asphalt Facilities*, applies to facilities used to manufacture hot mix asphalt by heating and drying aggregate and mixing with asphalt cements. The PM emission limit in Subpart I is 0.04 g/scf,⁵ which is lower than the 0.2 g/scf limit in Regulation 1105. Therefore, applicable sources already meet the proposed PM SSM emission limit in Regulation 1105, through compliance with Subpart I. Consequently, new controls will not be needed or additional resources expended for these sources to comply with proposed amendments to Regulation 1105.

⁵ 40 CFR Part 60, Subpart I. 60.92. <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-60/subpart-I/section-60.92>

5.1.1.2 Standards of Performance for Grain Elevators - 40 CFR Part 60 Subpart DD

40 CFR Part 60, Subpart DD — *Standards of Performance for Grain Elevators*, applies to grain terminal elevators or grain storage elevators. The PM emission limit in Subpart DD is 0.01 gr/dscf, which is lower than the 0.2 g/scf limit in Regulation 1105. Therefore, applicable sources already meet the proposed PM SSM emission limit in Regulation 1105, through compliance with Subpart DD. Consequently, new controls will not be needed or additional resources expended for these sources to comply with proposed amendments to Regulation 1105.

5.1.1.3 EPA Subpart OOO Nonmetallic Processing Plant Standards

40 CFR Part 60, Subpart OOO — *Standards of Performance for Nonmetallic Mineral Processing Plants*, applies to the following fixed or portable nonmetallic mineral processing plants, include but are not limited to: crushers, grinding mills, screening operations, bucket elevators, and belt conveyors.

Emission limits in Subpart OOO are based on construction, modification, or reconstruction dates.⁶ The highest, least stringent, PM emission limit in Subpart OOO is 0.022 g/scf, which is lower than the 0.2 g/scf limit in Regulation 1105. Therefore, applicable sources already meet the proposed PM SSM emission limit in Regulation 1105, through compliance with Subpart OOO. Consequently, new controls will not be needed or additional resources expended for these sources to comply with proposed amendments to Regulation 1105.

5.1.2 Permitted Facilities (Not covered by the above regulations)

While the Federal regulations above may cover the large majority of process operations in Delaware, there are some specialty processing facilities that are not covered by Federal regulations (see Section 5.1). However, these “uncovered” sources may have Delaware permits, because their emission rates meet the permitting threshold in 7 DE Admin. Code 1102, *Permits*.⁷ The types of facilities include, but are not limited to: pharmaceutical processing, mulching, book binding, and food processing.

The standard permit language for process emissions is a 0.2 g/scf emission limit, that applies at all times (no SSM exemptions listed in the permit). Therefore, these sources are already complying with the proposed emission limit in Regulation 1105.

⁶ 40 CFR Part 60, Subpart OOO. <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-60/subpart-000>

⁷ 7 DE Admin. Code 1102 – *Permits*. <https://regulations.delaware.gov/AdminCode/title7/1000/1100/1102.pdf>

In addition, the permits contain standard language regarding the minimization of emissions during startup and shutdown of the units:

“At all times, including periods of startup, shutdown, and malfunction, the owner or operator shall, to the extent practicable, maintain and operate the facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating procedures are being used will be based on information available to the Department which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.”

5.1.3 Conclusion

To summarize, the following, more stringent, Federal regulations and/or Delaware permits already exist for many sources covered by this regulation:

- 40 CFR Part 60 Subpart I – *Standards of Performance for Hot Mix Asphalt Facilities*
- 40 CFR Part 60 Subpart DD – *Standards of Performance for Grain Elevators*
- 40 CFR Part 60 Subpart OOO – *Standards of Performance for Nonmetallic Mineral Processing Plants*
- Permitted process facilities

Therefore, it is expected that the large majority of sources will need not to install new controls or expend additional resources to comply with the proposed amendments to Regulation 1105. In addition, since the large majority of sources are already required to meet the proposed emission limits in 1105, substantial emission reductions are not expected to result from the promulgation of the amendments.

5.2 Impact on Delaware’s Greenhouse Gas Emissions Reduction Targets

The proposed amendments are not anticipated to have any direct impact on greenhouse gas (GHG) reductions, as process operations do not directly result in increases of GHG.

DNREC is required to review the impacts that proposed regulatory promulgation has on the State of Delaware’s GHG emission reduction targets, in accordance with 7 Del.C. §10003⁸ and 29 Del.C. §10118(b)(3).⁹ An assessment of the impacts of the proposed amendments, as specified in 7 Del.C. §10003, is not practical for these regulatory amendments, given that they do not have a direct impact on GHG emissions.

⁸ Greenhouse gas emissions reductions. 7 Del.C. §10003. <https://delcode.delaware.gov/title7/c100/index.html>

⁹ Agency findings; form of regulations. 29 Del.C. §10118(b)(3). <https://delcode.delaware.gov/title29/c101/sc02/index.html>

5.3 Impact on Communities

In addition, the proposed amendments are not expected to impact overburdened or underserved communities located in Delaware, as the amendments are not expected to result in any substantial emissions reductions or increases, as detailed in Section 5.1.