

BOARD MEETING DATE: June 2, 2017

AGENDA NO. 11

**PROPOSAL:** Authorize Staff to Submit Letter of Support for CARB Locomotive Petition to U.S. EPA

**SYNOPSIS:** On April 13, 2017, CARB petitioned the U.S. EPA to adopt more stringent emission standards for locomotives. CARB seeks updated emission standards for new and remanufactured locomotives. New “Tier 5” standards for new locomotives, beginning in year 2025, would obtain up to 99% NO<sub>x</sub> and PM controls relative to uncontrolled locomotives. Such locomotives would also have the capability for zero-emission operations in designated areas. Standards for remanufactured locomotives would begin in year 2023 and would differ according to date of manufacture. CARB states that its 2016 Technology Assessment for Freight Locomotives demonstrates that these standards are feasible. CARB’s Petition is consistent with the need demonstrated in the 2016 AQMP for U.S. EPA to implement greater controls for sources that are under federal authority. Staff requests authorization to send a letter of support to U.S. EPA to support CARB’s petition, and to urge U.S. EPA to adopt stringent new standards as soon as feasible.

**COMMITTEE:** Mobile Source, May 19, 2017; Recommended for Approval

**RECOMMENDED ACTION:**

Authorize staff to submit the attached letter of support to U.S. EPA for the California Air Resources Board’s Petition for Rulemaking regarding locomotive engines, filed April 13, 2017.

Wayne Nastri  
Executive Officer

## **Background**

Locomotives contribute significantly to the air pollution problems in the South Coast Air Basin. In 2012, their NO<sub>x</sub> emissions exceeded 19 tpd, which is greater than NO<sub>x</sub> emissions from the entire RECLAIM universe of sources. As recognized in the 2016 AQMP, this region needs substantial reductions of NO<sub>x</sub> to attain the federal clean-air standards for ozone and PM<sub>2.5</sub>. Locomotives also emit diesel particulate matter, a pollutant that is recognized by CARB as a human carcinogen and is responsible for almost 70% of the total cancer risk from toxic air contaminants in the Basin, according to the SCAQMD Multiple Air Toxics Exposure Study, May 2015 (“MATES IV”).

Under the Clean Air Act, state and local agencies are absolutely preempted from setting emission standards for new locomotives. California has no ability to receive a waiver of preemption from U.S. EPA, as it can for motor vehicle standards and standards for most other non-road engines. 42 U.S.C. § 7543(e). In its initial locomotive rulemaking in 1998, U.S. EPA defined “new” locomotives to include “remanufactured” locomotives, so as a practical matter there are very few locomotives for which U.S. EPA may authorize CARB to adopt standards. Almost all locomotives are exclusively subject to U.S. EPA standard-setting.

U.S. EPA most recently updated its locomotive standards in 2008. The most stringent current standard is called “Tier 4” and applies to locomotives made in 2015 or later. CARB’s mobile source strategy for the 2016 state implementation plan included a provision that CARB would petition U.S. EPA to adopt updated, more stringent standards. The CARB Board approved the state strategy along with the 2016 AQMP on March 23, 2017. On April 13, 2017, CARB submitted a Petition for Rulemaking to U.S. EPA. The Petition asked U.S. EPA to adopt a new “Tier 5” standard for new locomotives that would be effective for engines manufactured in 2025 and thereafter.<sup>1</sup> The proposed standards would be 0.2 g/bhp-hr for NO<sub>x</sub> and less than 0.01 g/bhp-hr for PM, along with standards for GHGs and hydrocarbons. The Petition also asked U.S. EPA to establish increasingly more stringent standards for remanufactured locomotives. Those originally manufactured in 2005-2014 would be required to meet 1.3 g/bhp-hr for NO<sub>x</sub> upon remanufacture, beginning in 2023, whereas engines originally manufactured in 2015-2024 would have to meet 0.3 g/bhp-hr for NO<sub>x</sub> and less than 0.01 g/bhp-hr PM upon remanufacture, also beginning in 2023. CARB staff concluded that these standards are attainable for both switch locomotives and line-haul locomotives in freight and passenger rail service.

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<sup>1</sup> The CARB petition is available at <https://www.arb.ca.gov/railyard/railyard.htm>

**Proposal**

Staff requests approval to send the attached letter of support for CARB's Petition to U.S. EPA. The Bay Area Air Quality Management District sent a letter of support on May 1, 2017. Since only U.S. EPA may establish emission standards for new and remanufactured locomotives, U.S. EPA rulemaking is essential to obtain every feasible reduction in NO<sub>x</sub>, which is critical for implementing the 2016 AQMP. Furthermore, cleaner engines will greatly reduce the amount of diesel particulates emitted by locomotives, thus reducing cancer risk due to toxic air contaminants in areas where locomotives operate, including at railyards.

**Resource Impacts**

Staff has prepared a draft letter for the Board's consideration, and will make any changes requested by the Board using existing resources.

**Attachment**

Draft SCAQMD Letter of Support for CARB Locomotive Petition to U.S. EPA

# DRAFT

*Office of the Executive Officer*  
*Wayne Nastri*  
909.396.2100, fax 909.396.3340

June 2, 2017

***via e-mail and U.S. Mail***

The Honorable Scott Pruitt, Administrator  
Office of the Administrator  
United States Environmental Protection Agency  
1200 Pennsylvania Avenue NW  
Mail Code 1101A  
Washington DC 20460

Re: Adoption of New Emission Standards for New and Remanufactured  
Locomotives and Locomotive Engines

Dear Administrator Pruitt:

The South Coast Air Quality Management District (SCAQMD) strongly supports the petition by the California Air Resources Board (CARB) requesting the U. S. Environmental Protection Agency to promulgate more stringent emission standards for new and remanufactured locomotives.

The SCAQMD is the regional agency responsible for air pollution control in Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino Counties in California. Its 17 million residents breathe the most polluted air in the nation for ozone and the second most polluted air for PM<sub>2.5</sub>. The SCAQMD must reduce NO<sub>x</sub> emissions in the year 2023 by 45% beyond projected emissions with all existing regulations to attain the 1997 8-hour ozone standard. To attain the 2008 ozone standard, the SCAQMD must reduce NO<sub>x</sub> emissions in the year 2031 by 55% beyond projected emissions with all existing regulations in place. These required reductions must come on top of decades of stringent regulation of stationary sources by the SCAQMD and mobile sources by the CARB. EPA has recognized these regulations as generally the most stringent in the nation. 77 Fed. Reg. 12,674; 12,686 col. 3 (Mar. 1, 2012).

Locomotives represent a very significant source of NO<sub>x</sub> emissions in the South Coast Air Basin. In 2012, locomotives emitted more than 19 tons per day of NO<sub>x</sub>, which is more than all the NO<sub>x</sub>

emissions from the almost 270 largest stationary sources of NO<sub>x</sub> in the SCAQMD (“RECLAIM sources”), which includes virtually all NO<sub>x</sub> major sources as well as sources exceeding 4 tpy NO<sub>x</sub>. SCAQMD recently adopted requirements for these RECLAIM sources to reduce their NO<sub>x</sub> emissions by another 45% by 2023. Mobile sources, including locomotives, will contribute 79% of the NO<sub>x</sub> emissions in 2023 (without further rules). They will contribute about 77% in 2031. Thus it would be impossible to attain the NAAQS for ozone in 2023 and 2031 without significant further reductions from mobile sources. Therefore, it is critical that mobile sources contribute their “fair share” towards attaining the upcoming ozone standards.

CARB’s petition has proposed feasible standards for NO<sub>x</sub>, PM and other pollutants which can be implemented by 2025 for new locomotives. Assuming EPA completes a rulemaking in 2018, locomotive engine manufacturers will have seven years to develop and produce engines meeting the new standards. According to CARB, this is sufficient time to implement the new standards. Remanufactured locomotives would be subject to new standards beginning in 2023, but the standards are less stringent.

Moreover, locomotives emit substantial quantities of diesel particulate matter (DPM) which is a human carcinogen and identified by CARB as a “toxic air contaminant” under state law. The SCAQMD 2015 “Multiple Air Toxics Exposure Study” (“MATES IV”), concluded that DPM caused almost 70% of all the cancer risk due to toxic air contaminants in the South Coast Air Basin.

Importantly, locomotive emissions are concentrated not only along line-haul routes, but also in areas adjacent to railyards. These railyards tend to be located in environmental justice communities, where they expose residents to high levels of cancer-causing diesel particulate matter. Reducing particulate emissions from locomotives will help reduce carcinogenic emissions in environmental justice communities and throughout the district.

As noted above, the CARB petition asks for new standards to be implemented in 2023 and 2025. Therefore, any NO<sub>x</sub> emissions reductions from EPA’s new rules would come too late to help SCAQMD attain the 1997 ozone standard by 2023. Therefore, we urge EPA to consider whether these standards could be phased in and begin earlier than 2023. If possible, we urge EPA to require earlier phased-in implementation.

Section 213(a)(5) of the CAA requires EPA to regulate locomotive emissions. EPA has previously recognized that it must periodically update these regulations to make use of technology advances and better protect public health. 72 Fed. Reg. 15938, 15940 col. 3 (Apr. 3, 2007). We concur with CARB’s request that EPA respond to the petition this summer. EPA must respond to a petition for rulemaking within a “reasonable time.” A reasonable time is generally “weeks or months not years.” *In re Am. Rivers & Idaho Rivers United*, 372 F.3d 413, 419 (D.C. Cir. 2004).

Hon. Scott Pruitt, Administrator

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Finally, we strongly support CARB's request that the "Tier 5" standards, to be implemented for new locomotives by 2025, include a requirement that these locomotives be capable of operating in zero-emissions mode in designated areas. As stated by CARB, "use of on-board batteries can support zero-emission rail operation in sensitive areas, as well as cut fuel consumption and greenhouse gas emissions." These zero-emission technologies may be particularly important when locomotives are operating in railyards. Several years ago, CARB calculated cancer health risks from various railyards throughout the state. The San Bernardino yard was calculated to have a cancer risk to the maximally exposed individual of about 2500 in a million.<sup>1</sup> This is 100 times the risk allowed for a stationary source under AB 2588 and SCAQMD Rule 1402. Operation in zero-emissions mode could cut these risks — and risks at other railyards — to very little, without significantly impacting rail operations since battery-tender cars could easily be utilized at the railyards.

Of course, zero-emissions operation also reduces NO<sub>x</sub> and GHG emissions, which are critical to attaining the NAAQS and the state's GHG reduction goals.

SCAQMD stands ready to offer its technical expertise, data, and any other assistance to help EPA adopt and implement the CARB-proposed standards as soon as possible.

The SCAQMD appreciates U.S. EPA's consideration of this letter in strong support of CARB's petition. If you have any question or need further information, please contact me at 909-396-2100 or [wnastri@aqmd.gov](mailto:wnastri@aqmd.gov).

Sincerely,

Wayne Nastri,  
Executive Officer

WN:BB/pa

cc: Richard Corey, Executive Officer, California Air Resources Board

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<sup>1</sup> This risk would be even higher considering the 2015 OEHHA guidance changes.