

APPENDIX E

**Rule Consistency Analysis for
Proposed Amendments to Rule 4352
(Solid Fuel Fired Boilers, Steam Generators, and Process Heaters)**

December 16, 2021

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**RULE CONSISTENCY ANALYSIS FOR
PROPOSED AMENDMENTS TO RULE 4352
(SOLID FUEL FIRED BOILERS, STEAM GENERATORS, AND PROCESS HEATERS)**

I. REQUIREMENTS FOR RULE CONSISTENCY ANALYSIS

Pursuant to Section 40727.2 of the California Health and Safety Code, prior to adopting, amending, or repealing a rule or regulation, the District is required to perform a written analysis that identifies and compares the air pollution control elements of the rule or regulation with corresponding elements of existing or proposed District and United States Environmental Protection Agency (EPA) rules, regulations, and guidelines that apply to the same source category. The elements analyzed are emission standards, monitoring and testing, and recordkeeping and reporting requirements.

II. RULE CONSISTENCY ANALYSIS

A. District Rules

Facilities subject to District Rule 4352 could be subject to other District rules including:

- Rule 2201 New and Modified Stationary Source Review
- Rule 2020 Exemptions
- Rule 2520 Federally Mandated Operating Permits
- Rule 4101 Visible Emissions
- Rule 4301 Fuel Burning Equipment
- Rule 4305 Boilers, Steam Generators, and Process Heaters – Phase 2
- Rule 4306 Boilers, Steam Generators, and Process Heaters – Phase 3
- Rule 4307 Boilers, Steam Generators, and Process Heaters – 2.0 MMBtu/hr to 5.0 MMBtu/hr
- Rule 4308 Boilers, Steam Generators, and Process Heaters – 0.075 MMBtu/hr to less than 2.0 MMBtu/hr
- Rule 4351 Boilers, Steam Generators, and Process Heaters – Phase 1
- Rule 4601 Architectural Coatings
- Rule 4801 Sulfur Compounds
- Rule 8011 General Requirements
- Rule 8021 Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities
- Rule 8031 Bulk Materials
- Rule 8041 Carryout and Trackout
- Rule 8051 Open Areas
- Rule 8061 Paved and Unpaved Roads
- Rule 8071 Unpaved Vehicle/Equipment Traffic Areas

The above-listed rules are not in conflict with, nor are they inconsistent with the requirements of Proposed Rule 4352.

B. Federal EPA Rules and Regulations

1. 40 CFR 60 Subpart D (Standards of Performance for Fossil-Fuel Fired Steam Generators for Which Construction Commenced After August 17, 1971)

40 CFR 60 Subpart D applies to fossil fuel-fired, and fossil fuel and wood residue-fired steam generating units of more than 250 MMBtu/hr that commenced construction or modification after August 17, 1971. Subpart D establishes the emission standards for NO_x, SO_x, and PM. Since Rule 4352 applies to units that are fired on solid fuel, the rule consistency analysis focused only on the NO_x standards established in 40 CFR 60 Subpart D for similar type of fuel.

NO_x limits:

- Wood residue, or gaseous fossil fuel and wood residue – 0.30 lb/MMBtu
- Solid fossil fuel or solid fossil fuel and wood residue (except lignite or a solid fossil fuel containing 25 percent, by weight, or more of coal refuse) – 0.70 lb/MMBtu
- Lignite, or lignite and wood residue – 0.60 lb/MMBtu
- Lignite which is mined in North Dakota, South Dakota, or Montana and which is burned in a cyclone-fired unit – 0.80 lb/MMBtu

In general, the applicability, emission limits, and monitoring requirements of Rule 4352 are more stringent than those specified for units that are subject to 40 CFR 60 Subpart D.

2. 40 CFR 60 Subpart Db (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units)

40 CFR 60 Subpart Db applies to steam generating units with a heat input capacity of greater than 100 MMBtu/hr that commence construction, modification, or reconstruction after June 19, 1984. Steam generating units, as defined in 40 CFR 60 Subpart Db, do not include process heaters. Rule 4352 applies to solid fuel fired units so the rule consistency analysis focused only on the NO_x standards established in 40 CFR 60 Subpart Db for similar type of fuel.

NO_x limits:

- Mass-feed stoker – 0.50 lb/MMBtu
- Spreader stoker and fluidized bed combustion – 0.60 lb/MMBtu
- Pulverized coal – 0.70 lb/MMBtu
- Lignite – 0.60 lb/MMBtu

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- Lignite mined in ND, SD, MT, and combusted in a slag tap furnace – 0.80 lb/MMBtu
- Coal-derived synthetic fuels – 0.50 lb/MMBtu

In general, the applicability, emission limits, and monitoring requirements of Rule 4352 are more stringent than those specified for units that are subject to 40 CFR 60 Subpart Db.

3. 40 CFR 60 Subpart Cb (Emissions Guidelines and Compliance Times for Large Municipal Waste Combustors That are Constructed on or Before September 20, 1994)

40 CFR 60 Subpart Cb applies to each municipal waste combustor unit with a combustion capacity greater than 250 tons per day of municipal solid waste for which construction was commenced on or before September 20, 1994. Rule 4352 applies to solid fuel fired units so the rule consistency analysis focused only on the NOx standards established in 40 CFR 60 Subpart Cb for similar type of fuel.

NOx limits:

- Mass burn waterwall – 205 ppm at 7% O₂
- Mass burn rotary waterwall – 250 ppm at 7% O₂
- Refuse-derived fuel combustor – 250 ppm at 7% O₂
- Fluidized bed combustor – 240 ppm at 7% O₂
- Mass burn refractory combustors - no limit
- Fluidized bed combustor – 180 ppm at 7% O₂

In general, the applicability, emission limits, and monitoring requirements of Rule 4352 are more stringent than those specified for units that are subject to 40 CFR 60 Subpart Cb.

4. 40 CFR 63 Subpart DDDDD (NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters)

40 CFR 63 Subpart DDDDD establishes emission limits and work practice standards for boilers and process heaters to regulate hazardous air pollutants such as arsenic, cadmium, chromium, hydrogen chloride, hydrogen fluoride, lead, manganese, mercury, and nickel, as well as CO and filterable particulate matter. NESHAP applies to any boiler process or heaters located at a major source. Existing units are units that commenced construction on or before June 4, 2010; new units are units that commenced construction after June 4, 2010.

5. EPA –453/R-94-022 “Alternative Control Techniques (ACT) Document – NOx Emissions from Industrial/Commercial/Institutional Boilers”, dated March 1994.

The ACT discusses the different control techniques for controlling NO_x emissions from boilers with heat input capacities from 0.4 to 1,500 MMBtu/hr. The ACT also presented the achievable emission levels of several control techniques based on the type of boiler and the type of fuel used. The ACT contains cost effectiveness estimates for different control techniques. However, the ACT does not prescribe the specific emission limits that should be used in developing a regulation to control NO_x emissions from boilers.

6. EPA Control Techniques Guideline (CTG) Document

There is no EPA CTG for boilers, steam generators, and process heaters.

7. EPA Policy on Start-up or Shutdown

Section 5.3 of Rule 4352 establishes certain operational standards that must be met during start-up or shutdown of boilers, steam generators, and process heaters. District staff believe that the proposed start-up or shutdown provisions are consistent with the EPA policy as discussed in an EPA memorandum, dated February 15, 1983, "Policy on Excess Emissions During Start-up, Shutdown, Maintenance and Malfunctions" which prohibits automatic exemption during periods of start-up or shutdown of a unit.

8. EPA Policy on Recordkeeping

The recordkeeping requirement in Section 6.1 of Rule 4352 is consistent with EPA's policy to keep and maintain records for at least five years.

III. CONCLUSION

Based on the above analysis, District staff found that the proposed amendments to Rule 4352 would not conflict with federal rules, regulations, or policies covering similar stationary sources.