



EASTERN KERN AIR POLLUTION CONTROL DISTRICT

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AB 617 BARCT Implementation Schedule CH&SC §40920.6(c)

BACKGROUND

Assembly Bill 617 of 2017, California Health & Safety Code §40920.6(c) (AB 617) includes a specific requirement for each air district that is nonattainment for one or more air pollutant to adopt an expedited schedule for the implementation of best available retrofit control technology (BARCT), by the earliest feasible date, but no later than December 31, 2023, for each industrial source that, as of January 1, 2017, was subject to a market-based compliance mechanism adopted by the state board pursuant to subdivision (c) of Section 38562.

AB 617 BARCT APPLICABILITY

The Eastern Kern Air Pollution Control District (District) is designated an ozone and respirable particulate matter nonattainment area pursuant to the California Ambient Air Quality Standards. The following five District sources were subject to the market-based state board compliance mechanism by January 1, 2017.¹

ARB ID	Facility Name	Location	Sector	District
101029	Cal Portland Company	Mojave	Cement Plant	EKAPCD
101461	Lehigh Southwest Cement Co.	Tehachapi	Cement Plant	EKAPCD
101314	National Cement Co.	Lebec	Cement Plant	EKAPCD
104709	Sun Select Produce	Tehachapi	Other Combustion Source	EKAPCD
100300	U.S. Borax	Boron	Other Combustion Source	EKAPCD

PORTLAND CEMENT KILN BARCT

In 2017, the District identified Rule 425.3, Portland Cement Kilns (Oxides of Nitrogen) as a NO_x rule with deficiencies that needed to be corrected. During the amendment process, the District reviewed all potential control options for Portland cement kilns, met and discussed the options with all three cement plants, conducted a cost-effectiveness analysis, and presented those findings at a public workshop on November 2, 2017 in Mojave, California.²

Rule 425.3 was amended March 8, 2018, to reduce NO_x emissions from 6.4 lb/ton of clinker produced to 2.8 lb/ton or 3.4 lb/ton if a low-NO_x burner or low-NO_x precalciner was installed and made operational by January 1, 2007.

¹ The market-based compliance mechanism cited in Section 40920.6(c) is the California Air Resources Board's (CARB) Cap-and-Trade Program (Program). AB 617 does not expressly define the term "industrial source". Instead, the Program includes provisions for covered entities referred to as "industrial sectors", "industrial covered entities", "industry assistance", and "industrial facilities." These provisions relate to the term "industrial" to certain covered entities or facilities that are eligible for free allowance allocations under the Program. The provided list includes any covered entity that is eligible for a free allowance allocation in accordance with the Program requirements based on its engagement in an activity within a particular North American Industrial Code System (NAICS) listed in Table 8-1 of the Program. The list excludes opt-in covered entities and any industrial sources that became subject to the Program after January 1, 2017.

² Eastern Kern Air Pollution Control District Rule 425.3, Portland Cement Kilns (Oxides of Nitrogen) Final Staff Report March 8, 2018.

The District determined this was the most cost-effective approach for all existing Portland cement kilns. As these limits apply to all three Portland cement kiln sources subject to AB 617 BARCT requirements, and adopted through an amendment process that complies with the specific AB 617 BARCT consideration and review requirements, the District hereby determines that the most recent amendment of Rule 425.3 meets the AB 617 BARCT requirement for this source category.

LARGE INDUSTRIAL BOILER BARCT

Six large industrial boilers are included in the “Other Combustion Source” category, two located at Sun Select Produce and four located at U.S. Borax (see table below).

Facility Name	Location	Permit #	Permit Description
Sun Select Produce	Tehachapi	0509001	59 MMBtu/hr natural gas fired boiler with low NOx burners (Boiler #1)
Sun Select Produce	Tehachapi	0509002	59 MMBtu/hr natural gas fired boiler with low NOx burners (Boiler #2)
U.S. Borax	Boron	1004040	150 MMBtu/hr natural gas fired (Boiler #5)
U.S. Borax	Boron	1004041	150 MMBtu/hr natural gas fired (Boiler #6)
U.S. Borax	Boron	1004056	171 MM Btu/hr oil/natural gas fired steam boiler (Boiler #7) Will be retrofit with two (2) natural gas low NOx burners
U.S. Borax	Boron	1004278	93-MMBtu/hr natural gas fired boiler with low NOx burners

In 2017, the District identified Rule 425.2, Boilers, Steam Generators, and Process Heaters (Oxides of Nitrogen) as a NOx rule with deficiencies that needed to be corrected. November 2, 2017, the District held a public rule development workshop in Mojave, California to present proposed amendments to Rule 425.2.

Rule 425.2 was amended March 8, 2018,³ at a public hearing in Tehachapi, California. The amendments to Rule 425.2 are modeled after California Air Resources Board (CARB)’s Determination of Reasonably Available Control Technology (RACT) and Best Available Retrofit Control Technology (BARCT) for Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters.

Provisions of amended Rule 425.2 are applicable to any boiler, steam generator or process heater with a rated heat input of 5 MMBtu/hr or more with gaseous and/or liquid fuels. CARB’s Determination of RACT and BARCT for Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters (1992), cost-effectiveness analysis was used to determine cost-effectiveness for implementation of amended Rule 425.2.⁴

As the limits of Rule 425.2 apply to both District sources operating boilers, steam generators or process heaters subject to AB 617 BARCT requirements, and adopted through an amendment process that complies with the specific AB 617 BARCT consideration and review requirements, the District hereby determines that the most recent amendment of Rule 425.2 meets the AB 617 BARCT requirement for this source category.

³ Eastern Kern Air Pollution Control District Rule 425.2 Boilers, Steam Generators, and Process Heaters (Oxides of Nitrogen) Final Staff Report March 8, 2018.

⁴ Complete Document can be found at: <https://www.arb.ca.gov/ractbarc/boilers.pdf>

STATIONARY GAS TURBINE BARCT

U.S. Borax is the only facility in the District operating a gas turbine engine with a dry-low-NOx burner powering a Co-Generation (Gen) unit (Permit # 1004077) listed as an “Other Combustion Source” in CARB’s Annual Summary of Greenhouse Gas Emissions Data.

In 2017, the District identified Rule 425, Stationary Gas Turbines (Oxides of Nitrogen) as a NOx rule with deficiencies that needed to be corrected. November 2, 2017, the District held a public rule development workshop in Mojave, California to present proposed amendments to Rule 425.

Rule 425 was amended January 11, 2018,⁵ at a public hearing in Tehachapi, California. The amendments to Rule 425 are modeled after CARB’s Determination of Reasonably Available Control Technology (RACT) and Best Available Retrofit Control Technology (BARCT) for the Control of Oxides of Nitrogen from Stationary Gas Turbines.

Provisions of amended Rule 425 are applicable to stationary gas turbines with rated heat input of 10.0 megawatts (MW) or more and fired with gaseous or liquid fuels. There are also has NOx limits for units rated from 0.88 MW to 10.0 MW. CARB’s Determination of RACT and BARCT for the Control of Oxides of Nitrogen from Stationary Gas Turbines (1992), and EPA’s ACT Document – NOx Emissions from Stationary Gas Turbines (1993), cost-effectiveness analysis was used to determine cost-effectiveness for implementation of amended Rule 425.⁶

As the limits of Rule 425 apply to U.S. Borax, the only District sources operating a stationary gas turbine subject to AB 617 BARCT requirements, and adopted through an amendment process that complies with the specific AB 617 BARCT consideration and review requirements, the District hereby determines that the most recent amendment of Rule 425 meets the AB 617 BARCT requirement for this source category.

OTHER SOURCES

Four of the five identified sources are complex industrial facilities. The kilns, boilers, and gas turbine discussed above produce emissions that made each facility subject to CARB’s Cap and Trade Program, and therefore AB 617 BARCT. Control options for the following sources were analyzed in accordance with all applicable requirements, including AB 617 mandatory considerations.

Source	Device Type	BARCT	Proposed Date
Cement Plants	Material Storage	NSPS Subpart F	NA
	Material Screening	NSPS Subpart F	NA
	Homogenizing & Kiln Feed System	NSPS Subpart F	NA
	Clinker Cooling System	NSPS Subpart F	NA
	Milling-Grinding-Crushing	NSPS Subpart F	NA
	Diesel Piston Engine	NSPS Subpart IIII, CARB Diesel ATCM	NA
	Spark Ignited Engines	NSPS Subpart JJJJ, District Rule 427	12/31/2020

⁵ Eastern Kern Air Pollution Control District Rule 425, Cogeneration Gas Turbine Engines (Oxides of Nitrogen) Final Staff Report January 11, 2018.

⁶ Complete Document can be found at: <https://www.arb.ca.gov/research/apr/reports/13092.pdf>

Source	Device Type	BARCT	Proposed Date
Cement Plants	Material Loadout	NSPS Subpart F	NA
	Drilling Operations	NSPS Subpart F	NA
	Surface Coating Operations	District Rule 410.4	Revised 03/13/2014
	Gasoline Storage and Dispensing	CARB Executive Orders	NA
	Vacuum Trucks	NA Control Equipment	NA
	Sweeper	NA Control Equipment	NA
Source	Device Type	BARCT	Proposed Date
U.S. Borax	Material Storage	NSPS Subpart OOO	NA
	Milling-Grinding-Crushing	NSPS Subpart OOO	NA
	Dryer	NSPS Subpart OOO	NA
	Screening	NSPS Subpart OOO	NA
	Material Loadout	NSPS Subpart OOO	NA
	Material Packing	NSPS Subpart OOO	NA
	Material Conveying	NSPS Subpart OOO	NA
	Material Processing	NSPS Subpart OOO	NA
	Surface Coating Operation	District Rules 410.4 & 410.4A	Revised 03/13/2014
	Gasoline Storage & Dispensing	CARB Executive Orders	NA
	Cooling Towers	District Rule 429.1	12/31/2020
	Diesel Piston Engines	NSPS Subpart III, CARB Diesel ATCM	NA
	Spark Ignited Engines	NSPS Subpart JJJJ, District Rule 427	12/31/2020
	Abrasive Blasting Operations	CARB Abrasive Blasting (17 CCR 92000-92530)	NA
	Landfill	District Rule 402	Revised 03/12/2015
	Industrial Vacuum System	NA Control Equipment	NA
	Vacuum Trucks	NA Control Equipment	NA
	Sweeper	NA Control Equipment	NA
Sulfuric Acid Storage & Feed	NA	NA	

MANDATORY CONSIDERATIONS Public Meeting (CH&SC §40920.6(d))

This expedited implementation schedule, and the results of the various control options and cost-effectiveness analyses, was discussed at public meetings held October 15, 2018 and November 1, 2018.

LOCAL PUBLIC HEALTH AND CLEAN AIR BENEFITS (CH&SC §40920.6(d)(1))

None of the District's AB 617 BARCT sources pose a significant local public health risk, as each source is in compliance with current air quality regulations for criteria air pollutants, hazardous air pollutants, and toxic air contaminants.

COST EFFECTIVENESS (CH&SC §40920.6(d)(2))

The District evaluated all applicable BARCT rules for cost effectiveness. Cost-effectiveness of amended Rule 425.3, Portland Cement Kilns (Oxides of Nitrogen) is detailed in Appendix D of the Final Staff Report (3/8/2018). Cost-effectiveness of Rule 425.2, Boilers, Steam Generators, and Process Heaters (Oxides of Nitrogen) is detailed in www.arb.ca.gov/ractbarc/boilers.pdf. Cost-effectiveness of Rule 425, Stationary Gas Turbines (Oxides of Nitrogen) is detailed in www.arb.ca.gov/research/apr/reports/13092.pdf.

AIR QUALITY & ATTAINMENT BENEFITS (CH&SC §40920.6(d)(3))

The District is located on the western edge of the Mojave Desert and comprised of unique geography, topography, and meteorology, which creates a challenging environment for achieving attainment. Eastern Kern's air quality is overwhelmingly impacted from criteria air pollutants being transported from SJVAPCD to the North and West and SCAQMD to the South (both designated as Extreme Non-attainment).

High temperatures and low relative humidity in the District contribute to ozone formation. Temperatures in the District can exceed 95° Fahrenheit for sixty to seventy days per year between June and September. Relative humidity is very low averaging below 10 percent during the hottest part of the day. The combination of a hot dry climate, mixed with little to no cloud cover, produces an intense solar radiation that creates photochemical ozone. As a result, ozone concentrations in the District tend to be the highest from June to September.

Although the District faces many challenges, modeling has shown that continued enforcement of local rules, NSPS, and NESHAPs along with steady reductions in transport emissions from SJVAPCD and SCAQMD will result in achieving attainment in the near future.

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