**DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**AIR QUALITY, ENERGY, AND SUSTAINABILITY**

**DIVISION OF AIR QUALITY**

**Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards**

**Proposed New Rules: N.J.A.C. 7:27-34**

**Proposed Amendment: N.J.A.C. 7:27A-3.10**

Authorized By: Shawn M. LaTourette, Commissioner, Department of Environmental Protection.

Authority: N.J.S.A. 13:1B-3(e), 13:1D-9, and 26:2C-1 et seq.

Calendar Reference: See Summary below for explanation of exception to calendar requirement.

DEP Docket Number: 08-21-11.

Proposal Number: PRN 2021-121.

A **public hearing** concerning this notice of proposal and the proposed State Implementation Plan (SIP) revision will be held on Wednesday, February 9, 2022, at 9:30 A.M. The hearing will be conducted virtually through the Department of Environmental Protection's (Department) video conferencing software, Microsoft Teams. A link to the virtual public hearing and telephone call-in option will be provided on the Department's website at https://www.nj.gov/dep/rules/notices.html.

Submit comments by close of business on March 4, 2022, electronically at www.nj.gov/dep/rules/comments. Each comment should be identified by the applicable N.J.A.C. citation, with the commenter's name and affiliation following the comment.

The Department encourages electronic submittal of comments. In the alternative,

comments may be submitted on paper to:

Alice A. Previte, Esq.

Attention: DEP Docket No. 08-21-11

Office of Legal Affairs

New Jersey Department of Environmental Protection

401 East State Street, 7th Floor

Mail Code 401-04L

PO Box 402

Trenton, NJ 08625-0402

If you are interested in providing oral testimony or submitting written comments at the virtual public hearing, please email the Department of Environmental Protection (Department) at monica.miranda@dep.nj.gov no later than 5:00 P.M. Monday, February 7, 2022, with your contact information (name, organization, telephone number, and email address). You must provide a valid email address so the Department can send you an email confirming receipt of your interest in testifying orally at the hearing and providing you with a separate option for a telephone call-in line if you do not have access to a computer or mobile device that can connect to Microsoft Teams. This hearing will be recorded. It is requested (but not required) that anyone providing oral testimony at the public hearing provide a copy of any prepared remarks to the Department through email.

The proposed rules will become operative 60 days after their adoption (see N.J.S.A. 26:2C-8). This rule proposal may be viewed or downloaded from the Department's website at

The agency proposal follows:

**Summary**

As the Department has provided a 60-day comment period on this notice of proposal, this notice is excepted from the rulemaking calendar requirement pursuant to N.J.A.C. 1:30-3.3(a)5.

On January 27, 2020, Governor Murphy issued Executive Order No. 100 (2020) (EO No. 100), which directs the Commissioner of the Department to, among other things, reform and modernize its air and land use regulations to mitigate the effects of climate change and to gather information to inform future climate-related rulemaking. In response to EO No. 100, Commissioner Catherine McCabe issued Administrative Order 2020-01 (AO No. 1), https://www.nj.gov/dep/njpact/, which directs the Department to propose regulations that reduce emissions of $CO_2$ and short-lived climate pollutants, as well as identify the rules and programs that should be updated to better respond to the challenges presented by climate change. The Department held stakeholder meetings on February 25, 2020, as well as September 3, 10, and 16, 2020, to discuss potential rulemakings to reduce greenhouse gas and other pollutants from stationary and mobile sources. The public information meeting materials are available on the Department's website at https://www.nj.gov/dep/njpact/.

In a separate rulemaking, the Department proposes to incorporate by reference California's Advanced Clean Trucks regulation (53 N.J.R. 588(a)), which begins the State's transition of the heavy-duty vehicle and engine sector to zero-emission. The rulemaking focuses on reducing greenhouse gas emissions and criteria air pollution, specifically, emissions

of oxides of nitrogen ($NO_x$) and fine particulate matter (PM2.5), from on-road heavy-duty vehicles and engines.

This rulemaking concerns diesel-fueled mobile sources at ports and intermodal rail yards. Specifically, the Department proposes rules based on California's regulation requiring diesel mobile cargo handling equipment at ports and intermodal rail yards to apply best available control technology while zero-emission technology continues to advance for this equipment. With the proposed rules, the Department expects to reduce diesel engine emissions, including $NO_x$, particulate matter (PM), and PM2.5. New Jersey is in nonattainment for the Federal ozone national ambient air quality standard (NAAQS) and must continue to reduce $NO_x$ emissions Statewide to attain, and maintain, the ozone NAAQS. Moreover, the Department expects that communities near ports and intermodal rail yards in the State where cargo handling equipment is operated will particularly benefit from the reduced emissions. These include some communities identified as overburdened, as defined at N.J.S.A. 13:1D-158.

The portions of the Summary that follow are organized by topic; consequently, some provisions of the new rules, such as the definitions, may be discussed in several places in the Summary.

**Global Warming Response Act**

In 2007, New Jersey's Legislature passed the Global Warming Response Act (GWRA), which recognized that climate change, primarily caused by emissions of heat-trapping greenhouse gases, poses a threat to the Earth's ecosystems and environment. See N.J.S.A. 26:2C-38. Additionally, the Legislature recognized that reducing emissions of greenhouse gases

was not only possible, but necessary, to prevent further detrimental impacts on human, animal, and plant life. *Id*. A dozen years later, the Legislature amended the GWRA to acknowledge the role that short-lived climate pollutants play in climate change and to require the State to develop programs to reduce emissions of both greenhouse gases and short-lived climate pollutants through a comprehensive strategy. See P.L. 2019, c. 197. The GWRA's two long-term goals are to reduce greenhouse gas emissions to the 1990 level of Statewide greenhouse gas emissions by 2020 (2020 goal), which the State met, and to further reduce Statewide emissions by 80 percent below the 2006 level by 2050 (80x50 goal).

Recognizing the need for a comprehensive strategy, Governor Murphy directed multiple State agencies to develop or update reports and implement policies to mitigate climate change and strengthen resilience. Pursuant to Executive Order No. 28 (2019), the New Jersey Energy Master Plan was updated for 2019. *2019 Energy Master Plan: Pathway to 2050*, Executive Summary, https://nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf (2019 EMP). The updated 2019 EMP included extensive modeling that resulted in the identification of seven overarching strategies the State should pursue to meet the 80x50 goal of the GWRA and the 2019 EMP goal of 100 percent clean energy by 2050. Pursuant to the GWRA, the Department released the 2050 Report on October 15, 2020. The 2050 Report builds on the 2019 EMP by analyzing New Jersey's emissions reductions to date, evaluating plans presently in place for further reducing emissions, and presenting a set of strategies across seven emission sectors for policymakers to consider in formulating legislation, regulations, policies, and programs to ensure that New Jersey achieves the 80x50 goal. New Jersey Department of Environmental Protection, *New Jersey's Global Warming Response Act 80x50 Report*, October 15, 2020, Executive Summary,

p.v, https://www.nj.gov/dep/climatechange/docs/nj-gwra-80x50-report-2020.pdf (2050 Report).

As the Department evaluates strategies and measures to reduce pollutants contributing to climate change, the Department continues to look at ways to improve the State's air quality by reducing both $NO_x$ emissions, which are a precursor of ground-level ozone (referred to simply as ozone) and PM2.5, and direct emissions of PM. PM is a term for a mixture of solid particles and liquid droplets in the air. See EPA Particulate Matter (PM) Basics, https://www.epa.gov/pm-pollution/particulate-matter-pm-basics. Particles "come in many sizes and shapes and can be made up of hundreds of different chemicals." *Ibid*. Particles are directly emitted from sources like construction sites and smokestacks and are also formed in the atmosphere when chemicals, such as sulfur dioxide and nitrogen oxides, react. *Ibid*. Particle pollution includes PM10, as well as the smaller PM2.5. *Ibid*. PM2.5 includes all particulate matter having an aerodynamic diameter less than or equal to a nominal 2.5 microns, including condensable particulate matter. PM10 refers to inhalable particles with a diameter generally 10 microns or less. See CARB, Inhalable Particulate Matter and Health (PM2.5 and PM10), https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health.

The public health and environmental concerns associated with ozone and PM pollution are heightened because of the interaction between climate change and air quality. High temperatures, ample sunshine, and stagnant air masses are conducive to high ozone levels and often result in higher PM levels in the ambient air. See New Jersey Department of Environmental Protection, *New Jersey Scientific Report on Climate Change*, June 2020, p. 61, https://www.nj.gov/dep/climatechange/docs/nj-scientific-report-2020.pdf (2020 Report on

Climate Change). Although precursor emissions may decrease, they are expected to remain high in dense urban areas and air quality generally will deteriorate due to a warming climate. *Id*. at 62.

**Emission standards for nonroad (off-road) engines**

A primary goal of the Federal Clean Air Act (CAA) is the attainment and maintenance of the National Ambient Air Quality Standards (NAAQS). The CAA, as amended in 1990, gives the U.S. Environmental Protection Agency (EPA) express authority to regulate nonroad sources of air pollution. See 42 U.S.C. § 7547. The CAA directs the EPA to study emissions from nonroad engines and vehicles and to regulate these sources if the EPA finds that their emissions are significant contributors to ozone or carbon monoxide (CO) in more than one nonattainment area for these pollutants. Nonroad engines are internal combustion engines used in different types and sizes of off-road equipment and vehicles—for example, excavators, bulldozers, locomotives, marine vessels, and lawnmowers – for a wide range of applications. Nonroad engines are not used in a motor vehicle (a self-propelled vehicle designed for transporting persons or property on a street or highway) or a vehicle used solely for competition. See 42 U.S.C. § 7550.

The CAA authorizes California to adopt and enforce standards and requirements for nonroad engines other than those specifically preempted by the CAA, after the EPA authorizes California to do so. 42 U.S.C. § 7543(e)(2). The CAA expressly preempts any state from adopting emission standards and requirements for new nonroad engines used in construction or farm equipment or vehicles that are smaller than 175 horsepower, or new locomotives or

new engines used in locomotives. 42 U.S.C. § 7543(e). Other states may adopt California's EPA-authorized emission standards and other requirements for nonroad engines, provided the state gives two years' lead time. *Id*. Because California refers to nonroad engines as off-road engines, in this notice of proposal Summary the Department uses the term "nonroad" when discussing the EPA's regulations and "off-road" engines when referring to California's regulations.

*Tier 1*

The EPA completed its study of nonroad engines and vehicles in November 1991. See EPA, Nonroad Engine and Vehicle Emission Study – Report, EPA-21A-2001 (November 1991), https://nepis.epa.gov/Exe/ZyPDF.cgi/2000SUNG.PDF?Dockey=2000SUNG.PDF. As directed by Congress, the report evaluated "the contribution of nonroad sources to ozone and carbon monoxide air pollution and to other pollutants believed to endanger public health." *Id*. at v. In 1994, after the EPA completed its study, the EPA finalized its determination that nonroad engines are significant contributors to nonattainment of the NAAQS for ozone and CO in more than one nonattainment area. Because of the EPA's positive determination, the EPA was required to promulgate regulations to reduce emissions from nonroad sources. Accordingly, the EPA adopted its first set of standards for carbon monoxide (CO), hydrocarbon (HC), particulate matter (PM), oxides of nitrogen ($NO_x$), and smoke emissions from large nonroad compression ignition (CI) engines at, or above, 37 kilowatts (kW), or 50 horsepower (hp), in power. 59 FR 31,306 (June 17, 1994). At that point, the EPA considered a CI engine to be "an internal combustion engine in which air is compressed to a temperature sufficiently high to ignite fuel injected into the combustion chamber." 58 FR 28,809, 28,813, n.17 (May 17, 1993).

The EPA later formally defined "CI engine," as explained below.

This first phase of standards is referred to as Tier 1. The EPA established four categories according to an engine's gross maximum power output (in metric units). The four categories are engines greater than or equal to 37 kW (50 hp), but less than 75 kW (100 hp); greater than or equal to 75 kW (100 hp), but less than 130 kW (175 hp); greater than or equal to 130 kW (175 hp), but less than or equal to 560 kW (750 hp) (the category most similar to certified on-road engines); and greater than 560 kW (750 hp). The EPA staggered the effective date by which each category of engine was required to be certified to the emission standards, expressed in grams per kW-hour (kW-hr) (or grams per hp-hour (hp-hr), and other requirements. Pre-Tier 1 engines were not required to be certified to meet any emission standards and are referred to as Tier 0.

*Tier 2 and Tier 3*

In 1998, the EPA finalized its Tier 2 and Tier 3 standards for nonroad CI engines at or above 37 kW (50 hp). 63 FR 56,968 (Oct. 23, 1998). The EPA's 1998 standards defined a CI engine according to engine cycle (diesel) to follow the definition for highway engines (40 CFR 89.2), and began to refer to CI engines interchangeably with diesel engines. See 63 FR at 56,972.

Continuing to align its nonroad engine standards with those for on-highway engines, the EPA finalized the Tier 2 and Tier 3 emission standards to "approximate the degree of control anticipated from existing standards covering engines used in heavy-duty diesel highway vehicles, with approximate consideration of differences in the sizes and operational characteristics of the engines and in the organization of the industries." 63 FR at 56,969. The

Tier 2 and Tier 3 standards generally paralleled the standards that apply to 1998 model year and 2004 model year highway engines, respectively. *Id*. Thus, nonroad engine standards generally followed the standards for on-road vehicles, with compliance several years behind. The Tier 1 through 3 requirements are reflected at 40 CFR 89.112, Table 1, reproduced below:

Table 1.—Emission Standards (g/kW-hr)

| Rated Power (kW) | Tier | Model Year[1] | NOx | HC | NMHC + NOx | CO | PM |
|---|---|---|---|---|---|---|---|
| kW<8 | Tier 1 | 2000 | — | — | 10.5 | 8.0 | 1.0 |
| | Tier 2 | 2005 | — | — | 7.5 | 8.0 | 0.80 |
| 8≤kW<19 | Tier 1 | 2000 | — | — | 9.5 | 6.6 | 0.80 |
| | Tier 2 | 2005 | — | — | 7.5 | 6.6 | 0.80 |
| 19≤kW<37 | Tier 1 | 1999 | — | — | 9.5 | 5.5 | 0.80 |
| | Tier 2 | 2004 | — | — | 7.5 | 5.5 | 0.60 |
| 37≤kW<75 | Tier 1 | 1998 | 9.2 | — | — | — | — |
| | Tier 2 | 2004 | — | — | 7.5 | 5.0 | 0.40 |
| | Tier 3 | 2008 | — | — | 4.7 | 5.0 | |
| 75≤kW<130 | Tier 1 | 1997 | 9.2 | — | — | — | — |
| | Tier 2 | 2003 | — | — | 6.6 | 5.0 | 0.30 |
| | Tier 3 | 2007 | — | — | 4.0 | 5.0 | |
| 130≤kW<225 | Tier 1 | 1996 | 9.2 | 1.3 | — | 11.4 | 0.54 |
| | Tier 2 | 2003 | — | — | 6.6 | 3.5 | 0.20 |
| | Tier 3 | 2006 | — | — | 4.0 | 3.5 | |
| 225≤kW<450 | Tier 1 | 1996 | 9.2 | 1.3 | — | 11.4 | 0.54 |
| | Tier 2 | 2001 | — | — | 6.4 | 3.5 | 0.20 |
| | Tier 3 | 2006 | — | — | 4.0 | 3.5 | |
| 450≤kW≤560 | Tier 1 | 1996 | 9.2 | 1.3 | — | 11.4 | 0.54 |
| | Tier 2 | 2002 | — | — | 6.4 | 3.5 | 0.20 |
| | Tier 3 | 2006 | — | — | 4.0 | 3.5 | |
| kW>560 | Tier 1 | 2000 | 9.2 | 1.3 | — | 11.4 | 0.54 |
| | Tier 2 | 2006 | — | — | 6.4 | 3.5 | 0.20 |

[1] The model years listed indicate the model years for which the specified tier of standards take effect.

In establishing the Tier 2 and Tier 3 standards, the EPA divided the original engine

category of greater than or equal to 130 kW (175 hp), but less than or equal to 560 kW (750 hp) into three categories: greater than or equal to 130 kW (175 hp), but less than or equal to 225 kW (300 hp); greater than or equal to 225 kW (300 hp), but less than or equal to 450 kW (600 hp); and greater than or equal to 450 kW (600 hp), but less than or equal to 560 kW (750 hp). For the first time, the EPA established emission standards (Tier 1 and Tier 2, phased in) for small engines rated under 37 kW. *Id*.

*Tier 4*

In 2004, the EPA finalized its Tier 4 standards for nonroad diesel engines, which the EPA anticipated would "achieve reductions in PM and $NO_x$ emission levels in excess of 95 percent and 90 percent respectively." 69 FR 38,958, 38,960 (June 29, 2004). As the EPA explained, "[n]onroad engines, and most importantly nonroad diesel engines, contribute significantly to ambient $PM_{2.5}$ levels, largely through direct emissions of carbonaceous and sulfate particles in the fine (and even ultrafine) size range." 69 FR at 38,964. More than 90 percent of particulate matter in diesel exhaust is less than one micron in diameter and, therefore, is a subset of PM2.5. See CARB, Inhalable Particulate Matter and Health (PM2.5 and PM10), https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health. Diesel nonroad engines also emit high levels of $NO_x$, which reacts in the atmosphere to form secondary PM2.5 and ozone, and sulfur dioxide ($SO_2$) and hydrocarbons, which also react in the atmosphere to form secondary PM2.5. *Id*. at 38,964.

To reduce harmful pollution from nonroad diesel engines and benefit human health and welfare, the EPA finalized the Tier 4 standards for nonroad diesel engines of all power ratings. The EPA established a phase-in schedule beginning in 2008, with applicable emissions standards

determined by model year for each of five power categories. Engines less than 25 hp must meet a new engine standard for PM of 0.30 g/bhp-hr. 69 FR at 38,961; see 40 CFR 1039.101, Table 1. For engines of 25 to 75 hp, the EPA's standards reflected approximately 50 percent PM reductions from Tier 3 engines. Starting in 2013, these engines were required to meet standards of 0.02 g/bhp-hr for PM. Standards of 0.01 g/bhp-hr for PM and 0.30 g/bhp-hr for $NO_x$ were finalized for engines of 75 to 175 hp, starting in 2012, with the $NO_x$ standards phased in. The PM and $NO_x$ standards for engines of 75 to 175 hp also applied to engines of 175 to 750 hp, starting in 2011, with a similar phase-in schedule. Engines above 750 hp had to meet a PM standard of 0.075 g/bhp-hr, starting in 2011. *Id*.

To transition to Tier 4 final standards, the EPA established interim standards, which began between 2008 and 2012 for most engines, and final standards, which were effective for all off-road engines by 2015. See 69 FR at 38,961.

*California off-road engine standards*

For new off-road diesel engines, California has harmonized with Federal nonroad compression ignition engine emission standards. See California Air Resources Board (CARB), Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Regulation for Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards, October 2005 (CARB Initial ISOR), II-8 to 9, https://ww3.arb.ca.gov/regact/cargo2005/isor.pdf. Like the EPA nonroad CI engine standards, CARB's off-road CI engine standards (Tiers) vary depending on the engine model year and maximum rated power. *Ibid*. The Tier 1 through Tier 4 standards as provided by CARB, CARB Initial ISOR, Table II-2 at p. II-9, are reproduced below:

| HP (kw) | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015+ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| < 11 (8) | See Table 2 footnote (a) | | | | | 7.8 / 6.0 / 0.75 (10.5 / 8.0 / 1.0 ) | | | | | *5.6 / 6.0 / 0.60 (7.5 / 8.0 / 0.80)* | | | **5.6 / 6.0 / 0.30[a] (7.5 / 8.0 / 0.40)** | | | | | | | |
| ≥ 11(8) < 25 (19) | | | | | | 7.1 / 4.9 / 0.6 (9.5 / 6.6 / 0.80) | | | | | *5.6 / 4.9 / 0.60 (7.5 / 6.6 / 0.80)* | | | **5.6 / 4.9 / 0.30 (7.5 / 6.6 / 0.40)** | | | | | | | |
| ≥ 25(19) < 50 (37) | | | - | | | 7.1 / 4.1 / 0.6 (9.5 / 5.5 / 0.80) | | | | | *5.6 / 4.1 / 0.45 (7.5 / 5.5 / 0.60)* | | | 5.6 / 4.1 / 0.22 (7.5 / 5.5 / 0.30) | | | | | | **3.5 / 4.1 / 0.02 (4.7 / 5.5 / 0.03)** | |
| ≥ 50 (37) < 75 (56) | | | | - | | - / 6.9 / - / -[b] (- / 9.2 / - / -) | | | | | *5.6 / 3.7 / 0.30 (7.5 / 5.0 / 0.40)* | | | 3.5 / 3.7 / 0.22 (4.7 / 5.0 / 0.30) | | | | | | **3.5 / 3.7 / 0.02[c] (4.7 / 5.0 / 0.03)** | |
| ≥ 75 (56) < 100 (75) | | | | | | | | | | | | | | *3.5 / 3.7 / 0.30 (4.7 / 5.0 / 0.40)* | | | | 0.14 / 2.5 / 3.7 / 0.01[b,d] (0.19 / 2.0 / 3.5 / 0.02) | | | **0.14 (0.19) 0.30 (0.40) 3.7 (5.0) 0.01[b] (0.02)** |
| ≥ 100 (75) < 175 (130) | | | | | - | | | | *4.9 / 3.7 / 0.22 (6.6 / 3.5 / 0.20)* | | | | *3.5 / 3.7 / 0.22 (4.0 / 5.0 / 0.30)* | | | | | | | | |
| ≥ 175 (130) < 300 (225) | | | | | | | | | *4.8 / 2.6 / 0.15 (6.4 / 3.5 / 0.20)* | | | | | | | | 0.14 / 1.5 / 2.6 / 0.01[b,d] (0.19 / 2.0 / 3.5 / 0.02) | | | | **0.14 (0.19) 0.30 (0.40) 2.6 (3.5) 0.01[b] (0.02)** |
| ≥ 300 (225) < 600 (450) | | - | | 1.0 / 6.9 / 8.5 / 0.40[b] (1.3 / 9.2 / 11.4 / 0.54) | | | | | | *4.8 / 2.6 / 0.15 (6.4 / 3.5 / 0.20)* | | | *3.0 / 2.6 / 0.15[e] (4.0 / 3.5 / 0.20)* | | | | | | | | |
| ≥ 600 (450) < 750 (560) | | | | | | | | | | | | | | | | | | | | | |
| Mobile Machines < 750 (560) | | | | | | | | | | | | | | | | | | | | | **0.14 (0.19) 2.6 (3.5) 2.6 (3.5) 0.03[b] (0.04)** |
| GEN > 750 (560) ≤ 1207 (900) | | | | | | | | | 1.0 / 6.9 / 8.5 / 0.40[b] (1.3 / 9.2 / 11.4 / 0.54) | | | | *4.8 / 2.6 / 0.15 (6.4 / 3.5 / 0.20)* | | | | 0.30 / 2.6 / 2.6 / 0.07[b] (0.40 / 3.5 / 3.5 / 0.10) | | | **0.14 (0.19) 0.5 (0.67) 2.6 (3.5)** |
| GEN > 1207 (900) | | | | | | | | | | | | | | | | | 0.30 / 0.50 / 2.6 / 0.07[b] (0.40 / 0.67 / 3.5 / 0.10) | | | | **0.02[b] (0.03)** |

a) The PM standard for hand-start, air cooled, direct injection engines below 11 hp (8 kW) may be delayed until 2010 and be set at 0.45 g/bhp-hr (0.60 g/kW-hr).

b) Standards given are NMHC/$NO_x$/CO/PM in g/bhp-hr (or g/kW-hr).

c) Engine families in this power category may alternately meet Tier 3 PM standards [0.30 g/bhp-hr (0.40 g/kW-hr)] in 2008-2011 in exchange for introducing final PM standards in 212.

d) The implementation schedule shown is in the three-year alternate $NO_x$ approach. Other schedules are available.

e) Certain manufacturers have agreed to comply with these standards by 2005.

| Tier 1 | *Tier 2* | *Tier 3* | Tier 4 interim | **Tier 4 final** |
|---|---|---|---|---|

**Cargo Handling Equipment at Ports and Intermodal Railyards, N.J.A.C. 7:27-34, generally**

To address the concerns posed by emissions from cargo handling equipment in New Jersey communities near ports and intermodal rail yards, the Department proposes rules modeled on California's Regulation for Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards (CHE Regulation), 13 CCR 2479, which was effective December 31, 2006, and amended in 2012. See CARB Initial ISOR; California Air Resources Board (CARB), Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Amendments to Regulation for Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards, August 2011 (CARB Amendments ISOR), ES-2, https://ww3.arb.ca.gov/regact/2011/cargo11/cargoisor.pdf; CARB Executive Order R-12-009, https://ww3.arb.ca.gov/regact/2011/cargo11/cargoeo.pdf. The EPA authorized California's CHE Regulation. 77 FR 9,916 (Feb. 21, 2012); 80 FR 26,249 (May 7, 2015).

The goal of the CHE Regulation, and the proposed new rules, is to reduce diesel PM and

$NO_x$ emissions from new and in-use (existing) cargo handling equipment at ports and intermodal rail yards through replacement with engines or equipment that meet the most stringent emissions control technology standard or through the application of the most stringent emission control strategy. See CARB Initial ISOR at ES-2. As noted, Tier 4 final engines are 90 percent cleaner than unregulated or Tier 0 engines. Achieving these reductions is important because "[d]iesel engine exhaust is a source of unhealthful air pollutants including gaseous- and particulate-phrase toxic air contaminants (TAC), particulate matter, carbon monoxide, hydrocarbons, and oxides of nitrogen." CARB Initial ISOR, p. I-1. The primary gas phase components of diesel exhaust include $NO_x$, $CO_2$, CO, $SO_2$, reactive organic gases, water vapor, and excess air. *Id*. at I-3. Almost all diesel particles are PM10 and approximately 94 percent of diesel particles are PM2.5, a subset of PM10.

*Public health and welfare effects of diesel pollution*

Particulate matter in the ambient air is associated with key health effects categories, such as premature mortality, aggravation of respiratory and cardiovascular disease, aggravated asthma, and acute respiratory symptoms, including aggravated coughing and difficult or painful breathing, chronic bronchitis, and decreased lung function. *Id*. at I-5. PM exposure is associated with "increased hospital admissions for ischemic heart disease, heart failure, respiratory disease, including chronic obstructive pulmonary disease (COPD) and pneumonia," as well as "increased cough, lower respiratory symptoms, and decrements in lung function." 69 FR at 38,966. Studies also "have associated changes in heart rate and/or heart rhythm in addition to changes in blood characteristics with exposure to ambient PM. Short-term variations in ambient PM have also been associated with increases in total and cardiorespiratory mortality."

*Ibid*.

Long-term exposure to ambient PM2.5 has also been shown to be associated with premature mortality, including from lung cancer. *Ibid*. Studies also indicate that "asthma, lung function decrement, respiratory symptoms, and other respiratory problems appear to occur more frequently in people living near busy roads." *Ibid*. One study "indicated that long-term residence near major roads, an index of exposure to primary mobile source emissions (including diesel exhaust), was significantly associated with increased cardiopulmonary mortality." *Ibid*. "Other studies have shown children living near roads with high truck traffic density have decreased lung function and greater prevalence of lower respiratory symptoms compared to children living on other roads." *Ibid*.

"Diesel PM can be distinguished from noncombustion sources of PM2.5 by the high content of elemental carbon with adsorbed organic compounds and the high number of ultrafine particles (organic carbon and sulfate)." CARB Initial ISOR at I-3 to 4. Particles in diesel engine exhaust (diesel particles) contain compounds that are potent mutagens and carcinogens. *Id*. at I-3. Diesel PM, therefore, is a particular public health concern because these particles pose a lung cancer hazard and cause other noncancer respiratory effects, such as lung inflammation. *Id*. at I-4; see 69 FR at 38,966. Nonroad diesel engine emissions contain substances known, or suspected, to have both carcinogenic and noncancer health effects, as well as the potential to cause health effects at environmental levels of exposure. 69 FR at 38,966. These compounds include benzene, 1,3-butadiene, formaldehyde, acetaldehyde, acrolein, dioxin, and polycyclic organic matter. *Ibid*. "For some of these pollutants, nonroad diesel engine emissions are believed to account for a significant proportion of total nationwide

emissions." *Ibid*.

$SO_2$, $NO_x$, and organic compounds, which are emitted by diesel engines, are PM precursors. Diesel engine exhaust also contains $NO_x$ and reactive organic gases, which are ozone precursors. Ozone damages the respiratory tract; the inflammation and irritation caused by ozone can result in breathing difficulties. Individuals repeatedly exposed to ozone can become more susceptive to respiratory infection and lung inflammation. Additionally, prolonged, repeated exposure to ozone can inflame the lung, impair lung defense mechanisms, and cause irreversible changes in lung structure, which could lead to premature aging of the lungs and/or chronic respiratory illnesses, including emphysema and chronic bronchitis. Individuals most susceptible to ozone health effects include children, people with preexisting lung disease, and adults exercising or working outdoors. CARB Initial ISOR at I-5 to 6. See also 69 FR at 38,967.

Nonroad diesel engines also cause non-health impacts including "visibility impairment, soiling and material damage, acid deposition, eutrophication of water bodies, plant and ecosystem damage from ozone, water pollution resulting from deposition of toxic air pollutants with resulting effects on fish and wildlife, and odor." 69 FR at 38,967.

*Proposed cargo handling equipment regulations, generally*

California adopted the CHE Regulation to protect the public health and welfare from harmful air pollution emitted by cargo handling equipment used at ports and intermodal rail yards, which operate in or near densely populated areas. The CHE Regulation requires new equipment operating at California's ports and intermodal rail yards to meet California's most current on-road or off-road engine standards. The CHE Regulation also requires in-use (or

existing) equipment to be replaced with cleaner engines and, in some cases, to be retrofitted to reduce PM emissions. Cargo handling equipment must also not exceed opacity limits.

The Department proposes rules based on California's CHE Regulation; however, as discussed in more detail below, the proposed rules differ somewhat from the CHE Regulation. Specific provisions of the CHE Regulation were based on conditions no longer pertinent; therefore, these outdated provisions are not in the proposed new rules. The Department proposes other differences based on the state of technology and engine and equipment availability at the time of this rulemaking, compared with when the CHE Regulation became effective on December 31, 2006, before Tier 4 final was effective for all off-road engines. See CARB Initial ISOR at V-2. For example, CARB provided an extended phased compliance schedule for in-use cargo handling equipment to allow for technology development and adequate engine availability. The Department believes a shorter compliance period is appropriate because Tier 4 final has been in effect since 2015 for all off-road engines and only engines that comply with Tier 4 final requirements are available for new purchase at this time.

The proposed rules allow for compliance extensions if there is a manufacturer delay in delivery of compliant equipment, for equipment that is operated less than 200 hours annually (low-use equipment), or if the existing equipment will be replaced with zero-emission equipment. If compliant equipment is not available for a particular use or application, the rules allow a case-by-case application of best available control technology for the particular equipment. The rules also allow fleet averaging as an alternate compliance option. Proposed reporting and recordkeeping requirements are intended to enable the Department to ensure compliance and to provide the Department with information regarding the universe of cargo

handling equipment operating at New Jersey ports and intermodal rail yards.

**N.J.A.C. 7:27-34.1, Purpose**

Proposed new N.J.A.C. 7:27-34, Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards, is based on California's CHE Regulation that requires cargo handling equipment operating at ports and intermodal rail yards to meet performance standards based on the application of best available control technology. The subchapter applies to all cargo handling equipment that is operated within a port's boundaries or at an intermodal rail yard, with certain exemptions provided at N.J.A.C. 7:27-34.2. The Department's goal in proposing N.J.A.C. 7:27-34, as set forth at N.J.A.C. 7:27-34.1, Purpose, is to reduce $NO_x$ and PM emissions from cargo handling equipment with diesel-fueled compression ignition engines operating at ports and intermodal rail yards in the State, which is the same as California's goal in promulgating the CHE Regulation. See 13 CCR 2479(a); CARB Initial ISOR at I-1. "'Diesel particulate matter' or 'diesel PM,'" "'nitrogen oxides' or '$NO_x$'" and "'particulate matter' or 'PM'" are defined at proposed N.J.A.C. 7:27-34.3 in accordance with their generally accepted scientific meanings and consistent with their definitions in 13 CCR 2479. "'Hydrocarbon' or 'HC'" is proposed to be defined at N.J.A.C. 7:27-34.3, as any compound or mixture of compounds whose molecules consist of atoms of hydrogen and carbon only.

At N.J.A.C. 7:27-34.3, the Department proposes to define "cargo handling equipment" as any mobile off-road, self-propelled vehicle, or equipment with a diesel-fueled CI engine used at a port or intermodal rail yard to lift or move container, bulk, or liquid cargo carried by ship, train, or another vehicle. The term also includes any mobile off-road, self-propelled vehicle or

equipment with a diesel-fueled CI engine used at a port or intermodal rail yard to perform routinely scheduled or predictable maintenance and repair activities. The Department proposes to define "cargo" to mean material, goods, or commodities transported to, or from, a port or intermodal rail yard by ship, train, truck, or other transportation mode. "Off-road vehicle or equipment" is defined at proposed N.J.A.C. 7:27-34.3 to mean any non-stationary device powered by an internal combustion engine or motor used primarily off the highways to propel, move, or transport persons or property. "Diesel-fueled CI engine," "diesel fuel," "'ultra-low sulfur diesel' or 'ULSD,'" "'compression ignition engine' or 'CI engine'" are proposed to be defined consistent with their definitions at 13 CCR 2479.

As CARB explained, "cargo handling equipment at ports and intermodal rail yards is as diverse a group of equipment as the cargo that it handles . . . [which] can include liquid, bulk (break bulk and dry bulk), and containers." CARB Initial ISOR at I-12. Liquid cargo can include petroleum products and chemicals, which usually do not have mobile cargo handling equipment associated with their transport since they are often transported by pipeline. *Id*. At II-12. Break bulk cargo includes lumber, steel, machinery, and other types of palletized goods. *Ibid*. Dry bulk cargo includes cement, scrap metal, salt, sugar, sulfur, and petroleum coke. *Ibid*.

All cargo handling equipment can be classified as either a yard truck or a non-yard truck (by definition, a "non-yard truck" is all cargo equipment that is not a "yard truck"). A "yard truck" is defined at N.J.A.C. 7:27-34.3 as an off-road mobile utility vehicle, with or without chassis, that is used to carry cargo containers. As explained by CARB, a yard truck is the most common type of cargo handling equipment and designed to move cargo containers. CARB Initial ISOR at II-1. Although yard trucks are similar to heavy-duty on-road truck tractors, most

are equipped with off-road engines. *Ibid*. According to CARB, yard trucks have a horsepower (hp) range of about 150 to 250 hp, but most are around 175 to 200 hp. *Id*. At II-2.

A "non-yard truck" is a broad category that includes equipment used to move containers, such as "rubber-tired gantry cranes," "top handlers," "side handlers," and "reach stackers," each defined at N.J.A.C. 7:27-34.3, consistent with their definitions at 13 CCR 2479, and straddle carriers. Rubber-tired gantry cranes, or RTG cranes, are "very large cargo container handlers that have a lifting mechanism mounted on a cross-beam supported on vertical legs which run on rubber tires." CARB Initial ISOR at II-3. RTG cranes have a horsepower range of about 200 to 1,000 hp; most are between 300 to 1,000 hp. *Ibid*. Top handlers or top picks are "large truck-like vehicles with an overhead boom which locks onto the top of containers in a single stack." *Id.* At II-2. They are used to stack containers and load containers onto and off of yard trucks. *Ibid*. Top handlers have a horsepower range of about 250 to 400 hp; most are between 250 and 350 hp. *Ibid*. Side handlers or side picks, similar to top handlers, are used to lift and stack usually empty containers using a boom arm, which extends the container width. *Ibid*. The horsepower range of side handlers is about 120 to 400 hp; most are between 160 and 250 hp. *Ibid*. A reach stacker lifts containers with a telescopic boom that moves up and out to reach over two or more stacks of containers and locks onto the container top. *Ibid*. Less commonly used, reach stackers have a horsepower range of about 250 to 400 hp, with most being between 230 and 300 hp. *Ibid*.

Bulk, non-containerized cargo is moved with equipment such as dozers, excavators, loaders, tractors, and aerial lifts. "Dozer," "excavator," "forklift," and "loader" are also separately defined at proposed N.J.A.C. 7:27-34.3 consistent with their definitions at 13 CCR

2479. Dozers and loaders are off-road tractors, either tracked or wheeled, used in dry bulk handling operations; dozers are also used in break bulk cargo handling operations. *Id*. At II-4. Dozers are equipped with a blade and have a horsepower range of 77 to 900 hp; most are between 300 to 400 hp. *Ibid*. A loader uses a bucket on the end of movable arms to lift and move materials. *Ibid*. Loaders have a horsepower range of 36 to over 1,000 hp; most are between 200 and 750 hp. *Ibid*. Finally, forklifts are industrial trucks that hoist and transport materials by inserting one or more steel forks or coils either under or in the middle of the load. *Id*. At II-3. Forklifts are used to move both containers and bulk cargo and have a horsepower range of about 45 to 280 hp. *Id*. At II-3.

**Applicability and General provisions, N.J.A.C. 7:27-34.2 and 34.4**

Generally speaking, the new subchapter applies to: (1) any person who owns or operates a terminal or business at a port in New Jersey and operates cargo handling equipment at that location; (2) any person who owns or operates an intermodal rail yard in New Jersey and operates cargo handling equipment at that location; and (3) any person conducting business in the State who sells, offers for sale, leases, rents, or purchases any cargo handling equipment or CI engine that is used at any port or intermodal rail yard in the State. See proposed N.J.A.C. 7:27-34.2(a).

*Ports in the State*

As provided at N.J.A.C. 7:27-34.4, a person who owns or operates a terminal or business at a port in the State and operates cargo handling equipment at that location must comply with the requirements at N.J.A.C. 7:27-34, including, but not limited to, the cargo handling equipment performance standards and reporting requirements.

"Port" is defined at N.J.A.C. 7:27-34.3 to mean a publicly or privately owned property located at a harbor or along a waterway where marine and port terminals typically load and unload water-borne commerce onto and from ocean-going vessels. The definition of a port includes all terminals and property within the port's physical boundaries or demarcated as the port on city or county land maps and all contiguous properties owned or operated by the port. "Contiguous properties" is defined at N.J.A.C. 7:27-34.3 to mean adjacent properties, even if they are separated by human-made barriers or structures, including roadways, or legal boundaries. The terms "ocean-going vessel" and "water-bourne commerce" are defined at proposed N.J.A.C. 7:27-34.3, consistent with the definitions at 13 CCR 2479. There are several locations in New Jersey that qualify as a "port" under the proposed rules, including, but not limited to, the Port of New York and New Jersey and ports along the Delaware River, such as Camden, Gloucester, Paulsboro, and Salem.

"Terminal" is proposed to be defined consistent with the definition in the CHE Regulation as "a facility, including one owned or operated by the Department of Defense or the U.S. military services, that handles cargo at a port or intermodal rail yard." "Person" is defined at N.J.A.C. 7:27-34.3, consistent with the definition of the term at N.J.A.C. 7:27-22.1. Thus, as proposed, the new subchapter will be applicable to both publicly and privately owned or operated terminals and businesses located at New Jersey ports (for example, privately owned port and marine terminals along the coast that handle liquid, bulk, or containerized cargo and privately operated businesses that lease property at a port), if cargo handling equipment is used on-site. This is consistent with the Department's intention to reduce diesel emissions at ports in the State by imposing performance standards on cargo handling equipment that

operates within a port's boundaries and is not otherwise exempt pursuant to N.J.A.C. 7:27-34.2.

*Intermodal rail yards in the State*

As provided at N.J.A.C. 7:27-34.4, a person who owns or operates an intermodal rail yard in the State and operates cargo handling equipment at that location must comply with the requirements at N.J.A.C. 7:27-34, including, but not limited to, the cargo handling equipment performance standards and reporting requirements.

The proposed definition of "intermodal rail yard" is consistent with the definition of this term at 13 CCR 2479. As defined, an intermodal rail yard is a transportation facility owned or operated by a Class I railroad, and is primarily dedicated to intermodal rail operations, which involve transferring cargo from one mode of transportation to another (such as train-to-ship, or train-to-truck). A "Class I railroad" is proposed to be defined at N.J.A.C. 7:27-34.3 as a freight railway that meets the revenue threshold for a Class I railroad, as defined by the Surface Transportation Board. See 49 CFR Part 1201. The Department proposes to use the Federal classification as CARB did. Two major railroad companies, CSX Transportation and Norfolk-Southern, operate several intermodal rail yards located in Newark, Elizabeth, Jersey City, North Bergen, and South Kearny, which are all cities in northern New Jersey. Thus, as proposed, the new subchapter will be applicable to all cargo handling equipment that operates within the boundaries of the intermodal railyard, unless the equipment is exempt pursuant to N.J.A.C. 7:27-34.2.

*Sales prohibition*

Proposed N.J.A.C. 7:27-34 also applies to any person conducting business in the State

who sells, offers for sale, leases, rents, or purchases any cargo handling equipment or compression ignition (CI) engine that is used at any port or intermodal rail yard in the State. See proposed N.J.A.C. 7:27-34.2. Proposed N.J.A.C. 7:27-34.4 prohibits the sale, offer for sale, importation, delivery, purchase, receipt, or acquisition of any cargo handling equipment for use at a port or intermodal rail yard in the State, if the equipment does not meet the performance requirements at N.J.A.C. 7:27-34. This prohibition is limited to cargo handling equipment for use at a port or intermodal rail yard in the State and applies to any person conducting business in the State.

*Engines and equipment not subject to N.J.A.C. 7:27-34*

At proposed N.J.A.C. 7:27-34.2, Applicability, the Department proposes to identify those types of engines and equipment that, consistent with the CHE Regulation, are not subject to the new subchapter. Proposed new N.J.A.C. 7:27-34 is intended to apply only to cargo handling equipment that is self-propelled. Portable CI engines are CI engines that are designed and capable of being carried or moved from location to location; they are not self-propelled and, thus, are not subject to N.J.A.C. 7:27-34. The Department proposes to define the term "portable CI engine" at N.J.A.C. 7:27-34.3, consistent with 13 CCR 2479. "Mobile cranes and sweepers," which are defined at N.J.A.C. 7:27-34.3, are not subject to N.J.A.C. 7:27-34 because they may have auxiliary engines that are considered portable CI engines. See CARB Initial ISOR at IV-4.

This subchapter also does not apply to "military tactical support cargo handling equipment," which is defined at N.J.A.C. 7:27-34.3 as cargo handling equipment that meets military specifications, is owned by the U.S. Department of Defense and/or the U.S. military

services, and is used in combat, tactical, or relief-related operations or training. Finally, because the subchapter is intended to cover equipment used to handle cargo, cargo handling equipment that is used only to support construction activities at a port or intermodal rail yard or is brought onsite to perform unexpected, non-routine, or unpredictable repairs or maintenance is exempt from N.J.A.C. 7:27-34. "Construction activities" is defined at proposed N.J.A.C. 7:27-34.3, consistent with 13 CCR 2479.

Another proposed limited exemption is for low-throughput ports that are further than 75 miles from an urban area, except as provided at proposed N.J.A.C. 7:27-34.13, Equipment at rural low-throughput ports. A "low-throughput port" is defined at N.J.A.C. 7:27-34.3 as a port with a two-year average annual cargo throughput of less than one million tons per year, excluding petroleum products. If a port that has been classified as a low-throughput port subsequently exceeds the threshold limit, or the port becomes part of an urban area as defined at proposed N.J.A.C. 7:27-34.3, the port no longer meets the definition of "low-throughput port." The Department proposes to define the term "two-year average annual cargo throughput," consistent with the definition at 13 CCR 2479. As provided at proposed N.J.A.C. 7:27-34.13, within six months after the exceedance, each owner or operator at the port must submit a plan, to the Department, to bring the equipment into compliance no later than two years after the exceedance. The compliance plan must include information about equipment, as specified at proposed N.J.A.C. 7:27-34.14(c) and (d), and be submitted on a form that will be available on the Department's website www.stopthesoot.org.

California included this exemption as necessary for one California port, which was the only port in California that was expected to meet the criteria for the exemption. See CARB

Amendments ISOR at III-10 to 11. The Department proposes to include this exemption to be consistent with California's CHE Regulation, but does not believe there are any ports in the State that qualify for this exemption.

*Other general provisions*

As provided at N.J.A.C. 7:27-34.4, a person who fails to comply with any obligation or requirement at N.J.A.C. 7:27-34 shall be subject to an enforcement action pursuant to the Air Pollution Control Act at N.J.S.A. 26:2C-19 and proposed amended N.J.A.C. 7:27A-3. All information submitted to the Department pursuant to N.J.A.C. 7:27-34 is public information, unless the person submitting the information asserts a confidentiality claim and the Department determines the information is entitled to confidential treatment in accordance with existing N.J.A.C. 7:27-1.8 through 1.30.

**Performance standards for cargo handling equipment, alternative compliance options, and compliance extensions, N.J.A.C. 7:27-34.5, 34.6, 34.7, and 34.9 through 34.11C**

Consistent with the CHE Regulation, the Department proposes to require new and in-use cargo handling equipment at ports and intermodal rail yards to meet performance standards based on best available control technology. Generally, with some flexibility through alternate compliance plans and compliance extensions, the performance standards require all cargo handling equipment to be equipped with: 1) an on-road CI engine that is certified to meet the 2010 or later California on-road emission standards at 13 CCR 1956.8 for the model year in which the equipment is newly purchased, leased, or rented; or 2) a CI engine that is certified to

meet the Tier 4 final off-road engine emission standards at 13 CCR 2423 for the rated horsepower and model year.

The proposed terms "certified on-road engine" and "certified Tier 4 final off-road engine" are defined with reference to the applicable California emission standards, as provided in the California Code of Regulations, or "CCR" (a defined term), which are cited in the definitions and incorporated into the proposed rules by reference. "Model year" is proposed to be defined at N.J.A.C. 7:27-34.3 as the engine manufacturer's annual production period, which includes January 1 of a calendar year, or if the manufacturer has no annual production period, the calendar year. Ordinarily, equipment of a certain model year is in production months before the start of the corresponding calendar year. For example, equipment of model year 2025 will likely be in production, and may be offered for sale, prior to January 1, 2025.

The proposed requirements for new cargo handling equipment are summarized in Table 1. The requirements for in-use cargo handling equipment are summarized in Table 2.

**Table 1. Compliance options for new cargo handling equipment**

| | **Option #1** | **Option #2** | **Option #3** | **Option #4 if Options 1-3 are unavailable** |
|---|---|---|---|---|
| **New cargo handling equipment (yard truck or non-yard truck) registered as motor vehicle** | On-road engine certified to 2010 or later model year emission standards for model year of | | | |

| | | | | |
|---|---|---|---|---|
| | purchase, lease, or rental | | | |
| **New yard truck not registered as motor vehicle** | On-road engine certified to 2010 or later model year emission standards for model year of purchase, lease, or rental<br><br>-OR- | Certified Tier 4 final off-road engine for rated horsepower and model year<br><br>-OR- | Certified engine or power system equivalent to option 1 or 2 | |
| **New non-yard truck not registered as motor vehicle** | On-road engine certified to 2010 or later model year emission standards for model year of purchase, lease, or rental<br><br>-OR- | Certified Tier 4 final off-road engine for rated horsepower and model year<br><br>-OR- | Certified engine or power system equivalent to option 1 or 2 | Best available control technology |

**Table 2. Compliance options for in-use cargo handling equipment**

| | **Option #1** | **Option #2** | **Option #3** | **Option #4 if Options 1-3 are unavailable** |
|---|---|---|---|---|
| **In-use yard truck** | Certified on-road engine for 2010 or later model year<br><br>-OR- | Certified Tier 4 final off-road engine for rated horsepower and model year<br><br>-OR- | Alternative power system equivalent to option 1 or 2 | |
| **In-use non-yard truck** | Engine or power system certified to on-road emission standards for 2010 or later model year or Tier 4 final off-road emission standards for rated horsepower and model year<br><br>-OR- | Tier 4 alternate PM off-road emission standards for rated horsepower and model year plus Level 3 VDECS<br><br>-OR- | Alternative power system equivalent to option 1 | Best available control technology |

*Performance standards for new cargo handling equipment, N.J.A.C. 7:27-34.5*

Proposed N.J.A.C. 7:27-34.5, Performance standards for new cargo handling equipment, sets forth the requirements for all new cargo handling equipment. The Department proposes to define "new cargo handling equipment" as cargo handling equipment or a diesel-fueled CI engine installed in cargo handling equipment that is newly purchased, rented, leased, or otherwise brought onto a port or intermodal rail yard by an owner or operator on or after the first day of the 25th month following the operative date of this rulemaking, and is operated at a port or intermodal rail yard in the State after the same date. See proposed N.J.A.C. 7:27-34.3. For example, if the operative date of the rules is in the month of December 2022, cargo handling equipment is "new" on or after January 1, 2025, which is the first day of the 25th month after the December 2022 operative date. "Cargo handling equipment" includes yard trucks and non-yard trucks, some of which may be "registered motor vehicles" and, thus, able to travel public roads. The Department proposes to define "registered motor vehicle" as cargo handling equipment that is registered as a motor vehicle, pursuant to N.J.S.A. 39:3-4.

As provided at proposed N.J.A.C. 7:27-34.5, new cargo handling equipment that is registered as a motor vehicle must be equipped with a certified on-road engine for the model year in which the cargo handling equipment or engine is newly purchased, leased, or rented. For example, cargo handling equipment that is newly purchased in 2026 must have an engine certified to model year 2026 emission standards. The proposed requirement will ensure that newly registered on-road cargo handling equipment is equipped with the most up-to-date certified on-road diesel engine and meets emission standards that reflect the latest control technology. A "certified on-road engine" is an engine certified to 2010 or later model year California on-road diesel engine emission standards at 13 CCR 1956.8, which is incorporated by

reference into the proposed definition at N.J.A.C. 7:27-34.3. The Department proposes to define "certification" or "certified" as a finding by CARB or the EPA that the motor vehicle, motor vehicle engine, off-road CI engine, or air contaminant emission control system has met the criteria for the control of specified air contaminants for the respective vehicle, engine, or control system, adopted by CARB or the EPA, as applicable, in CARB's or Federal regulations. CARB and the EPA maintain certification lists at https://www.epa.gov/compliance-and-fuel-economy-data/annual-certification-data-vehicles-engines-and-equipment (EPA) and https://ww2.arb.ca.gov/new-vehicle-and-engine-certification-executive-orders (CARB). The Department proposes to define the "California Air Resources Board" or "CARB" at N.J.A.C. 7:27-34.33, since that term is not defined in the California regulations. The Department will not independently certify the engine or system. "Lease," "rent," and "purchased" are also proposed to be defined as the terms are defined in the CHE Regulation.

New cargo handling equipment that is not a registered motor vehicle is for off-road use only. The owner or operator has three general compliance options for this equipment, as provided at proposed N.J.A.C. 7:27-34.5(b). Each of the options requires the equipment to meet the most stringent emission standards for an on-road or off-road engine. Under the first option, as of the first day of the 25th month after the operative date of this rulemaking, new cargo handling equipment that is not a registered motor vehicle must be equipped with a certified on-road engine for the model year in which the cargo handling equipment is newly purchased, leased, or rented. The second option requires the equipment to be certified as a Tier 4 final off-road engine. To encourage the use of hybrid or alternative technology, as California does in its CHE Regulation, the Department also proposes a third option, which allows

an owner or operator to use a certified engine and power system that meet the emission standards of a certified on-road engine for the model year in which the cargo handling equipment and/or engine is newly purchased, leased, or rented, or a certified Tier 4 final off-road engine, as demonstrated to the Department through manufacturer testing or testing in accordance with CARB's "Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines (Verification Procedure)." The Department proposes to define "Verification Procedure," consistent with the definition at 13 CCR 2479. These options, like the options in the CHE Regulation, require a new off-road cargo handling equipment to meet the latest on-road engine standards or the Tier 4 final off-road standards for the rated horsepower. See CARB Initial ISOR at IV-1. The term "hybrid" is defined at proposed N.J.A.C. 7:27-34.3, consistent with the definition at 13 CCR 2479.

Proposed N.J.A.C. 7:27-34.5 provides that a non-yard truck that is moved from one port terminal or intermodal rail yard to another port terminal or intermodal rail yard under the same ownership or control is considered new and subject to the performance standards for new non-yard trucks. However, an owner or operator may request Department approval to transfer the equipment in accordance with proposed N.J.A.C. 7:27-34.12, Department approval to transfer non-yard trucks, in which case it will be subject to the in-use standards at N.J.A.C. 7:27-34.7.

In order to avoid having the non-yard truck considered newly acquired, an owner or operator must submit its request for transfer approval using forms that will be available on the Department's website, www.stopthesoot.org. The request must be submitted at least 60 days before the anticipated transfer date. The application must include information about each

equipment subject to the transfer request, including estimated emission levels based on the model year and rated horsepower and hours of operation. The application is also to include proximity of the new location to residences. The information is required so that the Department can determine if the transfer will impact public health.

As provided at N.J.A.C. 7:27-34.12, the Department will approve the request if the Department determines that the transfer plan does not result in an increase in public health impacts and the transfer is between facilities that are under the control of the same owner or operator. To ensure that an owner or operator will not try to use the transfer provisions to evade compliance, the owner or operator must also agree to bring the transferred equipment into compliance with the in-use requirements at proposed N.J.A.C. 7:27-34.7 before operating the equipment at the destination location.

If the transfer is approved, an owner or operator would be able to operate in-use cargo handling equipment that is not equipped with a certified on-road engine or certified Tier 4 final off-road engine at another port terminal or intermodal rail yard until the applicable compliance deadline at N.J.A.C. 7:27-34.7. If the transfer is approved, an owner or operator would also be allowed to transfer and operate an in-use non-yard truck that was approved to use an alternate compliance option, explained below.

*Alternative compliance options for new off-road non-yard trucks, N.J.A.C. 7:27-34.5, 34.10, and 34.10A*

The CHE Regulation provided an additional compliance option for new off-road non-yard trucks (non-yard trucks that are not registered motor vehicles), based on the unavailability of equipment. If a certified on-road engine or a certified Tier 4 final off-road diesel engine is not

available for purchase, lease, or rent and the owner or operator, therefore, cannot comply, the CHE Regulation allows an owner or operator to equip the non-yard truck with an engine certified to the highest available off-road diesel engine emission standard at 13 CCR 2423 for the rated horsepower and model year, provided the owner or operator installs the highest level verified diesel emission control strategy available. See 13 CCR 2479(e)(1)(B)3.

The Department proposes a similar option based on equipment or engine unavailability. At proposed N.J.A.C. 7:27-34.5(c), an owner or operator who cannot comply with N.J.A.C. 7:27-34.5(b) because a compliant engine is not available for the specific application and equipment type may apply to the Department to use the best available control technology in accordance with proposed N.J.A.C. 7:27-34.10, Alternate compliance option, generally, and N.J.A.C. 7:27-34.10A, Alternate compliance option - non-yard truck. Proposed N.J.A.C. 7:27-34.10 contains the requirements applicable to all applications for alternate compliance options, and proposed N.J.A.C. 7:27-34.10A applies specifically to applications for alternate compliance options for non-yard trucks, based on equipment or engine unavailability.

"Best available control technology" is the maximum degree of PM and $NO_x$ emissions reduction achievable through application of available methods, systems, devices, and techniques. The "best available control technology" for cargo handling equipment is a certified on-road engine or certified Tier 4 final off-road engine, as defined. However, if a compliant engine or equipment is not available for the particular use or application that would satisfy the requirements at N.J.A.C. 7:27-34.5(b)1, 2, or 3, an alternative compliance option is available. Department approval for this alternative compliance option will be on a case-by-case basis and is only available if the owner or operator demonstrates that a non-yard truck or engine that

complies with N.J.A.C. 7:27-34.5(b)1, 2, and 3 is not available from any engine and/or equipment manufacturer. The owner or operator must also perform an analysis of all available control technologies and demonstrate that the alternative proposed will achieve the maximum possible PM and $NO_x$ reductions for the particular engine/equipment.

Due to widespread availability of compliant engines for both on-road and off-road applications and the Department's goal to achieve the greatest degree of PM and $NO_x$ reductions possible, the Department intends to allow this alternate compliance option only in limited cases. The proposed alternative compliance option is based on the CHE Regulation; however, the present circumstances differ from 2007, when the CHE Regulation was adopted. At that time, the 2010 model year on-road standards were not yet in effect and Tier 4 final standards would not be effective for all off-road engines until 2015, making an alternative compliance option necessary. At the time of this rulemaking, certified on-road diesel engines and certified Tier 4 final off-road diesel engines are available for nearly all, if not all, uses and applications.

Proposed N.J.A.C. 7:27-34.10, Alternate compliance options, sets forth general requirements for an owner or operator to request, and receive approval of, an alternate compliance option, if it is unable to comply with the performance standards proposed for new and in-use cargo handling equipment. The general requirements include the contents and timing of the application, the Department's completeness determination, and timeframe for approval or denial. No person may operate any cargo handling equipment under an alternate compliance option, unless the applicant has been notified, in writing, by the Department that the option has been approved. If approved to use an alternate compliance option, the owner

or operator shall maintain, and retain, operating records, such as records including information on operation hours, fuel usage, maintenance procedures, and emissions test results, as specified by the Department in its approval and are otherwise required.

The Department will grant a request by an owner or operator pursuant to proposed N.J.A.C. 7:27-34.10A to apply the best available control technology option for a new off-road non-yard truck, if the following requirements are met. First, the owner or operator must demonstrate it is not reasonably able to comply with the applicable performance standards because no engine certified to the applicable standard and with the appropriate physical or performance characteristics is produced by any manufacturer. Second, the owner or operator must provide documentation from representatives of equipment and/or engine manufacturers supporting the claim of non-availability. Third, the owner or operator must demonstrate that the cargo handling equipment must be used to prevent a disruption in operations. Fourth, the owner or operator must perform and submit an analysis of all available control technologies and demonstrate that the alternative proposed will achieve the maximum possible PM and $NO_x$ reductions for the particular engine or cargo handling equipment.

Proposed N.J.A.C. 7:27-34.5 also includes an option for an owner or operator who has purchased a non-yard truck that complies with proposed N.J.A.C. 7:27-34.5(b), but the non-yard truck is subject to a manufacturer's delay in delivery and no comparable compliant cargo handling equipment is available for lease. In this situation, the owner or operator may lease, until the purchased equipment is delivered, a comparable non-yard truck that is equipped with a CI engine certified to meet the highest available emission standards at 13 CCR 2423 for the rated horsepower and model year. Department approval is not required in this situation, which

is intended to offer owners and operators a temporary solution if, due to manufacturer delivery delay and no fault of the owner or operator, non-compliant equipment must be leased for continuity of operations. If the owner or operator has an in-use non-yard truck that the new equipment is intended to replace by an applicable compliance deadline, explained below, the owner or operator may also request a compliance extension pursuant to proposed N.J.A.C. 7:27-34.11 and 34.11A, explained below. The compliance extension allows the owner or operator to continue to use the existing equipment until the compliant equipment arrives.

*Performance standards for in-use yard trucks, N.J.A.C. 7:27-34.6, and in-use non-yard trucks, N.J.A.C. 7:27-34.7*

The Department proposes performance standards for in-use yard trucks at new N.J.A.C. 7:27-34.6, Performance standards for in-use yard trucks, and in-use non-yard trucks at new N.J.A.C. 7:27-34.7, Performance standards for in-use non-yard trucks. "In-use cargo handling equipment" is defined at proposed N.J.A.C. 7:27-34.3 to mean cargo handling equipment or a diesel-fueled CI engine installed in cargo handling equipment that is purchased, rented, leased, or otherwise brought onto, and in operation at, a port or intermodal rail yard in New Jersey before the first day of the 25th month after the operative date of this rulemaking.

California, in its CHE Regulation, established a compliance schedule from 2007 through 2017, based on fleet size and other factors, to allow for technology development and ensure engine availability. However, Tier 4 final has been required for all new off-road engines since 2015 and the Department is proposing to adopt the standards in the CHE Regulation many years after the CHE Regulation was first adopted. See CARB Amendments ISOR at V-2;

Environmental Protection Agency, Nonroad Compression-Ignition Engines: Exhaust Emission Standards, March 2016, https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100OA05.pdf. Therefore, as provided at N.J.A.C. 7:27-34.6, Table 1, the Department proposes a five-year phased compliance schedule, with the older, more polluting cargo handling equipment required to comply earliest.

As proposed, pre-1998 on-road and Tier 0 off-road engines must comply with proposed N.J.A.C. 7:27-34.6 and 34.7 by the first day of the 25th month after the operative date of this rulemaking. For example, if the rules are operative on December 15, 2022, pre-1988 and Tier 0 engines must comply by January 1, 2025. On-road engines of model year 1998 through 2003 and Tier 1 off-road engines are required to comply by the first day of the 37th month after the operative date of this rulemaking. Using the December 15, 2022 operative date from the example above, cargo handling equipment with these engines must comply by January 1, 2026. Model year 2004 through 2006 on-road engines and Tier 2 off-road engines must comply by the first day of the 49th month after the operative date of this rulemaking. Using the December 15, 2022 operative date from the example above, cargo handling equipment with these engines must comply by January 1, 2027. Additionally, model year 2007 through 2009 on-road engines and Tier 3 and Tier 4i (interim Tier 4) off-road engines must comply by the first day of the 61st month after the operative date of this rulemaking. Using the same December 15, 2022 operative date from the example above, cargo handling equipment with these engines must comply by January 1, 2028.

The CHE Regulation also allowed the use of voluntary diesel emission control strategies (VDECS), or retrofitting, to reduce PM emissions. “Verified diesel emission control strategy” or

"VDECS" is defined at proposed N.J.A.C. 7:27-34.3 to mean an emission control strategy, designed primarily to reduce diesel PM emissions, which has been verified by CARB in accordance with 13 CCR 2700. There are three Levels of VDECS, identified as Level 1, Level 2, and Level 3. At N.J.A.C. 7:27-34.3, the Department proposes to define "level" to mean one of the three categories of CARB-verified diesel emission control strategies, with Level 1 reducing PM emissions by between 25 and 49 percent; Level 2 reducing PM emissions by between 50 and 84 percent; and Level 3 reducing PM emissions by 85 percent or greater or reducing engine emissions to less than or equal to 0.01 grams diesel PM per brake horsepower-hour.

As Tier 4 final engines have been mandated since 2015 for all off-road engines and the highest level VDECS do not achieve the PM and $NO_x$ reductions required of a Tier 4 final engine, the Department proposes to require all in-use yard trucks to be equipped with a Tier 4 final engine, rather than allowing the use of VDECS. For in-use yard trucks, the Department's proposed requirements at N.J.A.C. 7:27-34.6 are the same as those in the CHE Regulation, 13 CCR 2479, with one exception, explained below. The Department proposes to require all in-use yard trucks to be equipped with a certified on-road engine for the model year of the year purchased, a certified Tier 4 final off-road engine, or a certified engine and power system that meets the equivalent emission standards of the first two options. An owner or operator may comply by repowering the equipment with a compliant replacement engine, replacing the equipment, or retiring the equipment.

For in-use non-yard trucks, the Department proposes the same compliance options at N.J.A.C. 7:27-34.7, as those in the CHE Regulation, with some differences, again, because final Tier 4 emission standards have been effective for all off-road engines since 2015. Like

California's CHE Regulation, the Department proposes to require in-use non-yard trucks to be equipped with a certified on-road engine, a certified Tier 4 final off-road engine, or an engine or power system certified to Tier 4 alternate PM off-road emission standards for the rated horsepower and model year plus a Level 3 VDECS. "Alternate PM standard" is defined at proposed N.J.A.C. 7:27-34.3 as one of the Family Emissions Limit (FEL) standards that are currently available to engine manufacturers under 13 CCR 2423 and part of CARB's averaging, trading, and banking program. As CARB explained, engine manufacturers are given "some flexibility during periods where engine emissions are transitioning from one tier to the next." CARB Amendments ISOR at 11-8. The flexibility allows "engine manufacturers to certify specific percentages of engines manufactured, and identified as being part of the next Tier, to emissions levels that do not meet the emissions standards for the specified Tier." *Ibid*. Engines so certified are referred to as "Family Emissions Limit (FEL) engines" and are certified to alternate PM and $NO_x$ emissions limits. *Ibid*. Alternate standards are of limited duration and may be selectively applied to total or partial engine family production volumes. "Engines produced for this flexibility program using FELs greater than the applicable standards must be offset with sufficient ABT [averaging, banking, and trading] credits." 13 CCR 2423(b). The Department, therefore, proposes to define "Family Emissions Limit" or "FEL" as an emission level that is declared by a manufacturer to serve as an emission standard for certification purposes and for California's averaging, banking, and trading program.

The Department includes this option because engine manufacturers have an option to produce a percentage of Tier 4 engines built to alternative and less stringent PM and $NO_x$ emission limits. See CARB Amendments ISOR at ES-8 to 9. As CARB explained when it amended

the CHE Regulation, the expectation was that "most owners/operators electing to comply with the regulation's performance standards would install new engines meeting the primary Tier 4 PM emission standards." CARB Amendments ISOR at III-5. However, CARB discovered that "some, if not many, non-yard truck equipment are equipped with engines certified to the less stringent alternative PM and $NO_x$ standards based on family emission limits (Tier 4 FEL engines)." *Id*. Because the "Tier 4 FEL engine PM standard is at least ten times dirtier [than] the primary Tier 4 PM standard and is similar in stringency to the primary Tier 3 PM standard," and CARB's intent was that engines meet the primary Tier 4 engine emission standards, CARB required a FEL Tier 4 engine to be retrofitted with the highest level VDECS. *Id*.

The Department similarly includes a compliance option specific to Tier 4 FEL engines because manufacturers are allowed to produce these engines. Like California, the Department proposes to require an engine that meets the Tier 4 alternate PM off-road emission standards for the rated horsepower and model year also be equipped with a Level 3 VDECS, which is the highest level VDECS available.

As explained above, California included various compliance options and schedules for different types of in-use non-yard trucks based on the tier engine and any installed VDECS. Ultimately, however, California in the CHE Regulation required all in-use non-yard trucks to eventually be equipped with an engine that meets Tier 4 final off-road emission standards or a lower tier engine that has a Level 3 VDECS installed. Although Tier 4 final engines have been required since 2015, if a compliant non-yard truck is unavailable, the Department proposes to allow an owner or operator to request to apply the best available control technology. This is the same option available for new non-yard trucks at proposed N.J.A.C. 7:27-34.5, explained

above and is to be made in accordance with proposed N.J.A.C. 7:27-34.10 and 34.10A, discussed below.

**Opacity limits, N.J.A.C. 7:27-34.8**

In addition to the performance standards at proposed N.J.A.C. 7:27-34.5, 34.6, and 34.7, the Department proposes to require cargo handling equipment at ports and intermodal rail yards to comply with opacity limits set forth at Table 2. The proposed opacity limits at N.J.A.C. 7:27-34.8, Opacity limits, are the same as those required by California in the CHE Regulation. As CARB explained, "[d]iesel engines have been the workhorse of American industry since the early 20th century." CARB Amendments ISOR, p. II-5. Because diesel engines are durable, these engines also may not be maintained regularly, which will cause the engines to emit at higher than certified emission levels. *Ibid*. As CARB also explained, "in-use engine-out PM emissions from certified diesel engines can be significantly higher than the certification levels if the engine manufacturer's recommended engine maintenance schedules are not followed." *Id*. at II-6. CARB found that in-use PM levels of engines not regularly maintained are much higher than the PM levels due to expected engine deterioration. *Ibid*. In contrast, "PM emission levels and measured opacity levels in well-maintained fleets correlate much better with their certification levels." *Ibid*. Thus, the Department proposes to include the same opacity limits, which are intended to ensure that equipment and engines are operating properly and being properly maintained.

As proposed, the opacity limits will apply on and after the first day of the 25th month after the operative date of this rulemaking, for new cargo handling equipment. For in-use

cargo handling equipment, the opacity limits will apply on and after the applicable compliance deadline at Table 1, or any applicable compliance extensions. Like the CHE Regulation, compliance with the opacity limits will be determined with a smoke meter that meets, and is used in accordance with, the Society of Automotive Engineers "Surface Vehicle Recommended Practice, Snap Acceleration Smoke Test Procedure for Heavy-Duty Powered Vehicles" (SAE J1667, February 1996). Compliance with the opacity limits will be determined during periodic inspections by the Department. The term “opacity” is defined at proposed N.J.A.C. 7:27-34.3, consistent with the definition at 13 CCR 2479.

As provided at N.J.A.C. 7:27-34.8, an owner or operator must take out of service and repair any cargo handling equipment that exceeds the opacity limit at Table 2, and cannot return the equipment to service until it complies with the opacity limits. The owner or operator must maintain all service and repair records in accordance with N.J.A.C. 7:27-34.15, Recordkeeping requirements.

Finally, N.J.A.C. 7:27-34.8 provides that cargo handling equipment that is a registered motor vehicle is subject to the applicable tests, procedures, and standards set forth at N.J.A.C. 7:27-14, 7:27B-4, and 13:20-26, which govern emissions from motor vehicles, rather than those at Table 2. This provision is included to make clear that the motor vehicle rules (both the Department’s and the Motor Vehicle Commission’s) apply to any cargo handling equipment registered as a motor vehicle.

**Replacement engines for in-use cargo handling equipment, N.J.A.C. 7:27-34.9**

An owner or operator may comply with the in-use requirements at N.J.A.C. 7:27-34.6

and 34.7 by repowering the equipment with a compliant replacement engine. If the in-use cargo handling equipment is repowered with a replacement CI engine, as provided at proposed N.J.A.C. 7:27-34.9, Replacement engines for in-use cargo handling equipment, the equipment is considered new and must comply with N.J.A.C. 7:27-34.5. The exception is if the engine was replaced by the manufacturer due to failure during its warranty period. "Warranty period" means the period of time and/or mileage that a vehicle, engine, or part is covered by the engine manufacturer's new engine warranty provisions. As CARB explained, this provision is included to protect owners from losing the value of their new engine warranties. Thus, as proposed, an owner or operator may replace a Tier 3 engine still under warranty with another Tier 3 engine, because the equipment is still considered "in-use." However, this would apply only until the compliance deadline for in-use Tier 3 engines pursuant to proposed Table 1 at N.J.A.C. 7:27-34.6 and 34.7.

**Alternate compliance option – fleet averaging plan, N.J.A.C. 7:27-34.10 and 34.10B**

As explained above, an owner or operator may request approval to apply the best available control technology for a non-yard truck in accordance with N.J.A.C. 7:27-34.10A, Alternate compliance option – non-yard truck, if unable to comply with N.J.A.C. 7:27-34.5 or 34.7. Pursuant to proposed N.J.A.C. 7:27-34.10B, Alternate compliance option – fleet averaging plan, an owner or operator may request to implement a fleet averaging plan in lieu of the requirements for new and in-use cargo handling equipment (both yard trucks and non-yard trucks). This option is similar to the alternate compliance plan option that is included in California's CHE Regulation. As proposed, a fleet averaging plan may not result in greater

emissions, expressed in pounds, of diesel PM and $NO_x$ from all cargo handling equipment in the fleet combined, during each calendar year, relative to the combined emissions that would have occurred pursuant to N.J.A.C. 7:27-34.5 through 34.7. "Fleet" is proposed to be defined at N.J.A.C. 7:27-34.3 to mean the total number of pieces of cargo handling equipment owned, rented, or leased by an owner or operator, which is located at a specific port or intermodal rail yard.

As provided at N.J.A.C. 7:27-34.10 and 10B, an owner or operator must submit a request to implement a fleet averaging plan at least 90 days before the applicable compliance deadline. An applicant may include two or more pieces of cargo handling equipment in its plan, as long as the applicant owns or operates the equipment under its direct control at the same port terminal or intermodal rail yard. No cargo handling equipment shall be included in more than one plan. The plan may include only the emission control strategies listed at N.J.A.C. 7:27-34.10B: exhaust treatment control, engine repower, equipment replacement, hybrid technology, or electric equipment.

To ensure that the plan will not result in greater emissions than otherwise would result from complying with the new and in-use cargo handling equipment performance standards, the application must include information, including documentation, calculations, and emissions test data, that establishes the PM and $NO_x$ reductions (in pounds) from the cargo handling equipment combined will be equivalent to or greater than the combined emission reductions that would have been achieved upon compliance with N.J.A.C. 7:27-34.5, 34.6, and 34.7, as applicable. Emission reduction calculations can include only PM and $NO_x$ emissions from the equipment to which the plan applies. The calculations cannot include reductions that are

otherwise required by any local, State, or Federal rule, regulation, or statute, or any agreement or final administrative or court order to resolve an enforcement action, or agreed to as part of a local, State, or Federal grant, incentive, or voucher program. This requirement is included to ensure that the emission reductions are not otherwise required by law or obtained with government funds. The application must also include proposed recordkeeping, reporting, monitoring, and testing procedures that the applicant will use to demonstrate continued compliance with the plan.

An application for approval of a fleet averaging plan is subject to public comment prior to Department action. The public notice procedures are provided at N.J.A.C. 7:27-34.10B(c) and are consistent with the notice procedures at N.J.A.C. 7:27-22, Operating Permits. The Department will provide public notice of the opportunity for public comment on each proposed plan. The notice will identify the site of the equipment, the equipment involved and proposed plan, Department contact information, announce the opportunity for public comment and describe the public comment procedures, specify the length of the public comment period, and include the time and location of any public hearing to be held on the plan. If no public hearing is scheduled, the notice shall include procedures for requesting a hearing. The Department will post the notice and draft plan on the Department's website, www.stopthesoot.org, for the duration of the public comment period.

If a hearing is not scheduled, any person may request, in writing, no later than the published date of the close of the comment period, that the Department hold a hearing. The request shall include a statement of issues to be raised at the hearing. The issues shall be relevant to the draft fleet averaging plan under review. If a public hearing is held, the

Department shall provide public notice of the hearing at least 15 days before the hearing date. At any public hearing on a plan, the Department may limit the time allowed for oral statements and request a person offering testimony to also submit the statement in writing.

**Compliance extensions, N.J.A.C. 7:27-34.11, 34.11A, 34.11B, and 34.11C**

California, in its CHE Regulation, included compliance extensions based on manufacturer delay in delivery and low use of the equipment. At proposed N.J.A.C. 7:27-34.11, 34.11A, 34.11B, and 34.11C, the Department similarly proposes to allow an owner or operator to request and receive an extension for manufacturer delay in delivery and low-use equipment. The Department additionally proposes to include a compliance extension for zero-emission equipment.

California also included several compliance extensions based on unavailability of VDECS or equipment that is planned to be retired. At proposed N.J.A.C. 7:27-34.7, the Department proposes to include a Level 3 VDECS requirement if a FEL Tier 4 engine is used. Because this is the only VDECS option, the Department does not expect compliance extensions based on VDECS unavailability will be needed and, therefore, does not propose to include that option as part of N.J.A.C. 7:27-34. The Department also does not propose to allow an extension based on retirement of equipment. California allowed this option as part of its fleet phase-in compliance schedule, which is not applicable to proposed N.J.A.C. 7:27-34.

As provided at N.J.A.C. 7:27-34.11, an owner or operator seeking a compliance extension must submit the request to the Department at least 60 days before the applicable deadline. If the Department approves the request, the owner or operator is deemed to be in

compliance for the applicable period, provided the owner or operator complies with all of the conditions of the Department's approval. If the Department finds that the owner or operator has not complied with any of the conditions of approval, the equipment will be in noncompliance from the date that compliance would have otherwise been required pursuant to N.J.A.C. 7:27-34.6 and 34.7. Additionally, operation of the cargo handling equipment must cease until the owner or operator brings the equipment into compliance. Proposed N.J.A.C. 7:27-34.11 contains the general requirements applicable to all applications for a compliance extension. These include using the forms available on www.stopthesoot.org, the general contents of the application, the timing of the Department's review, and application completeness.

The following are the specific proposed compliance extensions.

*Manufacturer delay, N.J.A.C. 7:27-34.11A*

An owner or operator may request an extension if new cargo handling equipment or a new engine was purchased to comply with the performance standards but has not been received due to manufacturer delays. As proposed at N.J.A.C. 7:27-34.11A, Compliance extension – manufacturer delay, the Department will grant the extension if the Department determines that the equipment was purchased, or a contractual agreement for purchase was entered into, at least six months before the required compliance deadline. An application must identify the equipment type and intended use, including engine horsepower. An application must also include documentation, such as a purchase order or letter that demonstrates that at least six months before the compliance date, the owner or operator entered into a contract to purchase equipment and/or engine that meets the requirements at N.J.A.C. 7:27-34.5.

Documentation from equipment and/or engine manufacturer representatives supporting the non-availability claim, including the anticipated date of availability and date of delivery, is also required.

*Low-use, N.J.A.C. 7:27-34.11B*

The Department proposes to include a low-use compliance extension option at N.J.A.C. 7:27-34.11B, Compliance extension – low use, consistent with the CHE Regulation. CARB explained this extension is to "allow limited use of back-up equipment that is kept for use when another piece of equipment stops operating" or for infrequently used specialty equipment that is costly to replace. CARB Amendments ISOR at p. III-9 to 10. This type of extension is available for a maximum of two years for cargo handling equipment operated less than 200 hours annually. To be considered, the owner or operator must demonstrate, to the Department, compliance with N.J.A.C. 7:27-34.6, 34.7, and 34.8 for all other cargo handling equipment in its fleet pursuant to the compliance schedule at Table 1. The owner or operator must identify the engine manufacturer, serial number, model year, and engine families and series of each engine for which an extension is requested. A non-resettable hour meter, which records the hours of use of a particular engine and is incapable of being adjusted, must also be installed on each engine for which an extension is requested. The application must also include documentation that the engine included in the application was operated less than 200 hours in the preceding calendar year. Because the hour meter may not have been on the engine the prior year, the owner or operator may use fuel records to demonstrate the previous year's hours.

The Department may deny an extension for more than two engines in a single fleet or for more than two percent of a fleet, whichever is greater. In deciding whether to limit the

number of engines granted a low-use extension, the Department will consider the impact on public health based on the number of pieces of equipment granted a low-use extension, the hours of operation of the equipment, estimated engine emissions levels, and proximity of the equipment to off-site residences. If the Department approves the request, the owner or operator must annually report the annual hours of operation for each engine granted a compliance extension for the duration of the extension.

*Zero-emission cargo handling equipment, N.J.A.C. 7:27-34.11C*

The Department proposes to allow up to a two-year compliance extension for an owner or operator who wishes to replace in-use cargo handling equipment with zero-emission equipment. "Zero-emission" is defined at N.J.A.C. 7:27-34.3 to mean an engine or equipment that does not produce exhaust emissions of any criteria or precursor pollutant or greenhouse gas, excluding emissions from air conditioning systems, under any possible operational modes or conditions. The Department proposes this extension option to encourage owners and operators to purchase zero-emission cargo handling equipment.

For the Department to grant the request, the owner or operator must demonstrate that a zero-emission option is available for the make, model, and horsepower of the cargo handling equipment being replaced and provide supporting documentation from an equipment manufacturer and/or dealer. The owner or operator must also show that the zero-emission cargo handling equipment will be purchased within two years of the applicable compliance deadline. An owner or operator may demonstrate this with a purchase order. If a purchase order is not feasible at the time of request, the owner or operator may submit other

documentation that includes a certification as provided at N.J.A.C. 7:27-1.39 and shows the owner or operator's intent to purchase within two years of the applicable deadline. If the owner or operator does not follow through, the equipment will be in noncompliance from the date that compliance would have been required pursuant to N.J.A.C. 7:27-34.6 and 34.7. Operation of the cargo handling equipment that the zero-emission equipment was intended to replace must cease until the owner or operator brings the equipment into compliance.

Finally, the owner or operator must submit documentation or a workplan showing that necessary charging or fueling infrastructure will be in place within two years of the applicable compliance deadline. This demonstration is necessary to ensure that the zero-emission equipment can be operated at the port or intermodal rail yard upon delivery.

**Reporting, N.J.A.C. 7:27-34.14**

The CHE Regulation includes cargo handling equipment reporting requirements. The Department similarly proposes N.J.A.C. 7:27-34.14, Reporting requirements. The purpose of the annual reporting requirements is to gather information about the cargo handling equipment operated at ports and intermodal rail yards in the State and to ensure compliance with proposed N.J.A.C. 7:27-34. Proposed N.J.A.C. 7:27-34.14 contains requirements for reporting methods. The Department intends to collect data electronically through a web portal to be established at www.stopthesoot.org. The portal will provide an electronic form of questions with data fields to be completed by each reporting entity. As provided in the general provisions at N.J.A.C. 7:27-34.4, the information submitted will be public, though the Department's rules allow for a claim of confidentiality to be made pursuant to the procedures set forth at N.J.A.C. 7:27-1.

N.J.A.C. 7:27-34.14 requires an owner or operator to submit the initial report on or before August 1, 2023, reflecting its fleet as of January 1, 2023. The initial report is to provide general company and port or intermodal rail yard information and the total population of cargo handling equipment by engine model year. The owner or operator is also to provide information for each piece of cargo handling equipment, including equipment make, model, and model year; engine make, model, and model year; year of manufacture of equipment and engine, or approximate age if unable to determine; engine family and serial number; and rated brake horsepower. If the cargo handling equipment is a registered motor vehicle, the owner or operator must also provide the vehicle registration number or license plate. The report is also to include hours of use, fuel type, and annual fuel usage in the preceding calendar year, 2022. If the equipment is seasonal, the owner or operator is to provide the actual months operated in 2022.

Each subsequent annual report shall be submitted on or before August 1 reflecting the cargo handling equipment in the fleet as of January 1 of that calendar year. As an example, the report due on or before August 1, 2024, would reflect the cargo handling equipment in the fleet on January 1, 2024. The report is also to include hours of use, fuel type, and annual fuel usage in the preceding calendar year, 2023. An owner or operator is to indicate any changes to information in each subsequent report, including information for any cargo handling equipment added to or removed from the fleet during the previous calendar year. For any cargo handling equipment removed from the fleet, the owner or operator is to provide information about the disposition of the equipment. The owner or operator is also to describe the method for reaching compliance and date of compliance for any in-use cargo handling equipment required

to meet the performance standards at proposed N.J.A.C. 7:27-34.6 and 34.7.

For cargo handling equipment with an approved alternate compliance option pursuant to N.J.A.C. 7:27-34.10, 34.10A, and 34.10B, or equipment to which a compliance extension at N.J.A.C. 7:27-34.11, 34.11A, 34.11B, and 34.11C applies, additional information is to be included. If applicable, the report is to include the retirement date or engine installation date. A compliance status update would be required for equipment for which an extension of a compliance deadline was granted. "Retirement" is defined at proposed N.J.A.C. 7:27-34.3 as an engine or cargo handling equipment that will be taken out of service, will not be operated at any port or intermodal rail yard in New Jersey, and will not be replaced with a new engine or cargo handling equipment.

**Recordkeeping, N.J.A.C. 7:27-34.15**

The Department proposes recordkeeping requirements that will provide a useful enforcement and audit tool to ensure compliance with proposed N.J.A.C. 7:27-34. Specifically, proposed N.J.A.C. 7:27-34.15, Recordkeeping requirements, requires an owner or operator to maintain maintenance records and any documents required to verify compliance with the subchapter. The records are to be maintained at a single location at the port or intermodal rail yard where the equipment is operated or normally resides. Each owner or operator is required to maintain these records for each piece of cargo handling equipment until it is sold outside the State or no longer used at a port or intermodal rail yard in the State. If ownership of a piece of cargo handling equipment is transferred, the seller shall convey the records to the buyer. At the same time, the seller, and any person who operates a place of business in the State, will be

required to maintain records of all sales, leases, rentals, imports, purchases, acquisitions, receipt of, or other transfers of cargo handling equipment for a period of no less than five years after the date of the transaction. An owner or operator subject to proposed N.J.A.C. 7:27-34, must make those records available for inspection or provide copies to the Department, upon request. The Department proposes to make the recordkeeping requirements applicable beginning January 1, 2023, anticipating that the rules will be operative by then. See proposed N.J.A.C. 7:27-34.15.

**Prohibitions, N.J.A.C. 7:27-34.16**

At proposed N.J.A.C. 7:27-34.16, Prohibitions, the Department proposes to prohibit any person from modifying or altering any element of design of any cargo handling equipment or design of the original manufacturer, unless it is done in accordance with a CARB Executive Order or Federal regulations at 40 CFR Part 1068, Subparts C and D. No person may cause, suffer, allow, or permit the disconnection, detachment, deactivation, or any other alteration or modification from the design of the original equipment manufacturer or an element of design installed on any cargo handling equipment with a certified configuration or cargo handling equipment engine with a certified configuration, except temporarily for the purpose of diagnosis, maintenance, repair, or replacement. Also prohibited is the sale, lease, or offer for sale or lease, of any modified or altered cargo handling equipment or engine with a certified configuration or any device or component intended for use with any cargo handling equipment or engine with a certified configuration that is not designed to duplicate the original design element installed by the original equipment manufacturer. These anti-tampering provisions apply to any person subject to N.J.A.C. 7:27-34 and are necessary to prevent and enforce

against such violations, which cause excess emissions.

Lastly, the Department proposes to prohibit the operation of cargo handling equipment at a port or intermodal rail yard in the State if the equipment emits visible smoke of any color in the exhaust emissions for more than three consecutive seconds when the engine is at normal operating temperature. This visible smoke prohibition is modeled on existing N.J.A.C. 7:27-14.4, General public highway standards, which pertains to all diesel-powered motor vehicles.

**Civil Administrative Penalties for Violations of N.J.A.C. 7:27-34, N.J.A.C. 7:27A-3.10**

At N.J.A.C. 7:27A-3.10, the Department proposes new civil administrative penalties for violations of proposed new N.J.A.C. 7:27-34. Existing N.J.A.C. 7:27A-3.5 authorizes the Department to impose a civil administrative penalty for a violation of any provision at N.J.A.C. 7:27, the Air Pollution Control Act (Act), or any rule promulgated, or administrative order, operating certificate, registration requirement, or permit issued pursuant to the Act, even if the violation is not otherwise included at N.J.A.C. 7:27A. The Department proposes to codify the penalties for violations of N.J.A.C. 7:27-34 at N.J.A.C. 7:27A-3.10(m)34.

The proposed penalties at N.J.A.C. 7:27A-3.10(m)34 are consistent with existing penalties for similar violations of other Department rules. For example, the Department determined that the failure to make records available pursuant to new N.J.A.C. 7:27-34.15 is similar to the requirement to submit at N.J.A.C. 7:27-29.11. Therefore, the proposed penalties are comparable.

Under the Grace Period Law, N.J.S.A. 13:1D-125 to 133, a person responsible for a minor violation is afforded a period of time by the Department to correct the violation in order to

avoid being subject to a penalty. Based upon the criteria set forth at N.J.S.A. 13:1D-129, the Department has determined which of the proposed penalties at N.J.A.C. 7:27A-3.10(m) are minor, and, thus, subject to a grace period, and which are non-minor, and, thus, not subject to a grace period. Generally, the Department has determined that those violations that do not result in excess emissions (and, therefore, pose minimal risk to the public health, safety, and the environment) and do not materially and substantially undermine or impair the goals of the regulatory program are classified as "minor." Under the existing rules, a minor violation can be ineligible for a grace period if the conditions at N.J.A.C. 7:27A-3.10(s) are not met.

## Social Impact

The Department anticipates that the proposed rulemaking will have a positive social impact in New Jersey. As explained in the Summary and Environmental Impact statements, the Department expects the proposed rulemaking will reduce emissions of PM2.5 and $NO_x$, a precursor of ozone and secondary PM2.5, which cause adverse health effects as discussed below. Therefore, by reducing emissions of these harmful air pollutants, the Department expects corresponding health benefits, resulting in a positive social impact, particularly in local communities disproportionately impacted by emissions from cargo handling equipment operating at nearby ports and intermodal rail yards.

**Adverse health impacts of ground-level ozone**

Increased concentrations of ground level ozone have been linked to a number of adverse health impacts, including, but not limited to, eye irritation, aggravated asthma and other respiratory distress, and premature death. See 2020 Report on Climate Change at 63-64.

Ozone exposure can cause irritation of the lungs, which can make the lungs more vulnerable to diseases, such as pneumonia and bronchitis, increase incidents of asthma and of susceptibility to respiratory infections, reduce lung function, reduce an individual's ability to exercise, and aggravate chronic lung diseases. Increased ozone concentrations severely affect the quality of life for susceptible populations – small children, the elderly, and asthmatics – and present health risks for the public in general. Exposure to ozone for several hours at relatively low concentrations significantly reduces lung function and induces respiratory inflammation in normal, healthy people during exercise. This decrease in lung function is generally accompanied by symptoms, such as chest pain, coughing, sneezing, and pulmonary congestion. Research strongly suggests that in addition to exacerbating existing asthma, ozone also causes asthma in children. Long-term exposure may lead to scarring of lung tissue and lowered lung efficiency. Repeated exposure may cause permanent lung damage. When ozone reaches unhealthy levels, children, people who are active outdoors, and people with respiratory disease are most at risk. See USEPA 2016 RIA at 6-2 to 6-6.

Additionally, there is some evidence that the health impacts of increased ozone may be elevated when combined with other climate-related impacts, such as the higher temperatures that occur during heat waves. See 2020 Report on Climate Change at 66. This is particularly significant for New Jersey's urban areas where high temperatures are often accompanied by high levels of other local air pollutants. See *ibid*.

**Adverse health impacts of $NO_x$ and PM2.5**

$NO_x$ as an air pollutant has direct adverse impacts on public health. It also contributes to the formation of PM2.5, which causes additional public health risks. The EPA has established a

NAAQS for $NO_x$, as measured by nitrogen dioxide ($NO_2$). See 83 FR 17,226 (April 18, 2018). Long-term exposure to low concentrations of $NO_2$ causes adverse respiratory effects, including lung irritation and increased pulmonary inflammation in children with asthma. See USEPA 2016 RIA at 6-6 to 6-7. The Department measures $NO_2$ levels at 10 locations throughout the State: Bayonne, Camden Spruce Street, Chester, Columbia, Elizabeth Lab, Fort Lee Near Road, Jersey City, Millville, Newark Firehouse, and Rutgers University's Cook College campus. The design value for $NO_2$, which determines whether or not there is a violation of the NAAQS, is the three-year average of the 98th percentile of the one-hour daily maximum concentrations. Design values at the urban monitoring sites are consistently higher than the rural sites. The Department, therefore, expects that the proposed rulemaking will particularly benefit urban areas, while reducing $NO_x$ emissions throughout the State. See 2019 NJ Air Quality Report. https://www.nj.gov/dep/airmon/pdf/2019-nj-aq-report.pdf.

PM2.5 has significant health impacts due to its ability to penetrate deeply into the lungs. As explained in the Environmental Impact statement, PM2.5 is both formed in the atmosphere and discharged directly from a combustion source, such as a diesel engine. Diesel emissions contain "numerous organic compounds, including over 40 known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene" referred to as air toxics. See CARB, Overview: Diesel Exhaust & Health, https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health. "Diesel exhaust is a major source of fine particulate pollution as well, and numerous studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visit[s], asthma attacks and premature deaths." CARB Initial ISOR

at ES-1 (citing California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (October 2000), https://ww2.arb.ca.gov/sites/default/files/classic//diesel/documents/rrpfinal.pdf).

The effects of $NO_x$ and PM2.5 on public health have been widely and extensively studied by the EPA and others. The benefits of reducing these air pollutants include reduced incidence of premature mortality and morbidity from exposure to both PM2.5 and ground level ozone, which they contribute to the formation of. See U.S. EPA, Integrated Science Assessment for Oxides of Nitrogen – Health Criteria, EPA/600/R-08/071, July 2008, http://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=475020; and U.S. EPA, Integrated Science Assessment (ISA) for Particulate Matter, EPA/600/R-08/139F, December 2009, http://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=494959. Other health impacts that have been recognized include reduced incidence of morbidity from exposure to $NO_x$. See National Research Council. 2002. Estimating the Public Health Benefits of Proposed Air Pollution Regulations. Washington, DC: The National Academies Press. https://doi.org/10.17226/10511; Driscoll, C.T, Buonocore, J., Reid, S., Fakhraei, H, and Lambert, K.F. 2014. Co-benefits of Carbon Standards Part 1: Air Pollution Changes under Different 111d Options for Existing Power Plants. Syracuse University, Syracuse, NY and Harvard University, Cambridge, MA. A report of the Science Policy Exchange. 34 pp.

**Economic Impact**

The Department anticipates that the proposed rulemaking will result in increased costs to owners and operators of cargo handling equipment at ports and intermodal rail yards in the

State. The Department also anticipates that the proposed rulemaking will result in health benefits, particularly to residents living and working at and near these areas. The Department estimated the monetized health benefits that it expects will result from the proposed rulemaking and summarized estimated compliance costs below. Throughout this discussion, values are expressed in 2018 dollars to maintain consistency with other pending and anticipated Air Pollution Control rulemakings focused on combatting the effects of climate change, to meet the Global Warming Response Act goal of reducing greenhouse gas emissions 80 percent below 2006 baseline levels by 2050.

**Monetized health benefits**

As explained above, the Department based its estimates of the emissions benefits it anticipates from the proposed rulemaking on the PANY/NJ's cargo handling equipment inventory. The Department estimates potential emission reductions from cargo handling equipment at PANY/NJ terminals to be 82 tons of NOx and 6.4 tons of PM2.5 in 2028 and cumulative emissions reductions of 500 tons of NOX, and 38 tons of PM2.5 from 2024 through 2035. To roughly estimate the avoided human health impacts and monetized benefits related to these reductions in $NO_x$ as a PM2.5 precursor and directly emitted PM2.5, the Department relied on the EPA's Technical Support Document. See USEPA, Technical Support Document, Estimating the Benefit per Ton of Reducing PM2.5 Precursors from 17 Sectors, February 2018 (EPA 2018 TSD), https://www.epa.gov/sites/production/files/2018-02/documents/sourceapportionmentbpttsd_2018.pdf. In the EPA 2018 TSD, the EPA provided nationwide economic values of adverse health impacts attributable to PM2.5 air pollution from 17 sectors, including nonroad mobile sources. The process the EPA used to generate its

estimates is described on pages 4 and 5 of the EPA 2018 TSD.

To estimate the potential monetized benefits due to the proposed rulemaking, the Department used the total dollar value of avoided mortality and morbidity per ton of directly emitted PM2.5 and the PM2.5 precursor $NO_x$ provided for nonroad mobile sources at Tables 7 and 8. EPA 2018 TSD at 16 and 17. The morbidity health endpoints included in the EPA's quantification are respiratory emergency room visits, acute bronchitis, lower and upper respiratory symptoms, minor restricted activity days, work loss days, asthma exacerbation, cardiovascular and respiratory hospital admissions, and non-fatal heart attacks. *Id*. at Appendix A, p 61, Table 62. The EPA provided estimates using two different methodologies for linking PM2.5 to negative health outcomes, and using a three percent and seven percent discount rate. Discounting renders benefits and costs that occur in different time periods comparable by expressing their values in present terms. See USEPA, Guidelines for Preparing Economic Analyses, December 2010, https://www.epa.gov/sites/production/files/2017-08/documents/ee-0568-50.pdf. The EPA's estimates ascribed a range of monetary values associated with avoided mortality and morbidity per ton of directly emitted PM2.5 and $NO_x$ as a PM2.5 precursor.

Using the EPA's estimates, the Department adjusted the numbers to 2018 dollars, which resulted in monetary values for avoided mortality and morbidity per ton of directly emitted PM2.5 ranging from $297,000 to $742,000 and $7,000 to $18,000 for $NO_x$. By multiplying each incident by the range of monetary values used by the EPA (and updated to 2018 dollars by the Department), the Department estimates monetized benefits to be between $2 million and $6 million in 2028 and between $15 million and $37 million in cumulative monetized benefits from

2024 through 2035. (The values presented here have been rounded, but all calculations used unrounded values.)

The EPA's 2018 TSD noted other health impacts that the EPA did not quantify or monetize. These morbidity incidents include chronic bronchitis (people aged over 26), emergency room visits for cardiovascular effects, strokes and cerebrovascular disease (those aged 50-79), other cardiovascular effects, other respiratory effects, such as pulmonary function, non-emergency room visits, and non-bronchitis chronic diseases, reproductive and developmental effects, and cancer, mutagenicity, and genotoxicity effects. Like the EPA, the Department has not monetized these other avoided costs. The Department's calculation of estimated emissions benefits is also limited to the PANY/NJ inventory because it is a detailed, publicly available analysis that is issued every two years. Therefore, the Department likely underestimated the monetized benefits.

**Summary of Costs**

The proposed rulemaking will affect owners and operators at ports and Class I railroad-owned/operated intermodal rail yards, as they will be required to make capital investments in equipment upgrades. Ports that would be subject to the proposed rulemaking include New Jersey facilities within the Port of New York and New Jersey (for example, terminals at Elizabeth, Newark, Jersey City, and Bayonne), as well as other non-PANY/NJ terminals that handle cargo. Other New Jersey cargo ports include those owned and/or operated by South Jersey Port Corporation, such as the Balzano and Broadway terminals in Camden, and terminals in Salem and Paulsboro. The Port of Paulsboro also includes privately owned facilities. In

addition, there are ports that specifically handle liquid cargo, including the Repauno Port & Rail Terminal and the Port of Perth Amboy. There are also two Class I railroads that own and operate cargo handling equipment at seven intermodal rail yards in the State. The Department expects the costs of compliance may be passed on to customers, such as shipping companies, or absorbed by the regulated entity.

The Department anticipates that at least some, if not all, of the owners and operators at these ports and intermodal rail yards will incur costs to upgrade their in-use equipment to comply with the proposed rulemaking. These costs are explained below. The Department anticipates minimal additional costs of compliance for new cargo handling equipment since, as explained in the Summary, all CI engines have had to be certified to Tier 4 final off-road engine standards as of 2015 and, thus, the availability of pre-Tier 4 final engines is likely limited.

Based on information provided in CARB's draft technology assessment for mobile cargo handling equipment and in the Clean Air Action Plan 2017 for the San Pedro Bay Ports, the Department estimated costs of Tier 4 final cargo handling equipment by type are presented in the table below. See Draft Technology Assessment: Mobile Cargo Handling Equipment (November 2015) at II-6 to -7, https://ww2.arb.ca.gov/sites/default/files/classic/msprog/tech/techreport/che_tech_report.pdf, and San Pedro Bay Ports, Clean Air Action Plan 2017, Preliminary Cost Estimates for Select Clean Air Action Plan Strategies (November 2017) at p.8, prepared by EnSafe, https://cleanairactionplan.org/documents/preliminary-cost-estimates-select-caap-strategies.pdf/.

| Tier 4 final cargo handling equipment cost estimates | |
|---|---|
| Equipment | Estimated cost |
| Yard truck | $125,000 |
| Top handler | $520,000 to $600,000 |
| Forklift | $40,000 to $250,000 |
| RTG crane | $1,300,000 |
| Side handler | $315,000 to $600,000 |
| Straddle carrier | $1,100,000 |
| Dozer | $110,000 (small, up to 80 hp)<br>$400,000 (medium, up to 200 hp)<br>$1,400,000 (large, up to 600 hp) |
| Excavator | $205,000 (small, up to 90 hp)<br>$270,000 (medium, up to 190 hp)<br>$750,000 (large, up to 470 hp) |
| Loader | $130,000 (small wheel, up to 100 hp)<br>$180,000 (small, up to 140 hp)<br>$450,000 (medium, up to 300 hp)<br>$1,550,000 (large, up to 700 hp) |

The Department expects that owners and operators at ports and intermodal rail yards have various types of equipment depending on what kind of cargo is handled (for example, bulk

or containerized). The Department also expects the number and age of equipment in each owner or operator's inventory is varied, depending on the throughput or volume of cargo handled and business operations and decisions. Owners and operators may choose to comply by replacing or retiring equipment or engines. If older equipment nearing the end of its useful life is replaced with newer, compliant equipment, the cost of compliance will be minimal. Owners and operators may also choose to employ alternative technologies to transition to cleaner equipment, such as hybrid or zero-emission. Other ports may have their own fleet modernization programs to incentivize the replacement of older equipment. Given the variety of factors, the Department is unable to estimate the average cost of compliance for a fleet or the cost of compliance for each individual owner and operator who will be subject to N.J.A.C. 7:27-34.

In addition to the costs that may be necessary to comply with the proposed performance standards, owners and operators will bear a cost to comply with the reporting and recordkeeping requirements at proposed N.J.A.C. 7:27-34. The proposed rulemaking will also impose recordkeeping requirements on those who sell, rent, or lease cargo handling equipment for operation at ports and intermodal rail yards. CARB estimated that it would cost approximately $640.00 per year (in 2018 dollars) for an owner or operator to comply with the reporting requirements. See CARB Initial ISOR at VII-6. The Department anticipates similar compliance costs. The Department expects that the recordkeeping provisions at proposed new N.J.A.C. 7:27-34 will result in minimal costs to businesses subject to the new rules. The businesses likely already maintain the required records as part of their business practice.

Finally, the Department anticipates an initial cost to the Department of $200,000 and

0.5 full time employee to establish the fleet inventory reporting portal. Additionally, the Department anticipates an additional two to three full-time employees will be needed to review the inventory reports annually, assist with education, monitor compliance, and analyze reported data.

**Environmental Impact**

The Department anticipates that the proposed new rules for cargo handling equipment at ports and intermodal rail yards will have a positive environmental impact due to the expected reductions in emissions of both $NO_x$, which contributes to the formation of ground-level ozone and secondary PM2.5, and direct PM2.5 (of which black carbon is a component).

**Climate Change and Air Quality**

The 2020 Report on Climate Change is the Department's first effort to compile scientific material in a comprehensive report detailing both the effects and the impacts of climate change. While the report examines climate change at the global and regional level, its purpose is to explain the current and anticipated effects and impacts in New Jersey. See *id*. at 3. One of the report's findings is that New Jersey is uniquely vulnerable to climate change due to multiple factors, including its coastal location, population density, and geography. See *id*., Executive Summary.

Climate scientists worldwide agree that the substantial increase in heat-trapping greenhouse gases in the earth's atmosphere from fossil fuel production and combustion, as well as land degradation, is the principal cause of climate change. See *id*., p. vi. As the 2020 Report on Climate Change explains, the increasing $CO_2$ concentration was first observed over 60

years ago. *Id*. at 15. "Since then other human-sourced greenhouse gases have been recognized as contributing to climate change, such as methane ($CH_4$), nitrous oxide ($N_2O$), ozone ($O_3$), many halogenated gases (especially chlorofluorocarbons [CFC-11 and CFC-12]), among others." *Id*. at 16. Although $CO_2$ is the most abundant greenhouse gas, scientists have recently begun to study the role of other short-lived climate pollutants/forcers, such as hydrofluorocarbons, methane, and black carbon in climate change. See *id*. at 25-26. Climate forcers are also referred to as short-lived climate pollutants, which "have a greater impact on climate change in the near term, compared to longer-lived greenhouse gases like carbon dioxide." 2050 Report at 175. It is now understood within the scientific community that while these pollutants and forcers tend to have shorter atmospheric lives, they also have much higher warming potentials, making them significant contributors to climate change. See 2020 Report on Climate Change at 25-26.

Climate change, resulting from the increase in greenhouse gases and other highly warming climate pollutants and forcers, affects temperature, precipitation, sea-level rise, and ocean acidification. See *id*. at 28. And "[a]s temperature, precipitation, sea-level rise, and ocean acidification increase, so will the impacts to New Jersey's air, water, habitats, and wildlife." *Id*. at vii. Increased air pollution will lead to adverse health impacts, such as increased respiratory and cardiovascular health problems and more premature deaths. *Id*. Climate induced increases in air pollution will also further degrade the environment, reducing visibility and damaging crops and forests. *Ibid*.

Of particular relevance is the interaction between climate change and air pollution, specifically, ground-level ozone and what is referred to as the "ozone-climate penalty," explained below. In the stratosphere, ozone provides protection from the sun's harmful

ultraviolet rays. Ozone is harmful, however, when created in the earth's lower atmosphere, or troposphere, by the interaction of "precursor" pollutant gases such as $NO_x$ and volatile organic compounds (VOCs) with heat and sunlight.

**Ground-level ozone**

As discussed more fully in the Social Impact, ground-level ozone (also referred to herein as ozone) harms our health. In addition, within the environment, "[t]he welfare effects of ozone can be observed across a variety of scales, i.e., subcellular, cellular, leaf, whole plant, population and ecosystem." See USEPA, Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2, Regulatory Impact Analysis, August 2016 (USEPA 2016 RIA), pp. 6-25, https://nepis.epa.gov/Exe/ZyPDF.cgi/P100P7NS.PDF?Dockey=P100P7NS.PDF. Plant-level effects, when widespread, can cause "broad changes in ecosystems, such as productivity, carbon storage, water cycling, nutrient cycling, and community composition." *Ibid*. Ozone damage to sensitive species includes visible injury to leaves and impaired photosynthesis, which is the process by which the plant makes carbohydrates, its source of energy and food. *Ibid*. By interfering with the ability of plants to produce and store food, ozone can lead to reduced crop and forest yields, including timber production, and overall plant productivity and growth. *Ibid*. Ground-level ozone makes plants more susceptible to harsh weather, disease, insects, and other pollutants. It also damages the foliage of trees and other plants, sometimes marring the landscape of cities, national parks and forests, and recreation areas. *Id*. at 6-25.

**Ozone-climate penalty**

As the 2020 Report on Climate Change explains, "[t]he atmospheric conditions that

generate high ozone levels are high temperatures, plenty of sunshine, and stagnant air masses, and [these conditions] often result in elevated levels of particulate matter and/or other colored gases that may appear visually as haze or smog …" *Id*. at 61. The many factors that contribute to ground-level ozone concentrations at any given time and location can be separated into two general categories. *Id*. at 62. The first category includes sources that emit ozone precursors, such as trucks or heavy equipment that emit $NO_x$. The second category includes meteorological conditions, such as a warming climate that are conducive to the formation of ozone. *Id*. at 61-62. "The primary climate change impacts on ozone formation are expected to result from changes to meteorological conditions …" *Id*. at 62. This phenomenon, which is frequently referred to as the "ozone-climate penalty," is explained as "the deterioration of air quality due to a warming climate, in the absence of anthropogenic (human-caused) polluting" activities. *Ibid*. Thus, "even as emissions are reduced, ozone formation may still increase due to the warmer climate," *ibid*., making it more important to continue to reduce emissions of ozone precursors, even as it may become more difficult to reduce ozone pollution.

**$NO_x$ and PM**

In addition to its role as an ozone precursor, $NO_x$ can cause rainfall to become highly acidic, damaging leaves and plant structures during rain events. See NJDEP, Health and Environmental Effects of Ground-Level Ozone, https://www.nj.gov/dep/cleanairnj/health.html. $NO_x$ also contributes to the formation of secondary PM2.5, either through condensation or complex reactions with other compounds in the atmosphere.

As discussed in the Summary and more fully discussed in the Social Impact, PM2.5 and especially diesel PM have been linked to public health risks. Particles also have adverse

environmental effects. Particulate matter can acidify lakes and streams, change the nutrient balance in coastal waters and large river basins, deplete nutrients in soil, damage farm crops and sensitive forests, affect ecosystem diversity, and contribute to acid rain effects. *Ibid*. Fine PM also is the main cause of reduced visibility, or haze. At elevated PM2.5 concentrations, visual ranges are degraded and images of scenic views (for example, mountains and urban skylines) are significantly obscured.

When PM2.5 is discharged directly from combustion sources, such as diesel vehicles, it contains a component known as black carbon that is a short-lived climate pollutant with a high global warming potential.

**Performance standards for cargo handling equipment**

To estimate potential emission reductions as a result of the proposed rulemaking, the Department evaluated information that the Port Authority of New York & New Jersey (PANY/NJ) has made publicly available regarding the cargo handling equipment used at its marine terminals. PANY/NJ is a landlord port that leases marine terminals to private terminal operators. PANY/NJ's Port Department annually provides an equipment and emissions inventory report with estimates of air emissions generated each year by mobile emission sources, including cargo handling equipment, associated with its marine terminals. PANY/NJ's annual multi-facility emissions inventory reports are available at https://www.panynj.gov/port/en/our-port/sustainability/air-emissions-inventories-and-related-studies.html.

The Department used information provided in PANY/NJ's inventory reports for the years 2016, 2017, 2018, and 2019 and the EPA's MOtor Vehicle Emissions Simulator (MOVES model)

to estimate the projected emission reductions of direct PM2.5 and $NO_x$ from implementation of the proposed rulemaking. Specifically, the Department relied upon the equipment numbers, tier levels, load factors, average horsepower levels, and average annual operating hours for cargo handling equipment included in the PANY/NJ inventories that would be subject to the proposed rulemaking. The Department then ran the MOVES model to estimate emission factors for the various cargo handling equipment types and tier levels. The Department used the emission factors from MOVES with the PANY/NJ data, such as hours of use per year, load factors, and horsepower to estimate emissions.

To calculate the estimated emission benefits of the proposed rulemaking, the Department first determined the emissions based on business as usual (BAU), or the baseline scenario. Over time, older, lower tier level cargo handling equipment is steadily replaced with new, higher tier level cargo handling equipment at a certain rate, referred to as the BAU turnover rate. The Department estimated the BAU turnover rate by compiling and analyzing the equipment numbers and tier level distributions for 2016, 2017, 2018, and 2019 and, in some cases, applying useful life assumptions from CARB. The annual turnover rates for cargo handling equipment with a tier level less than the most stringent tier level required by the proposed rulemaking (Tier 4 final) over this historical period were calculated and applied to the 2019 equipment inventory to estimate turnover for future years through 2035. This resulted in an estimate of the number of each type of cargo handling equipment less than Tier 4 final in each future year. This was established as the BAU, or baseline scenario.

When the Department estimated the potential emissions benefits from the proposed rulemaking, there were no PANY/NJ requirements for cargo handling equipment operating at

its port terminals. However, the Department is aware that the PANY/NJ announced an initiative to require, at its port terminals, the phase-out of diesel cargo handling equipment and the transition of material-handling equipment "to clean zero-emissions electric port material-handling equipment, to the maximum extent practicable, as such equipment becomes available from manufacturers." See PANY/NJ Press Release 115-2021 (Oct. 28, 2021), https://www.panynj.gov/port-authority/en/press-room/press-release-archives/2021-press-releases/ahead-of-united-nations-climate-conference-port-authority-embraces-biden-administrations-new-goals.html. The Department did not incorporate the PANY/NJ's potential upcoming requirements in its emissions benefits calculations because PANY/NJ has not finalized its requirements. New PANY/NJ rules, if and when adopted, could affect the emissions benefits anticipated to accrue from the Department's proposed rulemaking.

The proposed rulemaking requires in-use cargo handling equipment to be equipped with a 2010 or later MY on-road engine or Tier 4 final off-road engine according to the phased compliance schedule. The Department assumes that equipment with older model year or lower tier engines will be replaced with compliant equipment or engines by the proposed deadlines. By evaluating the PANY/NJ data, the Department determined that to comply with the proposed compliance deadlines, some cargo handling equipment will need to be replaced sooner than was estimated in the BAU scenario. These pieces of cargo handling equipment are referred to as "affected cargo handling equipment" because their replacement would be a result of the proposed rulemaking. The Department then estimated direct PM2.5 and $NO_x$ emissions for 2028 and the period 2024 through 2035 for the affected cargo handling equipment for the BAU baseline scenario and the proposed rulemaking scenario. The emission

differences between these two scenarios are the estimated emission benefits attributable to the proposed rules. Finally, because PANY/NJ's information included its New York terminals, the Department estimated the emission benefits attributed to the cargo handling equipment at the PANY/NJ's New Jersey terminals by multiplying cargo handling equipment emissions from the New Jersey terminals and dividing by the sum of the cargo handling equipment emissions from both the New York and New Jersey terminals (multiplying by a factor of 0.93 for both PM2.5 and $NO_x$).

Using the above methodology, the Department estimates that the emission benefits in 2028 due to implementation of this proposed rulemaking at PANY/NJ marine terminals will be 6.4 tons of direct PM2.5 and 82 tons of $NO_x$. In addition, the cumulative emissions benefits from 2024 through 2035 due to implementation of the proposed rulemaking will be 38 tons of direct PM2.5 and 500 tons of $NO_x$. The direct PM2.5 emissions reductions will particularly benefit the local communities near ports and intermodal rail yards where the cargo handling equipment is operated. The reductions in $NO_x$ emissions will contribute to reductions in ground-level ozone concentrations (not quantified) in New Jersey.

The estimates provided as a result of the PANY/NJ analysis are the minimum benefits expected as a result of the proposed rulemaking. In addition to the estimated potential reductions at PANY/NJ, benefits are expected to accrue when equipment at other ports and terminals subject to the proposed rulemaking, such as South Jersey Port Corporation, Gloucester Marine Terminals, Perth Amboy, and intermodal rail yards operated by CSX and Norfolk Southern, complies with the proposed rulemaking. However, as explained, the Department does not have detailed information about the inventory of cargo handling

equipment at other ports or intermodal rail yards in the State and, thus, cannot quantify the additional potential emission reduction benefits. Ports that handle liquid cargo, such as Perth Amboy, are not expected to have cargo handling equipment to the same extent as ports handling bulk and containerized cargo. Nevertheless, as explained in the Summary and Social Impact statements, the Department expects the emissions reductions as a result of the proposed rulemaking will directly benefit the local residents and communities who live or work near a port or intermodal rail yard in the State by virtue of their physical proximity to the source of the emissions.

**Federal Standards Statement**

N.J.S.A. 52:14B-1 et seq. (P.L. 1995, c. 65), requires State agencies that adopt, readopt, or amend State rules that exceed any Federal standards or requirements to include in the rulemaking document a Federal standards analysis. Pursuant to section 209 of the Federal Clean Air Act (CAA), 42 U.S.C. § 7543, certain states may adopt California's standards authorized by the USEPA, as long as the state gives two-years' lead time. 42 U.S.C. § 7543. As explained in the Summary, the USEPA authorized California's CHE Regulation. See 77 FR 9,916 (Feb. 21, 2012); 80 FR 26,249 (May 7, 2015). Given the framework of the CAA, because the USEPA authorized California's CHE Regulation, the proposed rulemaking will not exceed a Federal standard. Thus, no further analysis is necessary.

**Jobs Impact**

The Department anticipates that the proposed new rules will have little or no impact on job retention or creation in the State. As part of its CHE Regulation, California explained that

jobs were not expected to be eliminated as a result of the regulation. See CARB Initial ISOR at p. VII-17. However, California believed the rules could lead to the augmentation or alteration of job duties, leading to no net result change in the number of jobs. See *ibid*. Because the Department's proposed rulemaking is based on the California's CHE Regulation, the Department similarly expects little or no impact on job creation or retention in the State.

**Agricultural Industry Impact**

The Department anticipates that the proposed rules will have a positive impact on the agricultural industry in New Jersey due to the expected reductions of $NO_x$ and PM2.5 emissions. As discussed in the Environmental Impact statement, $NO_x$ emissions contribute to the formation of ozone and secondary PM2.5, and $NO_x$, ozone, and particle pollution all harm crops and vegetation. For this reason, the proposed rulemaking should have a net positive impact on agriculture in the State by reducing emissions of pollutants that are harmful to crops and vegetation.

**Regulatory Flexibility Analysis**

As required by the New Jersey Regulatory Flexibility Act, N.J.S.A. 52:14B-16 et seq., the Department has evaluated the reporting, recordkeeping, and other compliance requirements that the proposed rules would impose upon small businesses. The Regulatory Flexibility Act defines the term "small business" as "any business which is a resident in this State, independently owned and operated and not dominant in its field, and which employs fewer than 100 full-time employees." Based upon this definition, the proposed rulemaking may

impose compliance and recordkeeping requirements on small businesses that own or operate a terminal or business at a port or that sell, rent, or lease cargo handling equipment for operation at ports and intermodal rail yards in the State. These requirements and their associated costs are discussed in the Summary and Economic Impact statements. Class I railroads are not small businesses. In light of the impacts from emissions from older diesel-fueled cargo handling equipment at ports and intermodal rail yards, particularly for local communities, as discussed in the Social and Environmental Impact statements, the Department does not propose an exemption or accommodation for small businesses.

As explained in the Summary, owners and operators subject to N.J.A.C. 7:27-34 will be required to submit a report to the Department about their cargo handling equipment fleet. The Department anticipates that a minority of businesses subject to the reporting requirements will employ fewer than 100 full-time employees. The amount of time necessary to complete these reports will depend on the number of cargo handling equipment in their fleet, as well as their current recordkeeping practices. The Department expects that such small businesses already have personnel who keep records of their cargo handling equipment inventory. While the Department acknowledges that those businesses will need to allocate time for personnel to compile and submit the information required, those businesses with electronic recordkeeping practices will likely have to spend less time completing the report. The Department estimates that businesses with few pieces of cargo handling equipment or with electronic records of their cargo handling equipment inventory are likely to complete their reporting requirements in a few hours. Businesses with a moderate to large number of cargo handling equipment may need more time to complete their report. However, the Department anticipates that the reports will

be submitted through a web portal using an electronic form that guides the user through the questions, thereby minimizing the burden on small businesses. The electronic form will also facilitate the completion of subsequent annual reports, by allowing owners and operators to report only changes to their inventory from the prior year. Overall, the Department believes this will be minimal effort at minimal cost for the regulated entity.

**Housing Affordability Impact Analysis**

In accordance with N.J.S.A. 52:14B-4, the Department has evaluated the proposed rulemaking to determine its impact, if any, on the affordability of housing. Given that the applicability of the proposed rulemaking is limited to cargo handling equipment at ports and intermodal rail yards, the Department has determined that the proposed rulemaking is unlikely to impact housing affordability or the average costs of housing in the State.

**Smart Growth Development Impact Analysis**

In accordance with N.J.S.A. 52:14B-4, the Department has evaluated the proposed rulemaking to determine its impact, if any, on housing production in Planning Areas 1 or 2, or within designated centers, under the State Development and Redevelopment Plan. Given that applicability of the proposed rulemaking is limited to cargo handling equipment at ports and intermodal rail yards, the rulemaking is unlikely to evoke a change in housing production in Planning Areas 1 or 2, or within designated centers, under the State Development and Redevelopment Plan.

**Racial and Ethnic Community Criminal Justice and Public Safety Impact**

In accordance with N.J.S.A. 52:14B-4(a)(2) and 2C:48B-2, the Department has evaluated this rulemaking and determined that it will not have an impact on pretrial detention, sentencing, probation, or parole policies concerning adults and juveniles in the State. Accordingly, no further analysis is required.

**Full text** of the proposal follows (additions indicated in boldface **thus**; deletions indicated in brackets [thus]):

CHAPTER 27

AIR POLLUTION CONTROL

SUBCHAPTER 34. [(RESERVED)] **MOBILE CARGO HANDLING EQUIPMENT AT PORTS AND INTERMODAL RAIL YARDS**

**7:27-34.1 Purpose**

**The purpose of this subchapter is to reduce oxides of nitrogen ($NO_x$) and particulate matter (PM) emissions from cargo handling equipment with diesel-fueled compression ignition engines that operate at ports and intermodal rail yards in the State of New Jersey.**

**7:27-34.2 Applicability**

**(a) Except as otherwise provided, this subchapter applies to:**

**1. Any person who owns or operates a terminal or business at a port in New Jersey**

**and operates cargo handling equipment at that location;**

**2. Any person who owns or operates an intermodal rail yard in New Jersey and operates cargo handling equipment at that location; and**

**3. Any person conducting business in New Jersey who sells, offers for sale, leases, rents, or purchases any cargo handling equipment or CI engine that is used at any port or intermodal rail yard in New Jersey.**

**(b) This subchapter does not apply to:**

**1. Portable CI engines;**

**2. Military tactical support cargo handling equipment;**

**3. Cargo handling equipment used solely to support construction activities at a port or intermodal rail yard;**

**4. Mobile cranes;**

**5. Sweepers;**

**6. Rented, leased, or contracted equipment brought onto a port or intermodal rail yard to perform unexpected repairs that are not routine in nature or due to predictable maintenance activities; and**

**7. Equipment at low-throughput ports that are no closer than 75 miles to an urban area, except as provided at N.J.A.C. 7:27-34.13.**

**7:27-34.3 Definitions**

**The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.**

**"Alternate PM standard" means one of the Family Emissions Limit (FEL) standards that are currently available to engine manufacturers pursuant to 13 CCR 2423. Alternate standards are of limited duration and may be selectively applied to total or partial engine family production volumes.**

**“Best available control technology” means the maximum degree of PM and $NO_x$ emissions reduction achievable through application of available methods, systems, devices, and techniques.**

**“California Air Resources Board” or "CARB” means the agency or its successor agency established and empowered to regulate sources of air pollution in the State of California, including motor vehicles, pursuant to section 39003, California Health & Safety Code, 1999, as amended or supplemented.**

**"Cargo" means material, goods, or commodities that have been, or will be, transported to, or from, a port or intermodal rail yard by ship, train, truck, or other mode of transportation.**

**"Cargo handling equipment" means any mobile off-road, self-propelled vehicle, or equipment with a diesel-fueled CI engine used at a port or intermodal rail yard to lift or move container, bulk, or liquid cargo carried by ship, train, or another vehicle, or used to perform maintenance and repair activities that are routinely scheduled or that are due to predictable process upsets. Cargo handling equipment includes yard trucks and non-yard trucks.**

**“CCR” means the California Code of Regulations.**

**“Certification” or “certified” means a finding by CARB or the EPA that a motor vehicle, motor vehicle engine, off-road CI engine, or air contaminant emission control system has**

**satisfied the criteria for the control of specified air contaminants from such vehicles, engines, or control systems, adopted by CARB or the EPA, as set forth in their rules and/or regulations.**

**"Certified on-road engine" means an engine certified to 2010 or later model year California on-road engine emission standards at 13 CCR 1956.8, incorporated herein by reference.**

**“Certified Tier 4 final off-road engine” means an engine certified to the California Tier 4 final off-road emission standards at 13 CCR 2423, incorporated herein by reference, for the rated horsepower.**

**"Class I railroad" is a freight railway that meets the revenue threshold for a Class I railroad, as defined by the Surface Transportation Board.**

**"Compression ignition engine" or “CI engine” means an internal combustion engine with operating characteristics significantly similar to the theoretical diesel combustion cycle. The regulation of power by controlling fuel supply in lieu of a throttle is indicative of a compression ignition engine. Any engine certified under the diesel cycle is included under the definition of a compression ignition engine.**

**"Construction activities" include any activities at a port or intermodal rail yard that are preparatory to or involved with the building, alteration, rehabilitation, demolition, or improvement of property, including, but not limited to, the following activities: grading excavation, loading, crushing, cutting, planning, shaping, or groundbreaking.**

**"Contiguous properties" means adjacent properties, even if they are separated by human-made barriers or structures, including roadways, or legal boundaries.**

**"Diesel fuel" means any fuel that is commonly or commercially known, sold, or represented by the supplier as diesel fuel, including any mixture of primarily liquid hydrocarbons that is sold or represented by the supplier as suitable for use in an internal combustion, compression-ignition engine.**

**"Diesel-fueled CI engine" means a CI engine fueled by diesel fuel, ultra-low sulfur diesel, or jet fuel, in whole or in part.**

**“Diesel particulate matter” or “diesel PM” means the particles found in the exhaust of diesel-fueled CI engines. Diesel PM may agglomerate and adsorb other species to form structures of complex physical and chemical properties.**

**“Dozer” means an off-road tractor, either tracked or wheeled, equipped with a blade.**

**“Excavator” means an off-road vehicle consisting of a backhoe and cab mounted on a pivot atop an undercarriage with tracks or wheels.**

**“Family Emissions Limit” or “FEL” refers to an emission level that is declared by the manufacturer to serve as an emission standard for certification purposes and for the averaging, banking, and trading program as defined at 13 CCR 2423.**

**“Fleet” means the total number of cargo handling equipment owned, rented, or leased by an owner or operator, which is located at a specific port or intermodal rail yard.**

**“Forklift” means an off-road industrial truck used to hoist and transport materials by means of steel fork(s) under the load.**

**“Hybrid” means powered by two or more sources of energy.**

**“Hydrocarbon” or “HC” means any compound or mixture of compounds whose molecules consist of atoms of hydrogen and carbon only.**

**"In-use cargo handling equipment" means cargo handling equipment or a diesel-fueled CI engine installed in cargo handling equipment that is purchased, rented, leased, or otherwise brought onto, and in operation at, a port or intermodal rail yard in New Jersey before (the first day of the 25th month after the operative date of this rulemaking).**

**"Intermodal rail yard" means any transportation facility owned or operated by a Class I railroad that is primarily dedicated to the business of intermodal rail operations where cargo is transferred to or from a train and any other form of conveyance, such as train-to-ship, ship-to-train, train-to-truck, or truck-to-train.**

**"Lease" means a contract by which one conveys cargo handling equipment for a specified term and for a specified rent.**

**"Level" means one of three categories of CARB-verified diesel emission control strategies as set forth at 13 CCR 2701 et seq: Level 1 means the strategy reduces engine diesel particulate matter emissions by between 25 and 49 percent; Level 2 means the strategy reduces engine diesel particulate matter emissions by between 50 and 84 percent; and Level 3 means the strategy reduces engine diesel particulate matter emissions by 85 percent or greater, or reduces engine emissions to less than or equal to 0.01 grams diesel PM per brake horsepower-hour.**

**"Loader" means any type of off-road tractor with either tracks or rubber tires that uses a bucket on the end of movable arms to lift and move material; is also referred to as a front-end loader, front loader, skid steer loader, backhoe, rubber-tired loader, or wheeled loader.**

**"Low-throughput port" means a port that has a two-year average annual cargo**

**throughput of less than one million tons per year, not including petroleum products, as reported by the U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center.**

**"Military tactical support cargo handling equipment" means cargo handling equipment that meets military specifications, is owned by the U.S. Department of Defense and/or the U.S. military services, and is used in combat, combat support, combat service support, tactical or relief operations, or training for such operations.**

**"Mobile crane" means a mobile machine, other than a rubber-tired gantry crane, with a hoisting mechanism mounted on a specially constructed truck chassis or carrier; a mobile crane can either be a single-engine crane or a two-engine crane.**

**"Model year" or "MY" means the CI engine manufacturer's annual production period, which includes January 1st of a calendar year, or if the manufacturer has no annual production period, the calendar year.**

**"New cargo handling equipment" means cargo handling equipment or a certified diesel-fueled CI engine installed in cargo handling equipment that is purchased, rented, leased, or otherwise brought onto and operated at a port or intermodal rail yard in New Jersey on or after (the first day of the 25th month after the operative date of this rulemaking).**

**"Nitrogen oxides" or "$NO_x$" means compounds of nitric oxide (NO), nitrogen dioxide (NO), and other oxides of nitrogen, which are typically created during combustion processes and are major contributors to smog formation and acid deposition.**

**"Non-yard truck" means all cargo handling equipment other than yard trucks. Non-yard trucks include rubber-tired gantry cranes, top handlers, side handlers, reach stackers, straddle carriers, forklifts, loaders, tractors, aerial lifts, excavators, and dozers.**

**"Ocean-going vessel" means a commercial, government, or military vessel meeting any one of the following criteria:**

1. **A vessel with a "registry" (foreign trade) endorsement on its United States Coast Guard certificate of documentation, or a vessel that is registered under the flag of a country other than the United States;**
2. **A vessel greater than or equal to 400 feet in length overall (LOA) as defined at 50 CFR 679.2, as adopted June 19, 1996;**
3. **A vessel greater than or equal to 10,000 gross tons (GT ITC) per the convention measurement (international system) as defined at 46 CFR 69.51 through 69.61, as adopted September 12, 1989; or**
4. **A vessel propelled by a marine compression ignition engine with a per-cylinder displacement of greater than or equal to 30 liters.**

**"Off-road vehicle or equipment" means any non-stationary device, including registered motor vehicles, powered by an internal combustion engine or motor, used primarily off the highways to propel, move, or transport persons or property.**

**"Opacity" means the fraction of a beam of light, expressed in percent, which fails to penetrate a plume of smoke.**

**"Particulate matter" or "PM" means the particles found in the exhaust of CI engines, which may agglomerate and adsorb other species to form structures of complex physical and chemical properties.**

**"Person" means an individual, public or private corporation, company, partnership, firm, association, society, joint stock company, international entity, institution, county,**

**municipality, state, interstate body, the United States of America, or any agency, board, commission, employee, agent, officer, or political subdivision of a state, an interstate body, or the United States of America.**

**"Port" means a publicly or privately owned property located at a harbor or along a waterway where marine and port terminals typically operate by loading and unloading water-borne commerce onto and from ocean-going vessels; a port includes all terminals and property within the physical boundaries of the port or demarcated as the port on city or county land maps, as well as other contiguous properties owned or operated by the port. A port includes military terminals that operate cargo handling equipment when located as part of, or on contiguous properties with, non-military terminals.**

**"Portable CI engine" means a compression ignition engine designed and capable of being carried or moved from one location to another. Indicators of portability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. Portable engines are not self-propelled.**

**"Purchased" means the date shown on the front of the cashed check, the date of the financial transaction, or the date on the engine purchasing agreement, whichever is earliest.**

**"Reach stacker" means an off-road truck-like cargo container handler that uses an overhead telescopic boom that can reach across two or more stacks of cargo containers and lift the containers from the top.**

**"Registered motor vehicle" means cargo handling equipment that is registered as a motor vehicle pursuant to N.J.S.A. 39:3-4.**

**"Rent" means payment for the use of cargo handling equipment for a specified term.**

**"Retirement" or "retire" means an engine or cargo handling equipment that will be taken out of service, will not be operated at any port or intermodal rail yard in New Jersey, and will not be replaced with a new engine or cargo handling equipment.**

**"Rubber-tired gantry crane" or "RTG crane" means an off-road overhead cargo container crane with the lifting mechanism mounted on a cross-beam supported on vertical legs that run on rubber tires. RTG cranes do not include gantry cranes that operate on steel wheels and rails.**

**"Side handler" or "side pick" means an off-road truck-like cargo container handler that uses an overhead telescopic boom to lift empty or loaded cargo containers by grabbing either two top corners on the longest side of a container, both arms of one side of a container, or both top and bottom sides of a container.**

**"Sweeper" means an off-road vehicle with attached brushes underneath that sweep the ground and pick up dirt and debris.**

**"Terminal" means a facility, including one owned or operated by the Department of Defense or the U.S. military services, that handles cargo at a port or intermodal rail yard.**

**"Top handler" or "top pick" means an off-road truck-like cargo container handler that uses an overhead telescopic boom to lift empty or loaded cargo containers by grabbing the top of the containers.**

**"Two-year average annual cargo throughput" means the arithmetic average of the annual cargo throughput, not including petroleum products, as reported by the U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center, for the most recently reported calendar year and the calendar year immediately preceding that year.**

**“Ultra-low sulfur diesel” or “ULSD” means a diesel fuel with a maximum sulfur concentration of 15 parts per million.**

**“Urban area” means a densely developed territory that contains 50,000 or more people, as reported by the latest U.S. Census Bureau census.**

**“Verification Procedure, Warranty, and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines (Verification Procedure)" means the CARB regulatory procedure codified at 13 CCR 2700-2710, which is incorporated herein by reference, that engine manufacturers, sellers, owners, or operators may use to verify the reductions of diesel PM and/or $NO_x$ from in-use diesel engines using a particular emission control strategy.**

**"Verified diesel emission control strategy” or “VDECS" means an emission control strategy, designed primarily for the reduction of diesel PM emissions, which has been verified pursuant to the "Verification Procedure for In-Use Strategies to Control Emissions from Diesel Engines" at 13 CCR 2700.**

**"Warranty period" means the period of time and/or mileage that a vehicle, engine, or part is covered by the engine manufacturer's new engine warranty provisions.**

**"Water-borne commerce" means the movement of materials, goods, or commodities using vessels or other craft plying upon navigable waters of the United States.**

**"Yard truck" means an off-road mobile utility vehicle with or without chassis that is used to carry cargo containers. A yard truck is also known as a utility tractor rig (UTR), yard tractor, yard goat, yard hostler, yard hustler, or prime mover.**

**“Zero-emission” means an engine or equipment that does not produce exhaust**

**emissions of any criteria pollutant (or precursor pollutant) or greenhouse gas, excluding emissions from air conditioning systems, under any possible operational modes or conditions.**

**7:27-34.4 General provisions**

**(a) Any person who owns or operates a terminal or business at a port in New Jersey and operates cargo handling equipment at that location is required to keep all cargo handling equipment subject to this subchapter in compliance with the requirements of this subchapter at all times.**

**(b) Any person who owns or operates an intermodal rail yard in New Jersey and operates cargo handling equipment at that location is required to keep all cargo handling equipment subject to this subchapter in compliance with the requirements of this subchapter at all times.**

**(c) No person conducting business in the State shall sell, offer to sell, import, deliver, purchase, receive, or otherwise acquire any cargo handling equipment or CI engine for the purpose of selling, renting, or leasing the cargo handling equipment or CI engine for operation or use at a port or intermodal rail yard in New Jersey, if the equipment or engine does not meet the requirements of this subchapter.**

**(d) Failure to comply with any of the obligations or requirements of this subchapter shall subject the violator to an enforcement action pursuant to the provisions of the Air Pollution Control Act, at N.J.S.A. 26:2C-19, and the Air Administrative Procedures and Penalties, at N.J.A.C. 7:27A-3.**

**(e) All information submitted to the Department pursuant to this subchapter shall be a public**

**record, unless the person submitting the information asserts a confidentiality claim and the Department determines that the information is entitled to confidential treatment in accordance with N.J.A.C. 7:27-1.8 through 1.30.**

**7:27-34.5 Performance standards for new cargo handling equipment**

**(a) On or after (the first day of the 25th month after the operative date of this rulemaking), any new cargo handling equipment that is a registered motor vehicle shall be equipped with a certified on-road engine for the model year in which the cargo handling equipment and engine is newly purchased, leased, or rented.**

**(b) Except as otherwise provided, on or after (the first day of the 25th month after the operative date of this rulemaking), any new cargo handling equipment that is not a registered motor vehicle shall be equipped with one of the following:**

**1. A certified on-road engine for the model year in which the cargo handling equipment is newly purchased, leased, or rented;**

**2. A certified Tier 4 final off-road engine; or**

**3. A certified engine and power system that meet the emission standards of a certified on-road engine for the model year in which the cargo handling equipment and/or engine or power system is newly purchased, leased, or rented, or a certified Tier 4 final off-road engine. Compliance with the emission standards shall be demonstrated to the Department by using one of the following tests:**

**i. Testing conducted by the engine manufacturer for the engine and power system;**

**ii. Testing conducted by the engine manufacturer for another in-use engine and power system that is configured and used in a substantially similar way to the engine and power system; or**

**iii. Testing conducted to meet the regulatory requirements of CARB's Verification Procedure.**

**(c) The following additional provisions apply to new cargo handling equipment that is a non-yard truck and not a registered motor vehicle:**

**1. If an owner or operator cannot comply with (b) above because the options at (b)1, 2, or 3 are not available for the specific application and equipment type, the owner or operator may request Department approval to apply the best available control technology, in accordance with N.J.A.C. 7:27-34.10 and 34.10A.**

**2. If a non-yard truck was purchased with an engine complying with (b) above, but there is a manufacturer's delay in delivery, and if no comparable compliant cargo handling equipment is available for lease, then the owner or operator may lease, until the purchased equipment is delivered, a comparable non-yard truck that is equipped with a CI engine certified to meet the most stringent emission standards at 13 CCR 2423 for the rated horsepower and model year.**

**(d) A non-yard truck that is moved from one port terminal or intermodal rail yard to another port terminal or intermodal rail yard, or terminal under the control of the same owner or operator, shall be considered newly acquired and subject to the performance standards at N.J.A.C. 7:27-34.5, unless the owner or operator has received approval for such transfer pursuant to N.J.A.C. 7:27-34.12.**

**7:27-34.6 Performance standards for in-use yard trucks**

**(a) In accordance with the schedule at Table 1, any in-use yard truck shall be equipped with one of the following:**

**1. A certified on-road engine for the model year of the year purchased, rented, or leased;**

**2. A certified Tier 4 final off-road engine; or**

**3. A certified engine and power system that meet the emission standards of a certified on-road engine for the model year in which the cargo handling equipment and/or engine or power system is newly purchased, leased, or rented or a certified Tier 4 final off-road engine, as demonstrated to the Department by using one of the following tests:**

**i. Testing conducted by the engine manufacturer for the engine and power system;**

**ii. Testing conducted by the engine manufacturer for another in-use engine and power system that is configured and used in a substantially similar way to the engine and power system; or**

**iii. Testing conducted to meet the regulatory requirements of CARB's Verification Procedure.**

**Table 1: Compliance Schedule for In-Use Cargo Handling Equipment**

| Cargo handling equipment | Cargo handling equipment | Compliance deadline |
|---|---|---|

| | | |
|---|---|---|
| **with an on-road engine** | **with an off-road engine** | |
| **Pre-1998 model year** | **Tier 0** | **(the first day of the 25th month after the operative date of this rulemaking)** |
| **1998-2003 model year** | **Tier 1** | **(the first day of the 37th month after the operative date of this rulemaking)** |
| **2004-2006 model year** | **Tier 2** | **(the first day of the 49th month after the operative date of this rulemaking)** |
| **2007-2009 model year** | **Tier 3 and Tier 4 interim** | **(the first day of the 61st month after the operative date of this rulemaking)** |

**7:27-34.7 Performance standards for in-use non-yard trucks**

**(a) Except as otherwise provided, in accordance with the schedule at Table 1 above, any in-use non-yard truck shall be equipped with:**

**1. A certified on-road engine or certified Tier 4 final off-road engine;**

**2. An engine or power system that is certified to the Tier 4 Alternate PM off-road diesel engine standards as specified at 13 CCR 2423(b)(2)(B) for the rated horsepower and model year and used in conjunction with a Level 3 VDECS; or**

**3. A certified engine or power system that meets the emission standards of a certified on-road engine or certified Tier 4 final off-road engine, as demonstrated to the Department by using one of the following tests:**

**i. Testing conducted by the engine manufacturer for that engine or power system;**

**ii. Testing conducted by the engine manufacturer from another in-use engine or power system that is configured and used in a substantially similar way to the engine or power system; or**

**iii. Testing conducted to meet the regulatory requirements of CARB's Verification Procedure.**

**(b) If an owner or operator cannot comply with (a) above because the compliance options therein are not available for the specific application and equipment type, the owner or operator may apply the next best available control technology, if requested, and approved by, the Department in accordance with N.J.A.C. 7:27-34.10 and 34.10A.**

**7:27-34.8 Opacity limits**

**(a) Except as provided at (c) below, on or after (the first day of the 25th month after the operative date of this rulemaking), for new cargo handling equipment and on or after the compliance deadlines at Table 1 above for in-use cargo handling equipment, or**

**any approved compliance extension(s), any cargo handling equipment subject to this subchapter shall not exceed the opacity limits at Table 2 below. Compliance with the opacity limits will be determined by the Department with a smoke meter that meets, and is used in accordance with, the Society of Automotive Engineers "Surface Vehicle Recommended Practice, Snap Acceleration Smoke Test Procedure for Heavy-Duty Powered Vehicles" (SAE J1667, February 1996).**

**(b) Except as provided at (c) above, an owner or operator shall take out of service and repair any cargo handling equipment that exceeds the opacity limit at Table 2 below. The owner or operator shall not return the cargo handling equipment to service until it meets the opacity limits at Table 2. The owner or operator shall maintain all service and repair records in accordance with N.J.A.C. 7:27-34.15.**

**Table 2: Opacity limits**

| PM emissions limit to which cargo handling equipment powered by a diesel CI engine is certified | Opacity Limit |
|---|---|
| >0.40 g/bhp-hr PM | 55% |
| 0.31-0.40 g/bhp-hr PM | 45% |
| 0.21-0.30 g/bhp-hr PM | 35% |
| 0.11-0.20 g/bhp-hr PM | 25% |

| | |
|---|---|
| **0.05-0.10 g/bhp-hr PM** | **15%** |
| **<0.05 g/bhp-hr PM** | **5%** |

**(c) Cargo handling equipment that is a registered motor vehicle is subject to the applicable tests, procedures, and standards set forth at N.J.A.C. 7:27-14, 7:27B-4, and 13:20-26.**

**7:27-34.9 Replacement engines for in-use cargo handling equipment**

**Any in-use cargo handling equipment that is repowered with a replacement diesel-fueled CI engine is considered to be newly purchased, leased, or rented equipment and must meet the requirements at N.J.A.C. 7:27-34.5, unless the engine was replaced by the manufacturer due to failure during its warranty period.**

**7:27-34.10 Alternate compliance option, generally**

**(a) An owner or operator may request that the Department approve an alternate compliance option if it cannot meet the performance standards at N.J.A.C. 7:27-34.5 through 34.7, as applicable. The compliance options are:**

**1. Approval to use the best available control technology for a new non-yard truck that is not registered as a motor vehicle, or an in-use non-yard truck, if a compliant non-yard truck is not available; and**

**2. A fleet averaging plan, provided the fleet averaging plan results in no greater emissions, expressed in pounds, of PM and $NO_x$ from all cargo handling equipment in the fleet combined, during each calendar year, relative to the combined emissions that would have**

**occurred pursuant to N.J.A.C. 7:27-34.5, 34.6, and 34.7.**

**(b) An owner or operator shall not operate any cargo handling equipment under an alternate compliance option unless the Department notifies the applicant, in writing, that the alternate compliance option is approved.**

**(c) If the Department approves an alternate compliance option, the owner or operator shall operate the subject cargo handling equipment in accordance with the approval.**

**(d) The owner or operator shall submit its application at least 90 days prior to the applicable compliance deadline.**

**(e) The owner or operator shall submit its application on a form available at www.stopthesoot.org. The application shall include:**

**1. Owner or operator name, address, and contact information;**

**2. Equipment and engine information, including make, model, serial number, and other information that uniquely identifies the equipment or engine for which an alternate compliance option is sought;**

**3. Proposed fleet averaging plan, if applicable; and**

**4. Any other information necessary for the Department's evaluation of the fleet averaging plan.**

**(f) Within 30 days after receipt of an application, the Department will notify the applicant if the application is administratively complete or incomplete.**

**1. If the application is incomplete, the Department will notify the applicant of the additional information required and provide a reasonable due date by which the applicant shall submit the information to the Department. Upon determining that the application is**

**complete, the Department will notify the applicant.**

**2. The Department may request additional information relevant to the required demonstrations at N.J.A.C. 7:27-34.10, 34.10A, or 34.10B from an applicant at any time after the submittal of an application, regardless of whether the application is administratively complete at the time of the Department's information request. A Department request for additional information shall not alter the completeness status of the application.**

**3. If an applicant fails to submit the information requested by the due date, the Department will deny the application.**

**(g) The Department will approve or deny an application within 30 days of receipt of an administratively complete application.**

**7:27-34.10A Alternate compliance option - non-yard truck**

**(a) An owner or operator may request approval to apply the best available control technology for a new non-yard truck that is not registered as a motor vehicle or an in-use non-yard truck, if it cannot meet the performance standards at N.J.A.C. 7:27-34.5 and 34.7.**

**(b) The Department will grant the application if the owner or operator:**

**1. Demonstrates that it is not reasonably able to comply with the applicable performance standards because a certified on-road engine or certified Tier 4 final off-road engine with the appropriate physical or performance characteristics for the particular application is not available from any manufacturer or dealer;**

**2. Provides documentation from representatives of equipment and/or engine manufacturers supporting the claim of non-availability;**

**3. Demonstrates that use of the non-yard truck is necessary to prevent a disruption in operations; and**

**4. Provides an analysis of all available control technologies and demonstrates that the alternative proposal will achieve the maximum possible PM and $NO_x$ reductions for the particular engine or non-yard truck.**

**7:27-34.10B Alternate compliance option - fleet averaging plan**

**(a) An owner or operator may apply to implement a fleet averaging plan in lieu of the requirements at N.J.A.C. 7:27-34.5 through 34.7.**

**(b) The following requirements apply to an application for approval of a fleet averaging plan:**

**1. An applicant for a fleet averaging plan shall include, in the plan, two or more pieces of cargo handling equipment, but shall include in the plan only cargo handling equipment it owns or operates under its direct control at the same port or intermodal rail yard.**

**2. A piece of cargo handling equipment shall be included in no more than one plan.**

**3. The application for a fleet averaging plan shall include:**

**i. Documentation, calculations, emissions test data, or other information that establishes the PM and $NO_x$ reductions, expressed in pounds, from the cargo handling equipment combined will be equivalent to, or greater than, the combined emission reductions that would have been achieved upon compliance with N.J.A.C. 7:27-34.5, 34.6, or 34.7, as applicable; and**

**ii. The proposed recordkeeping, reporting, monitoring, and testing procedures that the applicant will use to demonstrate continued compliance with the plan.**

**4. Emission control strategies in the plan may include only:**

**i. Exhaust treatment control;**

**ii. Engine repower;**

**iii. Equipment replacement;**

**iv. Hybrid technology; or**

**v. Zero-emission equipment.**

**5. Emission reduction calculations demonstrating equivalence with the requirements at N.J.A.C. 7:27-34.5, 34.6, or 34.7, as applicable, shall:**

**i. Include only PM and $NO_x$ emissions from cargo handling equipment that operates at the port or intermodal rail yard to which the plan applies; and**

**ii. Not include reductions that are otherwise required by any local, State, or Federal rule, regulation, or statute, or any agreement or final administrative or court order to resolve an enforcement action, or agreed to as part of a local, State, or Federal grant, incentive, or voucher program.**

**(c) An application for approval of a fleet averaging plan shall be subject to public comment prior to Department action. The public comment period will be specified in the notice published pursuant to (f) below.**

**(d) The Department will provide public notice of the opportunity for public comment on each draft fleet averaging plan. The notice will:**

**1. Identify the port or intermodal rail yard where the cargo handling equipment is located, and provide the name and address of the owner or operator;**

**2. Identify the equipment involved and the fleet averaging plan proposed;**

**3. Provide the name and address of the Department, including the name, telephone number, and email address of an individual at the Department from whom interested persons may obtain additional information;**

**4. Announce the opportunity for public comment and provide a description of the public comment procedures set forth in this section;**

**5. Specify the length of the public comment period; and**

**6. Include the time and location of any public hearing to be held on the plan. If no public hearing is scheduled, the notice shall include procedures for requesting a public hearing.**

**(e) The Department will post the public notice and the draft fleet averaging plan on the Department's website, www.stopthesoot.org, for the duration of the public comment period.**

**(f) The Department may schedule a public hearing and include it in the notice of opportunity for public comment pursuant to (d) above. If the Department does not schedule a hearing, any person may request that the Department hold a hearing on the plan. A request for a public hearing shall be submitted, in writing, to the Department no later than the published date of the close of the comment period and shall include a statement of issues to be raised at the hearing. The issues raised shall be relevant to the draft fleet averaging plan under review by the Department.**

**1. If a public hearing is held, the Department shall provide public notice of the public hearing at least 15 days prior to the date the public hearing is scheduled.**

**2. If, in response to a request for a public hearing, the Department schedules a public hearing, the close of the public comment period shall be at 5:00 P.M. on the second State**

**business day following the date of the public hearing unless, a later date is specified in the notice provided. The Department may further extend the comment period by announcing the extension and its duration at the public hearing.**

**3. At any public hearing on a plan, the Department may, at its discretion, limit the time allowed for oral statements and request a person offering oral testimony to also submit the statement in writing.**

**7:27-34.11 Compliance extension, generally**

**(a) An owner or operator may apply for an extension of the deadline to comply with N.J.A.C. 7:27-34.6 and 34.7 for the following:**

**1. The new cargo handling equipment or engine was purchased to comply with N.J.A.C. 7:27-34.6 or 34.7, but has not been received due to manufacturer delay;**

**2. The equipment is operated less than 200 hours in a calendar year (low-use equipment); or**

**3. The owner or operator is replacing in-use cargo handling equipment with zero-emission cargo handling equipment.**

**(b) If the Department approves an extension request, the owner or operator shall operate the subject cargo handling equipment in accordance with the approval.**

**(c) The owner or operator shall submit the request to the Department at least 60 days prior to the applicable compliance deadline on a form available from the Department at www.stopthesoot.org. The application shall include:**

**1. Owner or operator name, address, and contact information;**

**2. Equipment and engine information, including make, model, serial number, and other information that uniquely identifies the equipment or engine for which a compliance extension is sought; and**

**3. Any other information required at N.J.A.C. 7:27-34.11A, 34.11B, and 34.11C below.**

**(d) Within 30 days after receipt of an application, the Department will notify the applicant that the application is administratively complete or incomplete.**

**1. If the application is incomplete, the Department will notify the applicant of the additional information required and provide 30 days for the applicant to submit the information to the Department. Upon determining that the application is complete, the Department will notify the applicant.**

**2. The Department may request additional information relevant to the required demonstrations at N.J.A.C. 7:27-34.11, 34.11A, 34.11B, or 34.11C from an applicant at any time after the submittal of an application, regardless of whether the application is administratively complete at the time of the Department's information request. A Department request for additional information shall not alter the completeness status of the application.**

**3. If an applicant fails to submit the information requested by the due date, the Department will deny the application.**

**(e) The Department will approve or deny an application within 30 days after receipt of an administratively complete application.**

**(f) If the Department approves the extension request, the approval will be in writing, and the owner or operator shall be deemed to be in compliance for the applicable period, provided**

**the owner or operator complies with all of the conditions of the Department's approval. If, upon inspection, the Department finds the owner or operator has not complied with any of the conditions of approval:**

**1. The extension will be automatically revoked and the equipment will be considered noncompliant from the date that compliance would otherwise have been required pursuant to N.J.A.C. 7:27-34.6 or 34.7, but for the extension; and**

**2. The owner or operator shall not use the cargo handling equipment that is subject to the extension request until the owner or operator brings the equipment into compliance with N.J.A.C. 7:27-34.6 or 34.7, as applicable.**

**7:27-34.11A Compliance extension - manufacturer delay**

**(a) An owner or operator may request a compliance extension of an applicable compliance deadline at N.J.A.C. 7:27-34.6 or 34.7, if the new cargo handling equipment or engine was purchased to comply with N.J.A.C. 7:27-34.6 or 34.7, but has not been received due to manufacturer delays.**

**(b) The Department will grant the extension if the Department determines that the equipment was purchased, or the owner or operator and seller had entered into a contractual agreement for the purchase, at least six months prior to the required compliance date. An application for an extension due to manufacturer delay must include:**

**1. Identification of the delayed equipment and/or engine type and application, including engine horsepower;**

**2. A purchase order, letter, or other form of documentation that demonstrates that at**

**least six months prior to the original compliance date the owner or operator entered into a contract to purchase equipment and/or engine meeting the requirements at N.J.A.C. 7:27-34.5; and**

**3. Documentation from a representative of the equipment and/or engine manufacturer supporting the applicant's claim of delayed availability, including the anticipated date that the equipment and/or engine meeting the requirements at N.J.A.C. 7:27-34 will be available and able to be delivered to the owner or operator.**

**7:27-34.11B Compliance extension – low-use equipment**

**(a) An owner or operator may request a compliance extension of an applicable compliance deadline at N.J.A.C. 7:27-34.6 and 34.7, for any piece of cargo handling equipment that is operated less than 200 hours annually. An extension under this section shall be for no longer than two years.**

**(b) The Department will approve an extension if the owner or operator:**

**1. Is in compliance with N.J.A.C. 7:27-34.6, 34.7, and 34.8 for all other cargo handling equipment in its fleet pursuant to the compliance schedule at N.J.A.C. 7:27-34.6, Table 1; and**

**2. Includes in the application for a compliance extension, documentation from a non-resettable hour meter or fuel records, indicating that each engine for which an extension is requested was operated less than 200 hours in the preceding calendar year; and**

**3. Installs a non-resettable hour meter, which records the hours of use of a particular engine and is incapable of being adjusted, on each engine for which the compliance extension is requested.**

**(c) For the duration of the extension, the owner or operator shall include in its annual report required at N.J.A.C. 7:27-34.14, the annual hours of operation for each engine that is subject to a compliance extension under this section.**

**(d) The Department may elect to limit the extensions pursuant to this section to no more than two engines in a single fleet, or two percent of a fleet, whichever is greater. In making its decision, the Department will consider the impact of the extensions on public health based on an evaluation of:**

**1. The number of pieces of equipment granted an extension pursuant to this section;**

**2. The hours of operation of the equipment;**

**3. The estimated emissions; and**

**4. The proximity of the equipment to residences.**

**7:27-34.11C Compliance extensions – zero-emission replacement**

**(a) An owner or operator may request an extension of an applicable compliance deadline at N.J.A.C. 7:27-34.6 and 34.7 for any piece of in-use cargo handling equipment that the owner or operator requests to replace with zero-emission cargo handling equipment.**

**(b) The Department will grant the request if the owner or operator provides in its application:**

**1. Documentation from an equipment or engine manufacturer or dealer that a certified zero-emission engine or equipment is available for the make, model, and horsepower of the cargo handling engine or equipment being replaced;**

**2. Purchase order or other documentation that includes a certification as provided at N.J.A.C. 7:27-1.39 and shows the owner or operator's intent to purchase the certified zero-emission cargo handling engine or equipment within two years of the applicable compliance deadline; and**

**3. Documentation, or a workplan, demonstrating that the necessary charging or fueling infrastructure to support operation of the zero-emission equipment will be in place within two years of the applicable compliance deadline.**

**7:27-34.12 Department approval to transfer non-yard trucks between two facilities**

**(a) An owner or operator may request approval to transfer non-yard trucks between two port terminals or intermodal rail yards.**

**(b) No person may operate any transferred cargo handling equipment that does not meet the performance standards set forth at N.J.A.C. 7:27-34.5, unless the Department notifies the applicant, in writing, that the transfer plan is approved.**

**(c) If the Department approves a transfer plan, the owner or operator shall operate the subject cargo handling equipment in accordance with the approval.**

**(d) The owner or operator shall submit its application to the Department at least 60 days prior to the proposed transfer date on a form available from the Department at www.stopthesoot.org. The application shall include:**

**1. Owner or operator name, address, and contact information;**

**2. Number of pieces of equipment requested to be transferred:**

**3. Equipment and engine information, including make, model, serial number,**

**horsepower, and other information that uniquely identifies the equipment or engine subject to the transfer request;**

**4. Hours of operation of each piece of equipment subject to the transfer request; and**

**5. Proximity of the new location to residences.**

**(e) Within 30 days after receipt of an application, the Department will notify the applicant if the application is administratively complete or incomplete.**

**1. If the application is incomplete, the Department will notify the applicant of the additional information required and provide 30 days for the applicant to submit the information to the Department. Upon determining that the application is complete, the Department will notify the applicant.**

**2. The Department may request additional information relevant to the required demonstrations at N.J.A.C. 7:27-34.12 from an applicant at any time after the submittal of an application, regardless of whether the application is administratively complete at the time of the Department's information request. A Department request for additional information shall not alter the completeness status of the application.**

**3. If an applicant fails to submit the information requested by the due date, the Department will deny the application.**

**(g) The Department will approve or deny an application within 30 days of receipt of an administratively complete application.**

**(h) The Department will allow the transfer of non-yard truck cargo handling equipment between two port terminals or intermodal rail yards, if the owner or operator submits its request and transfer plan to the Department on a form available at www.stopthesoot.org, at**

**least 30 days prior to the applicable transfer date, provided:**

**1. The facilities that the equipment is being transferred from and to are under the control of the same owner or operator;**

**2. The owner or operator agrees to bring the transferred equipment into compliance with the requirements at N.J.A.C. 7:27-34.7 before the equipment is put into operation at the new location; and**

**3. The Department determines that the transfer plan does not result in an increase in public health impacts.**

**7:27-34.13 Equipment at a low-throughput port**

**If a port that has been exempt from this subchapter in accordance with N.J.A.C. 7:27-34.2(a)7 because it is classified as a low-throughput port subsequently exceeds the two-year average annual cargo throughput limit, or the port becomes part of an urban area, each owner or operator at that port subject to this subchapter shall submit a plan for compliance to the Department within six months after the exceedance. The compliance plan shall demonstrate how the owner or operator will achieve compliance with this subchapter within two years after the exceedance, and shall include the information at N.J.A.C. 7:27-34.14(c) and (d), on the form available on www.stopthesoot.org.**

**7:27-34.14 Reporting requirements**

**(a) Any owner or operator subject to this subchapter shall submit an annual report through the web portal at www.stopthesoot.org. All submissions to the web portal shall include a**

**certification(s), as provided at N.J.A.C. 7:27-1.39.**

**(b) An owner or operator shall submit the initial report to the Department on or before August 1, 2023.**

**(c) An owner or operator shall include the following information in its initial report of the cargo handling equipment reflecting its fleet as of January 1, 2023:**

**1. Owner or operator name;**

**2. Contact name, phone number, mailing address, and email address;**

**3. Address, including name of port or intermodal rail yard, where the equipment is operated;**

**4. The total population of cargo handling equipment by engine model year;**

**5. For each piece of cargo handling equipment:**

**i. Equipment make, model, and model year;**

**ii. Engine make, model, and model year;**

**iii. Year of manufacture of equipment and engine (if unable to determine, approximate age);**

**iv. Engine family;**

**v. Engine serial number;**

**vi. If the equipment is registered as a motor vehicle, the vehicle registration number or license plate;**

**vii. Rated brake horsepower;**

**viii. Annual hours of use in 2022;**

**ix. Fuel type and annual fuel usage in 2022; and**

**x. If seasonal, actual months operated in 2022.**

**(d) An owner or operator is required to submit an annual report each calendar year thereafter. The owner or operator shall submit each subsequent annual report on or before August 1 reflecting the cargo handling equipment in the fleet as of January 1 of that calendar year. In its annual report for subsequent years, the owner or operator shall include the following:**

**1. Any changes to the material and information previously provided pursuant to (b) above, including information for any cargo handling equipment added to, or removed from, the owner/operator's fleet;**

**2. A description of the method and date of compliance for any cargo handling equipment subject to N.J.A.C. 7:27-34.6, 34.7, 34.10, or 34.11, including retirement date or engine installation date, if applicable;**

**3. For any cargo handling equipment removed from the fleet, information about the disposition of the equipment; and**

**4. For any cargo handling equipment for which an extension was granted, an update on the compliance status.**

**7:27-34.15 Recordkeeping requirements**

**(a) Beginning January 1, 2023, an owner or operator subject to this subchapter shall maintain the following records or copies of records at a single location at the port or intermodal rail yard where the equipment is operated or normally resides:**

**1. Any documents that may be required to verify compliance with this subchapter; and**

**2. Maintenance records for cargo handling equipment subject to this subchapter.**

**(b) Each owner or operator shall maintain these records for each piece of cargo handling equipment until it is sold outside of the State of New Jersey or is no longer used at a port or intermodal rail yard in the State of New Jersey. If ownership is transferred, the seller shall convey the records to the buyer, subject to (c) below.**

**(c) Any person who operates a place of business in New Jersey, including an owner or operator subject to this subchapter, shall maintain records of all sales, leases, rentals, purchases, acquisitions, receipt of, or other transfers of cargo handling equipment for a period of no less than five years after the date of the transaction.**

**(d) Upon the request of the Department, any person required to comply with (a) and/or (c) above shall make the specified records available for inspection at the place of business by any representative of the Department during normal business hours.**

**(e) Upon receipt of a written request from the Department, any person required to comply with (a) and/or (c) above shall timely submit a copy of the specified records to the Department by mail or by other means as agreed to by the Department.**

**7:27-34.16 Prohibitions**

**(a) No person subject to this subchapter shall cause, suffer, allow, or permit any of the following, unless it is performed in accordance with a CARB Executive Order (information on devices or modifications approved by a CARB Executive Order may be obtained from the**

**California Air Resources Board, 1001 "I" Street, PO Box 2815, Sacramento, CA 95812 or at www.arb.ca.gov) or 40 CFR Part 1068, Subparts C and D:**

**1. The disconnection, detachment, deactivation, or any other alteration or modification from the design of the original equipment manufacturer or an element of design installed on any cargo handling equipment with a certified configuration or cargo handling equipment engine with a certified configuration, except temporarily for the purpose of diagnosis, maintenance, repair, or replacement;**

**2. The sale, lease, or offer for sale or lease, of any cargo handling equipment with a certified configuration or cargo handling equipment engine with a certified configuration in which any element of design installed on such equipment has been disconnected, detached, deactivated, or in any other way altered or modified from the design of the original equipment manufacturer; or**

**3. The sale, or offer for sale, of any device or component as an element of design intended for use with, or as part of, any cargo handling equipment with a certified configuration or cargo handling equipment engine with a certified configuration that is not designed to duplicate the function and performance of any element of design installed by the original equipment manufacturer.**

**(c) No person shall cause, suffer, allow, or permit the operation of cargo handling equipment at a port or intermodal rail yard in the State if the cargo handling equipment emits visible smoke of any color in the exhaust emissions for more than three consecutive seconds when the engine is at normal operating temperature.**

CHAPTER 27A

AIR ADMINISTRATIVE PROCEDURES AND PENALTIES

SUBCHAPTER 3. CIVIL ADMINISTRATIVE PENALTIES AND REQUESTS FOR ADJUDICATORY HEARINGS

7:27A-3.10 Civil administrative penalties for violation of rules adopted pursuant to the Act

(a) – (l) (No change.)

(m) The violations of N.J.A.C. 7:27, whether the violation is minor or non-minor in accordance with (q), (r), (s), or (t) below, and the civil administrative penalty amounts for each violation are as set forth in the following Civil Administrative Penalty Schedule. The numbers of the following subsections correspond to the numbers of the corresponding subchapter at N.J.A.C. 7:27. The rule summaries for the requirements set forth in the Civil Administrative Penalty Schedule in this subsection are provided for informational purposes only and have no legal effect.

1. – 33. (No change.)

**34. The violations of N.J.A.C. 7:27-34, Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards, and the civil administrative penalty amounts for each violation, per vehicle or piece of equipment, are set forth in the following table:**

| Citation | Class | Type of Violation | First Offense | Second Offense | Third Offense | Fourth and Each Subsequent Offense |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| **N.J.A.C. 7:27-34.4(b)** | **Violating sales prohibition** | **NM** | **$2,500** | **$5,000** | **$12,500** | **$30,000** |
| **N.J.A.C. 7:27-34.5, 34.6, and 34.7** | **Failure to meet performance standards** | **NM** | **$2,500** | **$5,000** | **$12,500** | **$30,000** |
| **N.J.A.C. 7:27-34.8** | **Failure to meet opacity standards** | **NM** | **$1,000** | **$2,000** | **$5,000** | **$15,000** |
| **N.J.A.C. 7:27-34.10** | **Failure to comply with alternate compliance options** | **NM** | **$2,500** | **$5,000** | **$12,500** | **$30,000** |
| **N.J.A.C. 7:27-34.11** | **Failure to submit a compliance extension in a timely manner** | **NM** | **$400** | **$800** | **$2,000** | **$6,000** |
| **N.J.A.C. 7:27-34.11** | **Failure to meet the terms of a compliance extension** | **NM** | **$2,500** | **$5,000** | **$12,500** | **$30,000** |
| **N.J.A.C. 7:27-34.11** | **Failure to maintain operation records for engines with a compliance extension** | **M** | **$400** | **$800** | **$2,000** | **$6,000** |
| **N.J.A.C. 7:27-34.13** | **Failure to submit a compliance plan for equipment at low-throughput ports** | **M** | **$400** | **$800** | **$2,000** | **$6,000** |
| **N.J.A.C. 7:27-34.12** | **Failure to meet terms of transfer approval** | **NM** | **$2,500** | **$5,000** | **$12,500** | **$30,000** |
| **N.J.A.C. 7:27-34.14** | **Failure to submit reports** | **M** | **$400** | **$800** | **$2,000** | **$6,000** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **N.J.A.C. 7:27-34.15** | **Failure to keep records** | **M** | **$400** | **$800** | **$2,000** | **$6,000** |
| **N.J.A.C. 7:27-34.16(a)1** | **Violating tampering prohibition** | **NM** | **$1,000** | **$2,000** | **$5,000** | **$15,000** |
| **N.J.A.C. 7:27-34.16(a)2** | **Violating tampering prohibition** | **NM** | **$1,000** | **$2,000** | **$5,000** | **$15,000** |
| **N.J.A.C. 7:27-34.16(a)3** | **Violating tampering prohibition** | **NM** | **$2,000** | **$4,000** | **$10,000** | **$30,000** |
| **N.J.A.C. 7:27-34.16(b)** | **Violating visible smoke prohibition** | **NM** | **$250** | **$500** | **$1,000** | **$2,500** |

(n) – (u) (No change.)