California Environmental Protection Agency

Air Resources Board

Final Statement of Reasons for Rulemaking

Including Summary of Comments and Agency Responses

PROPOSED AMENDMENTS TO THE AIRBORNE TOXIC CONTROL MEASURE FOR IN-USE DIESEL-FUELED TRANSPORT REFRIGERATION UNITS (TRU) AND TRU GENERATOR SETS, AND FACILITIES WHERE TRUs OPERATE

Public Hearing Date: October 21, 2011
Agenda Item No.: 11-8-4

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State of California
AIR RESOURCES BOARD

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PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE AIRBORNE TOXIC CONTROL MEASURE FOR IN-USE DIESEL-FUELED TRANSPORT REFRIGERATION UNITS (TRU) AND TRU GENERATOR SETS, AND FACILITIES WHERE TRUs OPERATE

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I. GENERAL

The Staff Report: Initial Statement of Reasons for Proposed Rulemaking (Staff Report), entitled "2011 Amendments for the Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets, and Facilities Where TRUs Operate," released August 31, 2011, is incorporated by reference herein.

In this rulemaking, the Air Resources Board (ARB or Board) approved the adoption of amendments to the regulation affecting transport refrigeration units (TRU) and TRU generator sets (TRU gen sets). Collectively, TRUs and TRU gen sets shall be referred to as TRUs.[1] The amendments primarily provide model year (MY) 2001 through 2003 TRU engines that complied with applicable Low Emission TRU (LETRU) in-use performance standards by specified time periods, a one or two year extension from the more stringent Ultra-Low Emission TRU (ULETRU) in-use performance standards. This extension would serve to restore competitive fairness to those businesses that elected to comply with the regulation during 2008 through 2010, although other businesses opted to defer their compliance efforts given the United States Environmental Protection Agency's (U.S. EPA) delay in issuing ARB an authorization to enforce the regulation. The amendments also clarify manual recordkeeping requirements for electric standby-equipped TRUs, and ultimately require automated electronic tracking systems for such TRUs; establish requirements for businesses that arrange, hire, contract, or dispatch the transport of goods in TRU-equipped trucks, trailers, or containers (i.e., brokers, shippers, or receivers); and clarify several issues that were identified during the implementation of the regulation.

[1] Title 13, CCR section 2477 et seq. is known as the Transport Refrigeration Unit Airborne Toxic Control Measure and establishes in-use performance standards, recordkeeping, and facility reporting requirements for TRUs and TRU generator sets.

On August 31, 2011, ARB published a notice for an October 20, 2011 public hearing to consider the proposed regulatory action. The Staff Report was also made available for public review and comment beginning August 31, 2011. The Staff Report provides the rationale for the proposed amendments. The text of the proposed amendment to title 13, California Code of Regulations (CCR), section 2477 and the proposed adoption of sections 2477.1, 2477.2, 2477.3, 2477.4, 2477.5, 2477.6, 2477.7, 2477.8, 2477.9, 2477.10, 2477.11, 2477.12, 2477.13, 2477.14, 2477.15, 2477.16, 2477.17, 2477.18, 2477.19, 2477.20, and 2477.21 was included as an Appendix to the Staff Report. These documents were also posted on ARB's website for the rulemaking at http://www.arb.ca.gov/regact/2011/tru2011/tru2011.htm

On October 20, 2011, the Board conducted a public hearing and received oral and written comments. At the conclusion of the hearing, the Board adopted Resolution 11-35 that covered the proposed amendment of title 13, CCR section 2477 and the proposed adoption of sections 2477.1, 2477.2, 2477.3, 2477.4, 2477.5, 2477.6, 2477.7, 2477.8, 2477.9, 2477.10, 2477.11, 2477.12, 2477.13, 2477.14, 2477.15, 2477.16, 2477.17, 2477.18, 2477.19, 2477.20, and 2477.21 that were initially proposed by staff and described in the Notice of Public Hearing (45-Day Public Notice) and Staff Report, along with modifications suggested by staff in a document entitled "Staff's Suggested Modifications to the Original Proposed Amendments" that was distributed at the hearing and that was Attachment B to the Resolution.[2]

In accordance with Government Code section 11346.8, Resolution 11-35 directed the Executive Officer to adopt the proposed amendment to title 13, CCR section 2477 and to adopt new sections title 13, CCR sections 2477.1 through 2477.21 as proposed by staff and as modified in accordance with Attachment B to Resolution 11-35, to determine if additional modifications to the originally proposed regulation and incorporated certification procedure were appropriate, and if the Executive Officer so determined, to make the modified regulatory language available for public comment for a period of at least 15 days before taking final action to adopt the regulation. The Executive Officer was also directed to consider such written comments that were submitted during the public comment period, to make such modifications as may be appropriate in light of the comments received, or to present the regulations to the Board for further consideration if warranted in light of the comments.

Resolution 11-35 further directed the Executive Officer to prepare and approve written responses to comments received, including comments raising significant environmental issues, as required by Government Code section 11346.9, Public Resource Code section 21080.5(d)(2)(D), and the California Code of Regulations, title 17, section 60007, to determine whether there are feasible alternatives or mitigation measures that could be implemented to reduce or eliminate any potential adverse environmental impacts, to make findings as required by Public Resources Code

[2] This document was inadvertently identified as Attachment D to Resolution 11-35 at the October 21, 2011 public hearing, but the text of this document clearly indicates that it presents staff's suggested modifications to the originally proposed amendments to the regulatory text set forth in Appendix A to the Staff Report: Initial Statement of Reasons (released August 31, 2011).

section 21081 if the proposed amendments would result in one or more significant adverse environmental impacts, and to take final action to adopt the proposed amendment to title 13, CCR section 2477 and to adopt new sections title 13, CCR sections 2477.1 through 2477.21 as modified in the publicly noticed 15-day changes.

Subsequent to the hearing, staff proposed two sets of modifications to the regulatory text and incorporated certification procedures. The text of the first set of modifications to the originally proposed amendments was made available for a supplemental 15-day comment period by issuance of a "Notice of Public Availability of Modified Text." This Notice and the attachments thereto were mailed on February 28, 2012 to all stakeholders, interested parties, and to other persons generally interested in ARB's rulemaking requirements applicable to TRUs. The "Notice of Public Availability of Modified Text" listed the ARB website from which interested parties could obtain the complete text of the regulation that would be affected by the modifications to the original proposal, with all of the modifications clearly indicated. These documents were also published on ARB's website for this rulemaking http://www.arb.ca.gov/regact/2011/spcn11/spcn11.htm.

Three written comments were received during this first 15-day comment period.

The text of the second set of modifications to the originally proposed amendments was made available for a supplemental 15-day comment period by issuance of a "Notice of Public Availability of Modified Text." This Notice and the attachments thereto were mailed on June 15, 2012 to all stakeholders, interested parties, and to other persons generally interested in ARB's rulemaking requirements applicable to TRUs. The "Notice of Public Availability of Modified Text" listed the ARB website from which interested parties could obtain the complete text of the regulation that would be affected by the modifications to the original proposal, with all of the modifications clearly indicated. These documents were also published on ARB's website for this rulemaking http://www.arb.ca.gov/regact/2011/spcn11/spcn11.htm. One written comment was received during this second 15-day comment period.

After considering the comments received during both the first and the second 15-day comment period, the Executive Officer issued Executive Order R-12-007, adopting amendments to title 13, CCR section 2477 and adopting new sections title 13, CCR sections 2477.1 through 2477.21

This Final Statement of Reasons (FSOR) updates the Staff Report by identifying and providing the rationale for the modifications made to the originally proposed regulatory text, including non-substantial modifications and clarifications made after the close of the first and second 15-day comment periods. This FSOR also contains a summary of the comments received by the Board on the proposed amendments and the modifications and ARB's responses to those comments.

Fiscal Impacts of Proposed Changes.

Pursuant to Government Code sections 11346.5(a)(5) and 11346.5(a)(6), the Executive Officer has determined that the regulatory action will not affect any federally funded State agency or program, but may create savings to the California Department of Corrections. The Department of Corrections operates refrigerated trucks and trailers to service correctional facilities, and owns three TRUs that complied with the LETRU standards on time and are therefore eligible for the ULETRU extension which may produce cost savings of $582 in FY 2015/16. The California Department of Corrections also operates 14 TRUs which use electric standby as the compliance method, which may produce cost savings of $32,200 split between FY 2012/13 and FY 2013/14. Staff is unaware of any other state agency being affected by the amendments. There would be no additional cost impacts to ARB.

The amendments may impact local school districts and municipalities that own and operate TRUs, by providing cost savings dependent on the number of TRUs and compliance method utilized. The San Marcos School District operates two TRUs that are eligible for the ULETRU extension, which may produce cost savings of $388 in FY 2015/16. In addition, 65 TRUs with the electric standby option are operated by the Elk Grove Unified School District (4 TRUs), the Kern High School District (1 TRU), the San Diego Unified School District (2 TRUs) and the Los Angeles Unified School District (58 TRUs), which may produce cost savings of $149,500 split between FY 2012/13 and FY 2013/14.

Pursuant to Government Code sections 11346.5(a)(5) and 11346.5(a)(6), the Executive Officer has determined that this regulatory action will not create costs or mandates to any local agency or school district, whether or not reimbursable by the state pursuant to part 7 (commencing with section 17500), division 4, title 2 of the Government Code, or other non-discretionary costs or savings to local agencies.

Consideration of Alternatives.

ARB staff considered three alternative strategies to the proposed rulemaking action but ultimately rejected those alternatives after determining that those alternatives would not be more effective in reducing emissions than the proposed rulemaking action. This section discusses each of the alternatives and provides reasons for rejecting those alternatives.

The first alternative was to not amend the existing regulation. This alternative would not address the need to clarify the current requirements, would not take any actions to improve the compliance rates for the existing regulation, and would not allow the Board to consider modifications that stakeholders have requested during implementation to streamline implementation of the ATCM and to improve clarity. This alternative was rejected because it would adversely delay the reductions of TRU emissions near distribution centers where TRUs congregate, because enforcement efforts would be

less efficient, because it would not provide consideration to owners of pre-MY 2003 TRUs who complied with the LETRU Standards by December 31, 2009 or December 31, 2010, and because the Executive Officer would not have the flexibility to address delays beyond the control of the owner by extending the compliance date up to four months.

The second alternative considered was to suspend the original regulation and rely on existing federal and State non-road/off-road engine emission standards to reduce diesel PM emissions and public health risks near distribution centers. An emissions analysis prepared in the original staff report compared the original regulation to the then-pending Tier 4 new engine emissions standards and shows a dramatic difference in emission reductions between these two options (ARB, 2003). This alternative was rejected because ARB's 2003 analysis, updated for the 2011 TRU amendments, shows that the goal of reducing diesel PM emissions by 85 percent, and the corresponding potential cancer risks, would not be achieved by the 2020 deadline. Furthermore, the Tier 4 final new engine standards for <25 hp engines does not require PM aftertreatment control. Diesel PM emissions from these new engines will remain 10 times greater than the >25 hp engines.

The third alternative considered was to delay compliance with the ULETRU in-use standard by one, two, or three years for MY 2004 and newer TRUs, extending the operational life of TRU engines from the current seven years to eight, nine, or ten years. Industry requested this alternative at the November 2010 Board Hearing and the Board directed staff to evaluate this proposal in consideration of emission and public health impacts. This alternative was rejected because staff's updated emissions inventory and public health impact analysis indicated that the public health risk at the seven-year operational life still resulted in potential cancer risk levels of concern in communities near facilities where TRUs congregate. Therefore, relaxing the in-use requirements by delaying compliance and extending the operational life of TRU engines would only increase this risk and likely exacerbate concerns regarding elevated risk levels in nearby communities. In addition, owners of older TRUs (e.g. MY 2001 and older, MY 2002, and MY 2003) have been required to meet the in-use standards by 2008, 2009, and 2010, respectively, using a seven-year operational life, so there would be fairness issues if the operational life was changed. Also, retrofit device manufacturers that have invested significant resources verifying diesel particulate filters would be left with no market for one or more years; this would most likely force them to abandon the TRU market. DPFs are a lower-cost compliance option and their total non-availability may cause the cost of other compliance options to increase. Additionally, the TRU's PM emissions reductions also contribute to ARB's 2014 State Implementation Plan for meeting the federal PM 2.5 standard, so any delayed implementation could jeopardize those commitments and result in loss of federal highway funding.

For the reasons set forth in the Staff Report, in staff's comments and responses at the hearing, and in this FSOR, the Board has determined that no alternative considered by the agency or brought to the attention of the agency would be more effective in carrying

out the purpose for which the regulatory action was proposed or would be as effective and less burdensome to affected private persons than the action taken by the Board.

II. MODIFICATIONS MADE TO THE ORIGINAL PROPOSAL

As previously discussed, at the October 20, 2011 public hearing, the Board adopted Resolution 11-35 which directed the Executive Officer to adopt the amendments initially proposed by staff, and to determine if additional modifications to the originally proposed amendments were appropriate, and if the Executive Officer so determined, to make the modified regulatory language available for public comment for a period of at least 15 days prior to taking final action to adopt the amendments.

Subsequent to the hearing, staff proposed two sets of modifications to the regulatory text. The first set of modifications were explained in detail in the Notice of Public Availability of Modified Text that was issued for a 15-day public comment period that began on February 28, 2012, and ended on March 14, 2012. The second set of modifications was explained in detail in the Notice of Public Availability of Modified Text that was issued for a 15-day public comment period that began on June 15, 2012 and ended on July 2, 2012. In order to provide a complete FSOR for this rulemaking, the most significant modifications and clarifications are summarized below. Sections A through C summarize changes made pursuant to the first 15-day public comment period, and Sections D and E summarize changes made pursuant to the second 15-day public comment period.

A. Requirements for Owners or Operators [13 CCR section 2477.5]

1. In section 2477.5(g)(3), subparagraph (C) was added to provide an additional means to submit an application to the Executive Officer electronically through ARB's ARBER website.

2. In section 2477.5(j)(1)(C), subparagraph 3. was added to provide an additional means to submit an application to the Executive Officer electronically through ARB's ARBER website.

3. In section 2477.5(k)(1)(A)6., subparagraph c. was added to provide an additional means to submit an application to the Executive Officer electronically through ARB's ARBER website.

4. In section 2477.5(k)(1)(A), subparagraph 7. was added to require TRUs and TRU gen sets to be registered in ARBER under section 2477.5(e) if the owner chooses to apply for a compliance extension because there is no suitable compliance technology available. Registration provides a way to track these units in ARBER while a compliance extension is in effect, and provides a mechanism for an inspector to check ARBER and determine that a citation for noncompliance should not be issued if an

extension is in effect. In addition, registration provides for verification that compliance has been achieved after the extension has expired.

5. In section 2477.5(l)(1)(C)5., subparagraph c. was added to provide an additional means to submit an application to the Executive Officer electronically through ARB's ARBER website.

6. In section 2477.5(m)(1)(G), subparagraph 3. was added to provide an additional means to submit an application to the Executive Officer electronically through ARB's ARBER website.

7. In section 2477.5(n)(1)(E), subparagraph 3. was added to provide an additional means to submit an application to the Executive Officer electronically through ARB's ARBER website.

B. Requirements for TRU and TRU Gen Set Original Equipment Manufacturers [13 CCR section 2477.13]

1. Section 2477.13(a)(3) has been modified to require the original equipment manufacturer (OEM) to provide a written disclosure to be shipped with the TRU or TRU gen set if a TRU or TRU gen set is equipped with a flexibility engine. The modification also requires the OEM to instruct the dealer that sells the TRU or TRU gen set that they are required by California law to notify the ultimate purchaser of this disclosure prior to sale, and to pass the OEM-provided written disclosure to the ultimate purchaser at point of sale. The originally proposed amendment required the OEM to provide a written disclosure to the ultimate purchaser prior to sale of a TRU or TRU gen set that is equipped with a flexibility engine. An OEM provided comments during the 45-day public comment period that they do not sell TRUs and TRU gen sets directly to most ultimate purchasers and therefore do not have an opportunity to directly provide a written disclosure to most ultimate purchasers prior to sale. Instead, the OEM's dealers sell TRUs and TRU gen sets to most ultimate purchasers and would therefore have direct contact with these ultimate purchasers and be able to provide the required notification. This modification therefore accommodates OEMs such as the commenter.

2. New sections 2477.13(c)(2)(D) and 2477.13(c)(3)(D) have been added, which allow TRU or TRU gen set OEMs to request Executive Officer approval of an alternative web-based, on-line look-up system to provide registration information to TRU and TRU gen set owners. The Executive Officer must find the alternative to be at least as effective as the originally proposed amendment, which required the OEM to provide a registration information document with each new TRU or TRU gen set. An OEM suggested this approach during the 45-day public comment period

because its system is not compatible with the originally proposed amendment.

C. Requirements for TRU, TRU Gen Set, and TRU-Equipped Truck and Trailer Dealers [13 CCR section 2477.14]

1. Section 2477.14(a)(1) was modified to require dealers to provide a print-out of the registration information from the OEM's web-based look-up for a new TRU or TRU gen set if the OEM does not provide the registration information document with the new TRU or TRU gen set. Dealers would need to obtain approval from the Executive Officer for the alternative under section 2477.13(c)(2)(D) to provide registration information through a web-based look-up.

2. Section 2477.14(a)(2) was modified to require dealers to provide a print-out of the registration information from the OEM's web-based look-up for a new replacement engine or rebuilt replacement engine if the OEM does not provide the registration information document with the new replacement engine or rebuilt replacement engine. Dealers would need to obtain approval from the Executive Officer for the alternative under section 2477.13(c)(3)(D) to provide registration information through a web-based look-up.

3. New section 2477.14(a)(4) has been added to require TRU and TRU gen set dealers to notify the ultimate purchaser, prior to sale, of the OEM's disclosure that a new TRU or TRU gen set is equipped with a flexibility engine. The modification also requires dealers to pass the OEM's written disclosures, under section 2477.13(a)(3), that the TRU or TRU gen set is equipped with a flexibility engine, to the ultimate purchaser at point of sale. This requirement is related to and consistent with the modification described in B.1., above, and therefore meets the Board's direction to propose additional conforming modifications for comment and adoption.

D. Exemption for Noncompliant, Non-Operating Refrigerated Railcar TRUs Passing Through California, if Certain Conditions and Criteria are Met [13 CCR section 2477.3]

Comments were received regarding noncompliant TRUs on refrigerated railcars that travel through California without operating. For example, railroads occasionally need to move such noncompliant TRUs on empty refrigerated railcars from Arizona to Oregon or Washington. Allowing such noncompliant TRUs to pass through California if they are not operated would avoid having to route them around California borders over a much longer and more costly route. These TRUs are already equipped with electronic tracking systems that can be used to monitor the TRU location, date and time using global positioning systems (GPS), and automated recorders to capture the engine run status (e.g. "engine

on" or "engine off"). Existing trackside readers and data acquisition and storage systems can collect this data and use it to demonstrate that the TRU engines never operate while inside of California.

Subsection (e) is proposed to be added to 13 CCR, section 2477.3 to provide an exemption for such TRUs, provided the Executive Officer has previously approved a written compliance plan, submitted by the railway carrier. The written compliance plan would clearly identify the monitoring, recordkeeping, and reporting procedures that the railway carrier would implement and utilize to ensure noncompliant TRUs on refrigerated railcars will not operate at any time while in California. The compliance plan would include, without limitation: the procedures for tracking and recording routes and dates of travel within California of each noncompliant TRU, information identifying each noncompliant TRU, a description of the automated monitoring and recordkeeping system for reporting the TRU "engine on" and "engine off" status, and the procedure for expeditiously reporting violations observed or discovered by the railway carrier to ARB. A statement would be required, signed by an authorized railroad representative, declaring that the railway carrier agrees to be bound by the compliance plan. Compliance verification records would be maintained for three years and would be provided to authorized enforcement personnel upon request.

E. Add an Exemption for a Railway Carrier Exempting Them from the Owner or Owner/Operator Requirements of Section 2477.5 for Any TRU or TRU Gen Set that is Not Owned by the Railway Carrier [13 CCR section 2477.3(f)]

The TRU ATCM's in-use performance standards in section 2477.5 apply to owners or operators of TRUs that operate a TRU or TRU gen set in California. The 2011 TRU Amendments added language to the definition of "operate" to make it clear that a TRU or TRU gen set that is operable (capable of being operated) shall be considered to operate if it is in California.

A railway carrier may be under contract to perform some activities that presently fall under the definition of "operate", such as fueling, monitoring, or keeping the unit operating; and, may perform these activities on behalf of the owner to ensure safe transit of their customers' perishable goods. For example, if there is a derailment, or other kind of delay in movement, the railway carrier may monitor the TRUs' fuel levels and refuel them if necessary. But railway carriers do not load or unload perishable goods being transported and do not set the equipment operating programs of these third party TRUs.

Staff is proposing to add section 2477.3(f), to exempt a railway carrier from the owner or owner/operator requirements of section 2477.5 for refrigerated railcar TRUs that are owned by third parties, where the railway carrier is only moving the refrigerated equipment for a customer. This exemption would not apply if the rail carrier is leasing the TRU, in which case the lessee requirements of section 2477.12 would apply to the rail carrier. This exemption would also only

apply if the railway carrier or its agent is only fueling, monitoring to assure proper operation, keeping in operation, arranging repairs at the request of the owner, or restarting the TRU or TRU gen set engine after an unscheduled shut-down or repair, and is not performing any of the other activities listed under the definition of “operate.”

It is not staff’s intent to exempt rail carriers from the freight broker and freight forwarder requirements of section 2477.8 if the rail carrier is the business entity that hires, contracts for, or dispatches the transport of perishable goods in TRU-quipped or TRU gen set-equipped trucks, tractor-trailers, shipping containers, or railcars on California highways or railways. For example, if a rail carrier, its parent company, or subsidiary arranges drayage at the ends of the rail leg of perishable food transport, the freight broker or freight forwarder requirements of section 2477.8 would apply to the rail carrier.

F. OTHER MINOR CHANGES

Staff also made various minor modifications to the regulatory text to remove typographical errors and to improve clarity. These modifications were described in the first 15-day notice and are set forth below.

1. Exemptions [13 CCR section 2477.3]

    a. Subsection (d) included an incorrect reference to “subsection 2477.5(o)” and has been corrected to read “subsection 2477.5(j).”

2. Requirements for Owners or Operators [13 CCR section 2477.5]

    a. In section 2477.5(a)(2), a double underline was added to the subparagraph outline heading “(A)” because the underline was omitted in the original version.

    b. In section 2477.5(b)(3), a double underline was added to subparagraph outline headings “(A)” and “(B)” because the underline was omitted in the original version.

    c. In section 2477.5(b)(4)(A), a double underline was added to subparagraph outline headings “1.” and “2.” because the underline was omitted in the original version.

    d. In section 2477.5(b)(5)(B), a double underline was added to subparagraph outline heading “1.” because the underline was omitted from the original version.

e. In section 2477.5(d)(3)(A), the subparagraph numbering was corrected by deleting the numerical outline headings “(1)” through “(6)” and replacing them with numerical outline headings “1.” through “6.” because the wrong outline hierarchy was used for this list.

f. In section 2477.5(d)(3)(B), the subparagraph numbering was corrected by deleting the numerical outline headings “(1)” through “(7)” and replacing them with numerical outline headings “1.” through “7.” because the wrong outline hierarchy was used for this list.

g. In section 2477.5(e)(1)(B), a double underline was added to the subparagraph outline heading “1.” because the underline was omitted from the original version.

h. In section 2477.5(g)(2), the second instance of subparagraph (E) was corrected to be subparagraph (F).

i. In section 2477.5(h)(1), “Owner/Operator” was capitalized (lowercase letters “o” was replaced with uppercase letters “O”) to be consistent with section title formatting requirements.

j. In section 2477.5(h)(1)(D), at the end of the last sentence, a comma and space were placed between “2477.5(e)” and “2477.5(f)”.

k. In section 2477.5 (j)(1)(G), the numbering of subparagraph 3. was corrected to be subparagraph 2.

3. Requirements for California-Based Shippers [13 CCR section 2477.10]

a. In section 2477.10(a), a duplicate “that” was deleted.

4. Requirements for California-Based Receivers [13 CCR section 2477.11]

a. In section 2477.11(a), a duplicate “that” was deleted.

5. Requirements for TRU and TRU Gen Set Original Equipment Manufacturers [13 CCR section 2477.13]

a. In section 2477.13(b)(1)(B), a double underline was added to the subparagraph outline heading “3.” because the underline was omitted from the original version.

b. In section 2477.13(b)(2)(C), subparagraph heading number "9." was added because it had been incorrectly struck out in the earlier version.

c. In section 2477.13(d), change the word "disclose" to "disclosure."

G. Non-Substantial Modifications

Subsequent to the first and second 15-day public comment periods mentioned above, staff discovered that it had not correctly cited the titles of documents cited as references for this rulemaking, and had also erroneously included an ARB staff person as a participant in a telephone conference call that also serves as a reference for this rulemaking. Staff has therefore modified these references (all of which are cited in the Staff Report) to correct these oversights as follows:

1. (ARB, 2008a). California Air Resources Board, TRU Advisory 08-01. The previously cited title, "Using Model Year to Determine TRU ATCM Requirements," has been corrected to "Using Model Year to Determine TRU ATCM Compliance Date."

2. (ARB, 2008e). California Air Resources Board, TRU Advisory 08-05. The previously cited title, "Using Rebuilt Engines for TRU ATCM Compliance," has been corrected to "Using Rebuilt/Remanufactured Engines for TRU ATCM Compliance."

3. (OEHHA, 2009). The previously cited title "The Air Toxics Hot Spots Program Risk Assessment Guidelines: Part II [Technical Support Document for Describing Available Cancer Potency Factors.] May, 2009" has been corrected to "Technical Support Document for Describing Available Cancer Potency Factors: Methodologies for derivation, listing of available values, and adjustments to allow for early life stage exposures."

4. (Thermo King, 2011). ARB staff person Richard Boyd was erroneously listed as a participant of three telephone conference calls, and his name has been removed from that list of participants to those telephone calls.

Staff also modified a reference listed at the end of Appendix C of the Staff Report.

1. (USEPA, 2008). The previously cited title, "NONROAD Model (Nonroad engines, equipment and vehicles). Model version 2008a" has been corrected to "NONROAD 2008a Model. Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling, NR-005d (EPA-420-R-10-016, July 2010)." United States Environmental Protection Agency. Retrieved on June 5, 2011 from http://www.epa.gov/oms/nonrdmdl.htm"

The above described modifications constitute non-substantial changes to the regulatory text because they more accurately reflect the titles of documents or more accurately reflect participants to telephone conference calls, but do not materially alter the requirements or conditions of the proposed rulemaking action.

III. SUMMARY OF COMMENTS AND AGENCY RESPONSES

A. Responses to Comments Received During the 45-Day Comment Period and at the Public Hearing

Written comments were received during the 45-day comment period in response to the October 20, 2011 public hearing notice, and written and oral comments were presented at the public hearing.

Table 1, below, lists the organizations and individuals that provided comments.

Table 1. List of Individuals and Businesses Submitting Written and Oral Comments During the 45-day Comment Period and at the Public Hearing

Commenter Name	Affiliation	Identification Code
Clabaugh, Jim	Individual	JC
Lund, Kenneth	Allen Lund Company	ALC
Voltmann, Robert	Transportation Intermediaries Association	TIA
Brezny, Rasto	Manufacturers of Emission Controls Association	MECA-RB
Kubsh, Joe	Manufacturers of Emission Controls Association	MECA-JK
Gilliland, Kenneth	Western Growers Association, Agricultural Council of California, California Association of Winegrape Growers, California Citrus Mutual, California Farm Bureau Federation, California Grape and Tree Fruit League, California Pear Growers Association, California Poultry Association, California State Floral Association, Grower-Shipper Association of Central California, Grower-Shipper Association of Santa Barbara and San Luis Obispo Counties, Neisi Farmers League, Pacific Egg and Poultry Association, Ventura County Agricultural Association, and Western Agricultural Processors Association	WGA
Lyons, James	Sierra Research, Inc., California Trucking Association	SRI

Yip, Kathleen	Natural Resources Defense Council, Union of Concerned Scientists, East Yard Communities for Environmental Justice, Environmental Health Coalition, Coalition for Clean Air, American Lung Association, Central Valley Air Quality Coalition, Sierra Club, Bayview Hunters Point Community Advocates	NRDC
Shimoda, Chris	California Trucking Association	CTA
Tunnell, Michael	American Trucking Associations	ATA
Long, Bryan	Foster Poultry Farms and TRU Industry	FF
Shuemake, Mike	Central Valley Trailer Repair and CTA	CVTR
Cramer, Jon	Certified Freight Logistics, Inc.	CFL
Miller, Dan	Save Mart	SM
Smith, Patrick	Harris Ranch	HR
Babineau, Thomas	Rypos	RTB
Bransfield, Peter	Rypos	RPB
Bush, Kara	California Grocers Association	CGA
Holmes-Gen, Bonnie	American Lung Association	ALA
Jack, Crystal	Nisei Farmers League, California Citrus Mutual, California Grape and Tree Fruit League, Western Agricultural Processors Association	NFL
Maddox, Bill	Carrier Transicold	CT

Set forth below is a summary of each comment regarding the regulatory action and the agency response to that comment, including an explanation of how the regulation was changed to accommodate the comment or the reason(s) for not making a change to the regulation. Comments not involving objections or recommendations specifically directed toward this rulemaking or to the procedures followed by ARB in this rulemaking are not included.

Availability and Reliability of Retrofits

1. **Comment**: TRU retrofit devices are a proven technology based on the same types of filter designs as have been commercialized in other off-road and on-road applications. We believe there is an effective plan in place for the sufficient supply of Level 3 filters to meet the expected demand for these devices. Currently, there are two Level 3 VDECS available for TRU engines. MECA members are in the process of verifying with ARB additional retrofit devices that can meet ULETRU requirements. These units are extensions of the current LETRU designs, with only slight mechanical and filter medium modifications required in order to achieve the higher efficiency required for ULETRU performance. They will incorporate all of the durability improvements identified during the LETRU program. And currently, there are over 5,000 LETRU devices out in the field demonstrating excellent results. The latest versions of ULETRU demonstration units have accumulated thousands of hours, also with very good reliability, and fuel consumption impacts of less than about five percent. Although early designs of these technologies have identified some issues, these

were easily addressed through redesigns. Currently, our members' experience with TRU retrofits has been excellent and consistent with what we've seen with other retrofit devices -- fleets that have comprehensive maintenance programs for their engines and their devices get excellent performance from their retrofit units. We urge the Board to continue to support the resources for the verification process in order to ensure that the Level 3 devices that are in the pipeline get through as fast as possible. (MECA-RB, MECA-JK)

We are one of the VDECS suppliers. We've been developing and supplying electrically regenerated filters for California's market for over ten years. We have built an installation and support network that covers the western United States and Mexico. We have supplied over 5,200 filters to the field. And collectively these filters have accumulated over 20 million operating hours and removed 215 tons of PM, at a current rate of 90 tons per year. Independent lab test data shows the fuel consumption increased 4.8 percent with our filter system. The general success of the program didn't come without mistakes, but we moved quickly to voluntarily exchange 100 percent of the units, whether they were having problems or not, and we have not charged a single dollar for any repair or replacement. We have been completely transparent with our customers and ARB staff regarding issues and recovery plans. ARB staff immediately got involved and has been great about addressing these issues when notified by us or industry that there were problems. Our efforts to fix the issues have worked. Our mean time between repairs has improved. Our failure rate was a high of 6.2 percent for a short period, but overall, with 5,200 units in the field, we had 318 failures. We are now down to a 3.7 percent failure rate. While that is still unacceptable, the operators have worked with us to resolve problems and educated themselves as part of the solution. Today, 95 percent of the failures are due from the engine side not providing quality electricity to the filter. If they use the recommended parts - the recommended high-efficiency alternator, belts, and pulleys with the recommended belt tensioning - we have a reliable system. VDECS are not mufflers – they are sophisticated pieces of equipment. (RTB)

Agency Response: ARB is committed to thoroughly evaluating VDECS through the Verification Procedure[3] to confirm emissions reductions and assure they are reliable. We complete the verification evaluations as expeditiously as possible, using our available resources. We continue to monitor their use in the field and encourage operators to report to us if they believe that reliability or safety issues need to be resolved. If issues arise, we coordinate with the VDECS manufacturer and affected TRU owners to make sure they are expeditiously resolved.

2. **Comment:** Carriers have expressed dissatisfaction with retrofits due to maintenance and operational issues. (ATA)

[3] Verification Procedure, Warranty, and In-Use Compliance Requirements for In-Use Strategies to Control Emissions From Diesel Engines, under title 13 California Code of Regulations, sections 2700-2710.

In 2010, Foster Farms invested approximately $900,000 on filters to retrofit our refrigerated trailers to gain compliance with California regulations. During the past 11 months, we've experienced 41 fuel pump failures on our 200 filter units. Our current failure rate of fuel pumps on non-filter units is approximately two percent. In addition, we have experienced an increase in fuel consumption, which we attribute to the filters. Equipment failure to a refrigerated carrier can be one of their worst nightmares. The loads are often valued at over $100,000. If failure happens while in transit, the TRU shuts down and our customers could reject the load. The food safety issue is our number one concern. We believe we only have one viable option, and that is to repower. The ULETRU filter will not be a viable option due to total operating cost, filter product reliability, and importantly, food safety. (FF)

We're concerned with the retrofit device that is approved today. This device requires a shut-down of equipment once every eight hours for 30 to 40 minutes. Also it's putting a strain on that piece of equipment because of the electronic side of it. We're concerned because our customers put a temperature recording devices in the trailer to monitor the temperature during transport. When we deliver, they read that device and can refuse to accept the load if the temperature has exceeded 40 degrees. Then we have to buy the rejected load. We're very concerned that this retrofit device will shut the TRU down and it won't start again, resulting in temperature spikes and potential load damage claims. (CFL) Originally, we tried to get to 85 percent compliance (Level 3) instead of the Level 2 that was required at the time; but, they weren't practical for our operation, so we had to go back to Level 2. There were two options for us: retrofit or engine replacement. Engine replacement was approximately 50 percent higher cost, so we chose to retrofit. We retrofitted 49 units at a cost of approximately $300,000. In 14 months of operation, we had the following failures: 51 electronic control units, 104 percent failure rate; 30 particulate filters, 61 percent failure rate; 44 alternators, 90 percent failure rate; 35 batteries, 73 percent failure rate; six engines, twelve percent failure rate. In all of our years of operation, we have never replaced an engine. These failures caused down time and required emergency action to maintain temperature control for food safety. We have a system in our trailers called temperature tracker which gives us real-time readings. When a TRU goes down and the ambient temperatures are 90 degrees and above, within an hour the internal trailer temperatures are 65 degrees. Our product has to be delivered at 40 degrees or less. Our TRUs will be out of compliance soon unless the rule is extended. If not extended, they will have to be retrofitted for 85 percent particulate reduction. I'm very doubtful that the technology will be available for 85 percent particulate reduction, considering the failures we experience with 50 percent particulate reduction. (HR)

Agency Response: ARB shares the commenter's concerns regarding potential VDECS failures that could cause food safety issues and damages. We have incorporated rigorous field demonstration requirements into the verification

protocols for VDECS used on TRUs to ensure VDECS are sufficiently robust for the TRU application.

By law, VDECS must only be installed on engines and applications that meet the terms and conditions of the verification Executive Order. TRU owners that choose VDECS need to be aware that these systems require careful compatibility assessment to ensure a good match between the VDECS and engine. TRU engines need to have been well-maintained and in good condition at time of retrofit. After installation, engine maintenance is critical and greater operator vigilance over the VDECS is necessary. We provide training for operators to ensure they understand that choosing to comply with the in-use requirements by retrofitting with a VDECS means that TRU operations may be different than they were previously. Each of these considerations is expanded upon below.

Engine condition at time of retrofit must be assessed because engine emissions increase over time due to wear on emissions-related components and lube oil consumption increases with age. Fuel injector deposits can build up and compromise the fuel spray pattern in the combustion chamber. Also, fuel injector leakage increases and fuel pumps deliver less pressure as they age.

Manufacturers of VDECS for TRUs set limits on lube oil consumption and require injector tips to be replaced at time of retrofit to ensure good fuel spray pattern and a lower soot loading rate. If a fuel pump is close to the end of its life, replacing old fuel injectors may inadvertently cause the fuel pump to fail sooner than it would have otherwise, because the fuel pressure load on the pump may be greater with new injectors than it was with old, leaky out-of-specification injectors.

Electrically regenerated VDECS require consistent, high-quality electric power. One VDECS manufacturer (Rypos) initially recommended over-sized, high-quality alternators, alternator belts and pulleys, and batteries and offered these high-quality components, which are compatible with their systems. But, when many customers ignored the recommendation and subsequent failures occurred, they began including these parts in their installation kits. Alternatively, when TRU fleets prefer to purchase these parts at fleet discount rates through the TRU OEM, Rypos requires proof that they are installed as a condition of warranty coverage. The more robust systems have reduced failure rates.

After retrofitting is completed, the engine's fuel injection system must be maintained to continue to perform within the engine manufacturer's specifications, air filters must be maintained, and intake and exhaust valves must be properly adjusted. If the operator fails to complete the recommended emissions-related engine maintenance, the soot loading rate increases and the VDECS may be unable to control exhaust backpressure, which would then affect engine performance and reliability. The operator must continue good

maintenance practices and pay attention to the VDECS backpressure monitoring system and respond appropriately to system warning notices.

The commenter's reference to a VDECS that requires a 30- to 40-minute shut-down every eight hours is much greater than we have seen in actual use for TRUs. The only Level 3 DPF used in trailer TRUs that requires shut-down to regenerate the filter is the Huss MK 50 filter, which regenerates in ten minutes, every 10 hours. The greater regeneration times referred to by the commenter apply to much larger Huss filters that are used on off-road equipment, not TRUs. A ten minute shut-down every 10 hours should not cause an unacceptable temperature increase for most TRU applications. To date, none of the TRU operators that have HUSS filters have reported any such issues to ARB.

The commenter expressed concern about the engine having to shut down to regenerate and the potential failure to re-start. Since the October 21, 2011, Board hearing, the Rypos DPF/ULETRU (Level 3) VDECS was verified, which does not require the engine to shut down to regenerate.

If a TRU owner does not believe the VDECS compliance option provides satisfactory reliability or engine shut-down time is unacceptable, they may choose an alternative compliance option, such as engine repower or unit replacement.

3. **Comment:** There is only one ULETRU compliance option on the market, which is to retrofit with a filter. There is no way to change our engine and comply with the ULETRU component. The repower compliance option does not meet ULETRU, so all that does is restart the compliance clock again and seven years later we have to deal with compliance again. (CVTR, SM)

We would certainly welcome a "one-and-done" concept. (HR)

For the vast majority of TRU operators, there is currently no "one and done" compliance solution. Retrofits, which were previously touted as the most likely in-use compliance approach, have, for the most part, not been able to meet operational demands. With new ULETRU compliance requirements scheduled to take effect this year, retrofit options are currently limited to one system which requires the refrigeration system to shut down during filter regeneration (which can be an issue when transporting perishable goods). As a result, compliance is being achieved primarily through engine repowers or TRU replacements. Both of these options have resulted in significantly higher compliance costs which are expected to increase even more when TRU engines meeting the Tier 4 final emissions standards (or ULETRU compliant) become available in 2013. (ATA)

Agency Response: Going forward, model year 2004 and newer trailer TRU engines must meet ULETRU. When a TRU engine meets ULETRU, there are no

further in-use standard requirements, which is what the commenter refers to by "one-and-done."

Compliance options were discussed in the Executive Summary and Chapter II of the Staff Report. Further discussion is provided below in the context of "one-and-done" and compliance option availability, going forward.

Retrofitting with a Level 3 VDECS, which meets ULETRU, is a "one-and-done" compliance solution. The Huss MK 35 and MK 50 DPFs are Level 3 DPFs and were conditionally verified on July 2, 2010, while extensive field demonstrations were completed, and final approval occurred on August 22, 2011. The Huss MK 35 and MK 50 VDECS have been verified for use on all TRU engine models. The Rypos DPF/ULETRU is also a Level 3 DPF and was fully verified on December 12, 2011. This DPF has been verified for all single-temperature Thermo King and Carrier Transicold models. Single-temperature TRU models refrigerate a single cargo space to a set-point temperature and make up approximately 80 to 85 percent of the TRU market. A third VDECS manufacturer is currently working to obtain verification of a Level 3 DPF that does not require engine shut-down during regeneration.

Using an electric standby-equipped TRU, hybrid electric TRU, or hybrid cryogenic temperature control system in a way that eliminates the diesel engine operation at nonretail facilities and limits diesel engine operation to less than 30 minutes at retail delivery points is a compliance option that meets ULETRU and is therefore also a "one-and-done" compliance strategy.

Unit replacement is also a compliance option, albeit more expensive, that may be appropriate for higher use TRUs that are near or beyond their useful lives and need to be replaced for economic and reliability reasons. New 25 to 50 horsepower engines manufactured for installation in new TRUs after January 1, 2013, must meet the Tier 4 final emissions standards, which meet ULETRU. Replacing a noncompliant unit with a new unit that is equipped with an engine that meets ULETRU is a "one-and-done" compliance strategy. Replacing a noncompliant unit with a new unit that is equipped with an engine that meets the current Tier 4 interim new engine standard would not meet ULETRU and would therefore need to be retrofitted with a Level 3 VDECS by December 31st of the seventh year after the engine's model year. At that point in time, however, the age of the trailer would be near 14 years, so the chassis undercarriage may be worn out, and the van insulation and door seals would be degraded to the point that the trailer may need to be retired due to poor operating economics.

The commenter correctly notes that keeping an in-use TRU in compliance by repowering with a new replacement engine that meets the current Tier 4 interim emission standards would not meet ULETRU and would therefore need to be retrofitted with a Level 3 VDECS by December 31st of the seventh year after the replacement engine's model year. At that point in time, however, the age of the

trailer and refrigeration system would be approaching 14 years, so in addition to the previously-discussed trailer deterioration issues, the efficiency of the refrigeration compressor, evaporator and condenser coils would have deteriorated significantly and the trailer would likely need to be retired due to poor operating economics. If an owner finds the economics of engine repowering to be unfavorable for its business plan, then the other compliance options discussed above are available for consideration.

Enforcement Issues

4. **Comment**: Our members estimate that less than 40 percent of the TRUs that have been impacted by this regulation are in compliance. And that's why we urge the Board to continue to support the enforcement program to ensure that those that have chosen to comply are not financially disadvantaged in the marketplace. Going forward, we urge the Board to continue to provide sufficient resources to these programs to enable the agency to maintain a verified retrofit technology portfolio that provides end-users with a variety of proven, cost-effective, retrofit options from a number of suppliers and enforcement of a level economic playing field for end users. Our members experience has shown that market adoption by fleets is heavily influenced by the regulatory deadlines and few if any operators elect to comply early. LETRU systems were available in mid-2008; however, minimal compliance activity was experienced even 60 days prior to the actual compliance date. (MECA)

Agency Response: Staff agrees and the Staff Report discusses that compliance rates are unacceptably low for TRUs that have passed a compliance date. We are enforcing the TRU ATCM to maintain a level playing field. We routinely send notices to TRU owners reminding them of approaching compliance deadlines and notifying noncompliant owners that they may be cited and penalized if they are found to be operating noncompliant TRUs in California.

5. **Comment**: The compliance rate, which was presented last November (2010) was around 90 percent, from actual check points on the road. And now it's being presented as 60 percent. I think that 60 percent is for all affected vehicles, which includes out-of-state carriers and the number of units involved. I believe that the actual California compliance for those people that are operating in California is much, much higher than that. (CVTR)

Agency Response: The Staff Report discusses compliance rates for engines that have passed a compliance deadline. Those compliance rates exclude TRUs that are in compliance because they have not passed the seven year in-use compliance threshold. We agree that the compliance rate based only on field inspections would be greater than the value reported in the Staff Report because that value would include TRUs that have not passed a compliance deadline and were not yet required to take action to comply.

Looking at this issue from the perspective of noncompliance may be more instructive because that perspective would consider the units that have passed a compliance deadline and failed to comply. This distinction is relevant because poor compliance rates contribute to the need for the proposed amendment that adds requirements for drivers, brokers, freight forwarders, shippers, and receivers, if they are the party responsible for arranging the transport of perishable goods on California Highways (see Staff Report page II-12). It should be noted that the comment submitted by Transportation Intermediaries Association indicates they believe the compliance rate for the carriers that their members hire is only six percent (see Comment 30).

The compliance rate for only California-based TRUs is of secondary interest to the need for this amendment. Therefore, no change was made in response to this comment.

6. **Comment:** The proposed regulation was developed pursuant to AB 32 and any violation would be subject to the penalties set forth in Article 3 (starting with Section 42400) of Chapter 4 of Part 4 of Division 26 of the California Health and Safety Code. The code reads:

> *"any person who violates this part, or any rule, regulation, permit, or order of the state board or of a district, including a district hearing board, adopted pursuant to Part 1 (commencing with Section 39000) to Part 4(commencing with Section 41500), inclusive, is guilty of a misdemeanor and is subject to a fine of not more than one thousand dollars ($1,000) or imprisonment in the county jail for not more than six months, or both."*

TIA is extremely concerned with this severe penalty structure and would request reassessment of the language. (TIA)

Agency Response: The commenter is incorrect in stating that the proposed regulation was developed pursuant to AB 32. As discussed in Section I of the Staff Report, several sections of the Health and Safety Code authorize ARB to adopt and enforce the TRU ATCM and the proposed amendments, including Health and Safety Code sections 39650 through 39675 (California Air Toxics Program). Accordingly, violations of the proposed amendments would be subject to the provisions of the Health and Safety Code sections 39674 and 39675, which prescribe maximum penalties of $1,000 or $10,000 per day of violation, or the provisions of Health and Safety Code section 42400, 42400.1, 42400.2, and 42402.2. No change was made in response to this comment as ARB does not have the authority to amend these penalty provisions that are set forth in existing statutes.

Emissions Inventory Issues

7. **Comment**: The updated TRU emissions inventory, and in particular the emission factors selected for use by CARB staff in the updated inventory, are generally based on the OFFROAD2007 model. The OFFROAD2007 model has previously been shown to overestimate emissions for specific types of equipment—for example, equipment subject to the in-use, off-road regulation. The original OFFROAD2007-based inventory vastly overstated PM emissions; this was acknowledged by CARB staff, who subsequently revised the inventory drastically downward to address flaws in OFFROAD2007. Although CARB staff have attempted to revise the TRU inventory to address similar issues with OFFROAD2007 and to improve the accuracy of the TRU inventory, Sierra's review has identified the following three areas of concern that appear to lead to an overestimation of baseline TRU emissions:

The basic emission factors used to estimate TRU emissions appear to overstate TRU PM emissions;

During the original development of the TRU regulation in 2003 and 2004, the fact that TRU engines operate over a duty cycle that is different than that of similar engines used in different applications was an issue that was raised and accepted by CARB staff and the staff of the U.S. Environmental Protection Agency (EPA). This led to EPA's adoption of a special four-mode test cycle for engines used exclusively in TRU applications and the acceptance of that cycle by CARB. This four-mode cycle is found in the EPA regulations in Section 1039.645 of Title 40, Code of Federal Regulations. That CARB staff accepts that the four-mode cycle is representative of TRU operation is documented on pages C-27 to C-33 of Appendix C of the ISOR, where CARB describes how it used the four mode cycle to estimate engine load factors, a key parameter in the emission inventory update.

Although CARB staff acknowledges that the four-mode cycle is representative of TRU operation, the basic emission factors used by CARB staff in the emission inventory are based on the eight-mode test that is used to characterize the operation of similar engines used in other applications. That this is the case is confirmed by CARB staff's statement on page C-66 of Appendix C of the ISOR, which acknowledges that emission factors and deterioration rates from the OFFROAD2007 model were used to prepare the updated TRU emission inventory.

In order to estimate the impact of the four-mode cycle versus the eight-mode cycle on emissions, modal emissions data are required. Fortunately, the modes of the four-mode cycle are also part of the eight-mode cycle that is used to certify the engines used in TRU and other applications. Therefore, all that is required to estimate the emissions differences are the modal data that underlie the emission values and that must be reported to CARB staff in order to obtain emissions

certification of new TRU engines, which are limited in number as shown in Table 23 of Appendix C of the ISOR. However, despite the fact that the existing TRU regulation requires the submission of modal data (see sections 2477(d)(14), (e)(1)(A)1.a.1., and (e)(1)(A)2.a.1., Title 13, California Code of Regulations), it is Sierra's understanding that CARB staff apparently failed to require the submission of those data.

The potential impact of the difference in TRU emissions over the four mode cycle as compared to the eight mode cycle, upon which the updated TRU inventory is based, could be substantial. Given that CARB staff indicates that it has no modal emissions data from TRU engines upon which to gauge the impacts of the four-mode test cycle relative to the eight-mode cycle, Sierra Research solicited such data from engine manufacturers and was able to obtain data on a confidential basis for three indirect-injection diesel engines, similar to those used in TRU applications certified to current Tier III emission standards. The results of Sierra's analysis for the three engines for which Sierra had data indicated average impacts of 58 percent lower PM emissions and 15 percent higher NO_x emissions for the four-mode cycle compared to the eight-mode cycle. These results are generally consistent with what CARB staff reported in the original TRU ISOR.

We converted the 8-mode data from a Tier III, 35 hp, IDI engine to a 4-mode weighted average (shown in a slide not reproduced here). The 8-mode weighted average for PM for this engine is 0.14 g/kW-hr. The converted 4-mode weighted average for PM is 0.06 g/kW-hr. The ratio of 4-mode to 8-mode is 0.42.

All of this information has to be generated for each emission factor and underlies the new engine certification process. This data is collected by the engine manufacturers routinely in order to certify their engines. Engine manufacturers don't certify using the four-mode test cycle because they would only be able use those engines on TRUs. They need to build these engines to go into other equipment. The eight-mode data should be readily available to CARB staff. All they would have to do is ask the manufacturers to provide the data to ARB and then analyze it. This should only take a few weeks. I recommend that you direct staff to obtain this modal certification data from the engine manufacturers, use it to revise the inventory, and then to re-analyze the regulatory options. (SRI)

We urge the Board to direct staff to adjust the emissions inventory, using 4-mode test cycle results. Quite simply, the inventory is based on the 8-mode test cycle, which includes operating modes that TRUs never use. As a result, the inventory may be overstating PM emissions from 25 percent to as much as 60 percent, depending on the engine model. With the inventory serving as the basis for analysis and recommendations before you today, it needs to be adjusted to more accurately reflect TRU operations. ATA urges the Board to direct staff to adjust the emissions inventory to be more representative of the way TRUs actually operate. (ATA)

CTA's Refrigerated Carrier Conference contracted with Sierra Research to model the emission inventory when adjusting for a four mode test cycle instead of the eight mode test cycle staff utilized to model emissions. The resulting inventories are hugely disparate. It should be noted that the four mode test cycle is acknowledged, by staff itself, to be more representative of real-world TRU emissions. Staff argued as such in the 2003 Initial Statement of Reasons for the original rule. After 2003, U.S. EPA has since disallowed engines to be certified for use in TRUs if "the engine is sold in a configuration that allows the engine to operate in any mode not covered by the test cycle described in this section. For example, this section does not apply to an engine sold without a governor limiting operation only to those modes covered by the test cycle described in this section" (40 CFR 1039.645(f)(3)). Therefore, you cannot accurately model the emissions from TRU fleets without using the updated EPA four mode test cycle. ARB has had eight years since the last revision to remedy this problem and has taken no reasonable steps to do so and no such steps are documented in the ISOR. (CTA)

Agency Response: Sierra Research's comment is based on confidential modal data from a Tier 3 indirect injection engine that Staff believes may not be representative of the TRU engine fleet. Sierra indicates that this engine is "similar to those used in TRU applications." There are no known Tier 3 TRU engines certified in the 25 to 50 horsepower category. The emissions standards for this category include Tier 1, Tier 2, Tier 4 Interim, and Tier 4 Final, but not Tier 3.

Sierra Research also claims to have modal data for three engine families that use indirect injection and indicates these are representative of the engines used in TRUs. Staff has found only one indirect injection (IDI) engine family that has been used in trailer TRUs in the 25 to 50 hp category in each model year between 2002 and 2011. Direct injection engines (DI) have been used in the vast majority of the engine families used in TRUs since 2002.

Sierra Research's claim that the details of the modal data they have are confidential makes it impossible to confirm that it correctly converted the 8-mode data to 4-mode weighted average data. For example, the actual power measured during each mode would need to be known. Staff does not believe the limited results provided by the commenter are representative of TRUs in the aggregate.

Sierra Research indicates the weighted average for a Tier 3, 35 hp IDI engine is 0.14 g/kW-hr (0.10 g/hp-hr) using 8-mode data. Staff's review of TRU engines in the 25-50 hp category that were certified to the 8-mode test cycle found the following certification value ranges:

- Tier 1 engines: 0.27 to 0.60 g/kW-hr (0.20 to 0.45 g/hp-hr)
- Tier 2 engines: 0.27 to 0.39 g/kW-hr (0.20 to 0.29 g/hp-hr)

- Tier 3 – Not applicable to this horsepower range
- Tier 4i engines: 0.21 to 0.31 g/kW-hr (0.16 to 0.23 g/hp-hr)

Staff has been unable to identify which engines the commenter's data applies to. Sierra Research also claims the data was obtained on a confidential basis, so they did not share the details about these engines. Without this information staff cannot adequately assess the validity of the comment.

As the 2003 Staff Report clearly indicates, the 4-mode test cycle may be more representative of actual TRU operations than the 8-mode test cycle, particularly for older units. Based on what staff has been told by TRU original equipment manufacturers, staff believes that TRUs don't operate at 100 percent of rated torque at either rated speed or intermediate speed, and they do not idle (zero load), except for a few seconds at start-up. There are several other modes that may also not be applicable to actual TRU operations. Manufacturers had the option to use the 4-mode test cycle, but with the exception of a single engine, chose to certify to the 8-mode test cycle. Staff believes that many TRU engines may not qualify to use the 4-mode test cycle due to the way TRU engine loads currently vary in actual use. TRU manufacturers have indicated to staff that for newer generation TRUs, instead of operating at discrete speed and load modes, the engine load varies along a continuum that falls outside the criteria required for use of the 4-mode discrete test cycle, described under 40 CFR section 1039.645(b)(1), respectively. Staff believes the updated emissions inventory captures what is currently known about these operating modes, and while data is limited, we continue to collect more refined data as we move forward.

Sierra Research indicates that engine manufacturers must report modal data to CARB staff in order to obtain emissions certification of new TRU engines. This is not true. Engine manufacturers are not required to, nor do they, submit modal emissions test data to CARB as part of their engine certification applications. CARB must make a special request to get this data. Similarly, U.S. EPA had not required modal emissions data to be submitted until early 2012. Instead, past modal certification data is only submitted upon a special request from ARB or U.S. EPA.

Sierra Research also indicates that the TRU ATCM requires manufacturers to submit modal emissions data under sections 2477(d)(14), (e)(1)(A)1.a.I. and (e)(1)(A)2.a.I.. The commenter has misinterpreted the regulatory language for the TRU ATCM, which states:

> "Only engines for which certification data and deterioration factors have been provided to ARB shall be considered when determining compliance. The Executive Officer will consider such submittals, publish, and make available a list of qualifying engines."

The intent of this language is that in-use engines could be considered for compliance with the in-use standards, if the modal certification data and deterioration factors are made available to staff for conversion from 8-mode data to 4-mode weighted average and deterioration effects throughout the life of the engine. If compliance with the TRU ATCM's LETRU In-Use Performance Standard is to be achieved by using the engine certification approach, then it must be shown that these engines meet this standard throughout the LETRU compliance period (i.e. until the engine is required to meet the more stringent Ultra-Low Emission TRU In-Use Performance Standard (ULETRU), or until the engine is replaced, whichever is longer). For example, 2001 and older engines must meet LETRU in-use performance standards starting the end of 2008 through the end of 2015 (seven years); then, they must meet ULETRU standards. In the absence of modal certification data and valid in-use deterioration factors, in-use engine testing would be necessary to show these engines meet LETRU.

Staff requested modal certification data, but only received limited data for evaluation. Deterioration factors were also found to be problematic. Staff made attempts to obtain a more robust set of modal emissions data and tried to resolve deterioration factor issues with a workgroup of engine manufacturers and TRU OEMs. Workgroup stakeholders included the TRU OEMs and their engine suppliers, who expressed data confidentiality concerns and would not commit emissions test engines and test equipment resources. These major barriers made it impossible to complete the assessment.

Where 4-mode test data is available to staff (2008 to 2011), it matches ARB's emission factors within two percent. A more complete set of emissions test data is needed to ensure a statistically valid comparison and evaluation. We believe we need to look at a more robust set of TRU engines, possibly considering all TRU engines that were certified with the 8-mode test cycle, which would go back to model year 1999. Given the difficulty in obtaining the necessary data from engine manufacturers and TRU OEMs, it is unclear when such an evaluation would be completed.

The stakeholders' statements regarding the emissions factors used in the updated emissions inventory are not supported by the data provided by the commenter. However, staff has committed to looking closely at the 8-mode versus 4-mode issue and reporting back to the Board. A special request to each engine manufacturer is required for each engine family. The request process has been initiated for all engine families that have been used in TRUs since new engine certification began for off-road engines. This process may take some time because some of these records are over ten years old. Engine manufacturers are not required to maintain these records for more than 8 years. Additionally, staff is working with TRU manufacturers to collect information on the time spent in each mode, which is necessary to understand the overall emission factor. Additional time will be needed to evaluate this new data, if it is provided.

8. **Comment**: The magnitude of the increase in emissions expected from TRU units over time, (which is also referred to as the emissions deterioration rate) is overstated, leading to overestimates of TRU PM and NO_x emissions.

In estimating emissions deterioration for TRU engines, CARB staff indicates on page C-66 of the ISOR that it assumed a 20,000-hour [staff corrected units] life for TRU engines and further assumed that emissions deterioration would continue unabated throughout that period. However, Section 1039.101, Title 40, Code of Federal Regulations (which is incorporated by reference into CARB regulations applicable to TRU engine certification) sets the useful life of smaller engines used in TRU and other applications (rated at less than 25 horsepower) at 3,000 hours and that for larger engines used in TRU and other applications at 5,000 hours. What these useful lives imply is that, in order to achieve a total lifetime of 20,000 hours, TRU engines undergo several "rebuilds" in which the engines and emission-related components are refurbished. As a result of each of these refurbishments, emissions would be expected to be lowered from their deteriorated rate toward the emission rates associated with the engines when new. In any case, a more reasonable assumption would be to cap deterioration at 3,000 and 5,000 hours, respectively, for smaller and larger TRU engines. Sierra strongly recommends that the Board direct CARB staff to revise the TRU inventory to correct this problem with deterioration rates in order to improve the accuracy of the TRU emission inventory. (SRI)

Deterioration calculations need to be revised to account for engine rebuilds at roughly 3,000 hours for less than 25 horsepower engines and 5,000 hours for 25-50 horsepower engines. (ATA)

Agency Response: Staff disagrees with the commenters' claims that in order for TRU engines to reach a total lifetime of 20,000 hours, these engines are rebuilt every 3,000 hours, for less than 25 hp engines, or every 5,000 hours, for 25 to 50 hp engines. Staff also disagrees that at these rebuild intervals, emissions-related components are refurbished, which restores the emissions back to the emissions rates associated with new engines. There are several issues related to this claim that call for discussion.

Sierra Research is incorrectly interpreting the regulatory definition of useful life. 40 CFR section 1039.801 includes the following definition:

> "*Useful life means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar year, whichever comes first. It is the period during which a new nonroad engine is required to comply with applicable emissions standards. See section 1039.101(g).*"

40 CFR section 1039.101(g)(1) requires engines in the less than 25 hp category to meet the emissions standards over the full useful life of 3,000 hours or five years (whichever occurs first) and requires engines in the 25 to 50 hp category that operate at speeds below 3,000 rpm to meet the emissions standards over the full useful life of 5,000 hours or seven years (whichever occurs first). No overhaul interval is recommended by TRU engine manufacturers under 40CFR section 1039.101(g)(2), because TRU engines operate much longer than the minimum required useful life cited above. A recommended overhaul interval is only required if a shorter useful life than the minimum required useful life is requested by the engine manufacturer, in cases where they can show the engines rarely operate longer than the manufacturer's requested alternative useful life.

Based on discussions with TRU manufacturers and their dealers, rebuilding of TRU engines is very rare in actual practice because most fleets that have repair shops don't have the specialized equipment needed to bore out engine cylinders and complete the other machining necessary to bring engines back to new engine specifications that would reduce emissions to meet new engine standards. In practice, only a handful of TRU engines are rebuilt; instead, TRUs are typically repowered with a new replacement engine (aka "service engine") if there is an issue with the original engine.

Based on stakeholder comments to staff, the real life of TRU engines averages about 12,000 to 15,000 hours for bobtail TRUs (less than 25 hp) and about 20,000 hours for trailer TRUs (25-50 hp). Emissions deterioration therefore continues to occur beyond the useful life (3,000 hours and 5,000 hours, respectively).

For certification purposes, deterioration factors are determined by engine manufacturers under 40 CFR 1039.245. They are required to conduct a series of emissions tests, starting with a test at zero hours and ending with a test after the test engine has accrued only 35 percent of the useful life hours discussed above (e.g. 35 percent of 5,000 hours equals 1,750 hours for 25-50 hp engines). Two additional tests are required at equally spaced intervals between the zero-hour and end-point tests. Certain emissions-related maintenance is then allowed after the end of service accumulation test (e.g. cleaning injector tips at 1,750 hours) and then another post-maintenance test occurs. The average emissions value for the pre- and post-maintenance tests is used with the results from the previous three emissions tests in a least-squares linear regression calculation. The resulting straight line equation is then used to extrapolate to determine the emissions at the end of the useful life (e.g. 3,000 or 5,000 hours). The difference between the extrapolated emissions at useful life and the zero-hour value is calculated and reported as the deterioration factor. The extrapolated value at the end of the useful life is the certification value and must be less than the emissions standard.

Staff does not believe these same deterioration factors have any predictive value beyond the end of the regulatory useful life. These reasons are discussed below. In addition, these deterioration factors are not directly applicable to estimating emissions from TRU engines. Emission inventory deterioration factors account for the amount that an engine's emissions increase over time as a result of the engine components aging, poor maintenance, malfunction and tampering.

Critical emissions-related engine maintenance, including periodic fuel injector cleaning, testing, and replacement, has a significant effect on in-use emissions. Emissions deterioration occurs as operating hours accrue throughout an engine's operational life and if this maintenance is not performed, emissions rates can exceed the new engine emissions standards significantly. For example, carbon deposits on or near the fuel injector spray tips can spoil the fuel spray pattern. Also, worn injector tips cause the fuel spray to become coarse droplets instead of the optimum fine spray produced by new injector tips.

Engine manufacturers are required to provide to the ultimate purchaser of new engines critical emissions-related maintenance instructions. These maintenance instructions must be consistent with the emissions-related maintenance that they performed during the deterioration factor emissions test service accumulation (e.g. cleaning injector tips at 1,750 hours). One of staff's concerns is that TRU engine manufacturers have successfully appealed for longer emissions-related maintenance intervals (e.g. interval extended to 3,000 hours) than were used in the deterioration factor tests. The adjusted deterioration factors were based on extrapolation methods, not additional test data. Staff believes this engineering evaluation approach introduces significant uncertainty without data-based justification. Another concern about in-use emissions deterioration is that anecdotal information from TRU manufacturers and dealers indicates that many TRU owners do not complete emissions-related maintenance in accordance with the engine manufacturers recommended schedule unless there is a performance problem. In addition, the major TRU original equipment manufacturers' owners' manuals have, until recently, used longer emissions-related maintenance intervals (10,000 to 12,000 hours) than the engine manufacturers recommended maintenance intervals.

Oil consumption also increases with age due to piston ring, cylinder wall, and intake/exhaust valve stem and valve guide wear. As more lube oil is allowed into the combustion chamber, exhaust emissions increase. A major engine rebuild is necessary to return lube oil consumption back to specification, which includes machining these wear surfaces and replacing pistons, rings, valves, and valve guides.

Staff believes that the commenter's claim that we should cap emissions deterioration at 3,000 or 5,000 hours is not reasonable or justified. Any cap on emissions deterioration would need to be justified by a robust in-use engine emissions test program using a representative sample of in-use engines that

have accrued a range of operating hours beyond the useful life and that have well-documented maintenance histories. The commenters have not provided any such data.

9. **Comment**: The assumed annual hours of operation by TRU units have been updated using suspect data that appear to overestimate TRU PM and NO_x emissions.

As described in Appendices B and C to the ISOR, CARB's assumed annual activity values for TRUs are derived from data collected from "facility reports" that 80 "large" facilities were required to submit to CARB pursuant to the TRU regulation. As indicated on page B-2 of the ISOR, data from 22 of these 80 facilities had to be discarded because they were "unusable," according to CARB staff. Although CARB staff claims to have reviewed and corrected questionable data, there is no documentation of the changes that were made or the criteria used by the staff to conclude that the data were reliable for use in developing emissions inventories.

We evaluated the data in the ISOR Appendix B, looking specifically at the average annual operating hours by facility type and the percent of total TRUs in the facility report accounted for by each facility type. We looked at the maximum, minimum, and standard deviations associated with the individual facility values for each facility type. The variation in average operating hours per TRU varies widely between facility types. Ratios of the maximum to the minimum annual average TRU operation reported by facility type vary dramatically. For example, for facility types where three or more facilities reported, the ratios of maximum to minimum average TRU operation for different facilities are 3, 7, and 32 for foodservice, grocery distribution, and produce distribution, respectively. These large ratios and the lack of detail regarding the facility reports suggest that while the average annual TRU operating hour values may appear reasonable, that may be happenstance and the actual values may differ significantly.

Another problem with CARB's analysis is that the staff has provided no data to suggest that the percentage of total TRUs reported by facility type in the facility reports bears any relationship to the percent of TRUs actually operating in California in transporting those types of products.

A further problem with facility survey data is that they include only the total number of truck and trailer based TRUs operating at each facility and the total annual hours of operation of all TRUs at the facility. As a result, these data are completely unsuited for determining annual hours of either truck or trailer TRU operation, which should have been recorded directly if they were intended for use in emission inventory development. CARB staff attempts to remedy this problem using statistical methods as described on pages C-22 through C-25 of the ISOR; however, this statistical approach is inappropriate because it separates facilities with trucks and trailers from those that had only trailers, and the results of CARB

staff's methodology are clearly erroneous when applied to subsets of the facility survey data. For example, when applied to the food service and produce fleets, with 15 facilities reporting, the annual hours estimated at food service facilities for trailer TRUs was 1,619 hours while that for truck TRUs was a much greater 2,686 hours. Conversely, at produce fleet facilities, the result was a trailer TRU operation rate of 1,975 hours and a truck TRU operation rate of 556 hours, or more than five times less than the estimate obtained for food service facilities using exactly the same methodology.

Overall, while the facility data are more recent than the data used in the previous TRU inventory, CARB staff has failed to demonstrate that they are either valid or that they have been properly analyzed. I recommend the Board direct staff to use the 2003 activity estimates or collect new data. (SRI)

Actual activity data needs to be collected rather than using 2006 facility surveys which are not publicly available for review, do not have data for individual TRUs, and do not differentiate between truck and trailer TRUs. With the inventory serving as the basis for analysis and recommendations, it needs to be adjusted to more accurately reflect TRU operations. ATA urges the Board to direct staff to adjust the emissions inventory to be more representative of the way TRUs actually operate. (ATA)

Agency Response: Staff disagrees with the commenters' contention that there is no documentation of the changes that were made during the screening of the raw data from the facility reports. Staff provided a reasonable explanation in Appendix B as to why some data was screened out, as follows: "*Data was missing when the facility contracted for carrier service, the carrier sent equipment from their "pool" of equipment, so the same equipment was not used consistently and data for the annual hours of TRU engine run time attributable to the facility was not available.*"

Sierra Research looked at various statistical measures of the annual hourly activity hour data that they believe indicates the data varies dramatically. Staff's experience indicates that actual data for annual hourly activity can vary because companies own varying numbers of TRUs at varying ages, and as a result utilize their equipment very differently. These trends are consistent with other off-road sectors ARB has studied. For example, many fleets may keep "spare" equipment that is used only occasionally when newer equipment breaks down or during peak capacity periods, while other fleets may rent such equipment instead of owning it.

Sierra Research indicates that staff did not provide data to suggest the percentage of TRUs reported by facility type bears any relationship to the percentage of TRUs actually operating in California, transporting those types of products. Staff received responses from applicable facilities, which had 20 or more loading spaces in 2005. The sample represented just less than 7,000 truck

and trailer TRUs. Staff's emissions inventory update found there were close to 30,000 TRUs based in California in 2006. Therefore, the survey represented about 23 percent of the TRUs based in California, which is a fairly robust sample size. There is no comprehensive database for TRUs that cover all types of products and all sizes of refrigerated fleets. Therefore, such a comparison is difficult if not impossible to make. Regardless, understanding the relationships for each type of product is not relevant to understanding the average annual hours of TRU operation for the aggregate TRU population.

Sierra Research indicates that because the survey did not request separate annual TRU activity by truck and trailer, that staff's efforts to estimate these values from the combined data are invalid and make the results unsuitable for use for either trucks or trailers. Staff disagrees. Separate data for truck and trailer TRUs weren't required because this would have created a burdensome level of complexity on the reporting facilities. Staff evaluated the data for trucks and trailers together and separate only to find similar results for activity level. As indicated in the Staff Report (Appendix C, page C-24section I.C.3.a) on page C-24), "While staff considered using an average activity and applying it to all TRUs, feedback from stakeholders suggested that activity for refrigerated trucks would likely be lower than activity for TRUs used on trailers." Staff believes the statistical methods used to separate this data are appropriate and sufficient to improve the accuracy of the emissions inventory.

Sierra Research states that another problem with the ARB analysis is an unsupported finding that the facility survey is representative of the industries operating in California. The representation of the industries using TRUs in the survey responses were compared against freight data from the Federal Highway Administration. Staff concluded that the survey was a fair representation of TRU activity as discussed in the Staff Report.

Staff disagrees with the commenters' recommendation to disregard the facility report data and use the 2003 annual activity estimate instead of the updated estimate. The facility report data provides a much more complete and robust data set than the data set used in 2003. While the activity data used in 2003 was the best available at the time, it was based on national surveys. The updated activity estimates are based on California operators.

10. **Comment**: The revised baseline PM emission inventory, as well as the inventory with a three-year delay in implementation of the TRU rule, falls below CARB's current assessment of emissions with the TRU regulation in place. Similarly, the revised NO_x inventory with the three-year delay is essentially equivalent to CARB's current assessment of emissions with the TRU regulation in place. (SRI)

Agency Response: The TRU ATCM is designed to reduce emissions of diesel PM, a toxic air contaminant (TAC). The 2003 Staff Report and the 2011 TRU Amendments Staff Report discuss the need for the regulation to control

emissions of a TAC. Staff's analysis, conducted as part of these amendments, showed that the public health risk under the ATCM's existing seven-year TRU operational life still results in potential cancer risk levels of concern in communities near facilities where TRUs congregate. If the in-use requirements were to be relaxed by delaying compliance and extending the operational life of TRU engines, this risk would be even greater and likely exacerbate concerns regarding elevated risk levels in nearby communities.

11. **Comment**: Health risk is a direct result of the facilities report, which shows that originally, about 80 facilities reported; but for 30 of them, the information was unusable. It came down to 56 facilities that staff used. I looked at the data and noticed there's a 218 trailer fleet reported three times. It's pretty obvious it's the same fleet because it's the same number of hours each time. It probably is three different facilities, but the same trailers assigned to all three facilities. So we're getting impacted by those hours, which are on the same trailers. The numbers aren't quite adding up, and that's what's killing our industry and forcing us to not get the extended operational life that we really need to provide relief from the cost that we're having to incur. (CVTR)

Agency Response: When the facility report in question was received, staff contacted the company to question this data and learned that they "float" their TRUs between their 3 facilities. This means that the TRUs are not assigned to any one of the three facilities, but may operate at any of the three facilities at any time. The facility reported 218 TRUs, 316,912 total annual TRU hours for all of their TRUs, and 1,454 hours/year/TRU as the average annual hours per year per TRU for each facility, so the commenter is correct that these values are duplicated.

These duplicated numbers have the following effects:

A. The number of TRUs reported at each of the three facilities (218) inflates the total TRUs involved in the survey by 436. So the total TRUs involved in the survey should be adjusted downward from 6,963 to 6,527.

B. The total annual hours for all facilities (11,927,142 hrs), shown at the bottom of the spreadsheet in Staff Report Appendix B, Attachment 1 was overstated by 316,912 hrs x 2 = 633,824 hrs. However, this value is not used in any other calculated value and was not used in the results or conclusions of Appendix B, Summary of 2006 Facility Reports.

C. Since the average annual hours per TRU for these three facilities (1,454 hrs/yr/TRU) is less than the aggregated average (1,665 hrs/yr/TRU), removing these two values has the effect of increasing the aggregated average to 1,673 hrs/yr/TRU. So this error does not have the effect of over-estimating the average annual TRU engine hours. The error actually

causes a less than one percent under-estimation of the overall average annual hours of TRU engine operation.

It is important to note that the values for weekly TRU engine activity at each of the three affected facilities are not duplicated because the company conducted separate recordkeeping for each facility and reported activity that is specific to each facility. Therefore, these results did not affect the average hours per week at each of these facilities nor does it affect the aggregated average hours per week for all facilities. Therefore, public health risk due to TRU activity at facilities was not over-stated as a result of these three facility reports.

Furthermore, staff confirmed that there are no other facilities that also floated their TRUs between facilities and reported similarly and we found there are no similar errors that would confound the results and conclusions.

Economic Issues

12. **Comment**: Staff's revised cost estimates associated with the TRU rule is now four to eight times higher than originally forecasted in 2003. Cost-effectiveness was estimated to be $10 to $20 per pound reduced emissions in the original ISOR and was estimated to be $88 per pound reduced emissions, as expressed in 2011 dollars in this current ISOR. So, what was originally estimated to be a very cost effective rule now looks much less so, with the TRU rule being almost twice as expensive as the truck and bus rule on a per-pound basis. If you look at the cost-effectiveness using the EPA four-mode test cycle for TRUs, PM emissions are 25 to 60 percent less, so the cost-effectiveness of the rule gets closer to a range of $120 to $222 per pound reduced, which would make this one of the, if not the, most expensive rule ever considered by the Board. We believe that's a pretty conservative estimate. With a nine-year operational life, ARB can meet the 2003 emission reduction goals and save California TRU owners millions of dollars. Extending the operational life by two to three years more closely aligns the rule with the original cost-effectiveness estimates. (CTA)

Staff has left us with only one compliance option at a cost close to 400 percent higher than the original estimate. (FF)

The rule is not cost effective. The estimates on the filters and repowers are over the estimates presented by the staff a number of years ago. (SM)

Given the mixed results fleets are having with retrofits and the scarce number of ULETRU options, fleets are having to invest in temporary compliance solutions. This has significantly increased the cost of compliance to $638 million, which is four to seven times higher than originally projected $87 - $156 million figure used when the regulation was originally adopted. This is mainly attributed to the combined effects of higher costs in meeting the compliance requirements and greater numbers of TRUs affected. According to the staff report, a two-year

extension of the compliance requirements is estimated to reduce compliance cost by $430 million while a three-year extension reduces these costs by $530 million. The revised PM cost-effectiveness of the TRU regulation is roughly double what was approved for either the Truck and Bus or Off-Road regulations. In other words, for each dollar spent on TRU compliance you get half the PM emissions reductions of these other regulations. Once the adjustments are made to the emission inventory, the regulation becomes even less cost effective. (ATA)

Obviously, having an accurate inventory is vital to assessing the regulatory impacts of any regulation, as well as the cost effectiveness of those regulatory options. The 2003 staff report used $10 to $20 per pound of PM emissions eliminated. The 2011 staff report showed $83 per pound. My calculations, with the inventory adjusted using the 4-mode emissions results in $406 per pound of emissions reduced. (SRI)

Agency Response: The commenters are correct that the compliance costs have turned out to be higher than anticipated. The Staff Report discusses updated compliance costs and cost-effectiveness estimates, which did increase from the originally estimated $10-$20 per pound to $88 per pound of diesel PM reduced. Staff is comfortable with that discussion and the emissions reduction estimates that are used in that cost-effectiveness calculation. Staff does not agree with the commenters' estimated cost-effectiveness using the 4-mode emissions factors, because Staff's emissions factors were within two percent of what was proposed by the commenter and not five times greater, as the commenter's calculations suggest.

13. **Comment**: We've incurred, as operators, additional maintenance costs to service these units. (SM)

Carriers have expressed dissatisfaction with retrofits due to maintenance and operational issues as well as increased fuel costs. (ATA)

Since retrofitting our TRUs, fuel consumption is 33 percent higher. I suspect lower operating RPMs do not facilitate regeneration, causing more back pressure, increasing fuel consumption. Our maintenance provider informed us our maintenance rates are going up 50 percent. (HR)

Agency Response: Maintenance costs were included in the economic analysis in the Staff Report. Maintenance costs should not increase for owners that choose to repower or replace TRUs. Instead, maintenance costs should decrease as a result of using more efficient and more reliable new engines and refrigeration systems. ARBER data, as discussed in the Staff Report, Appendix C, indicates that about 79 percent of California-based trailer TRUs complied by choosing the repower option. Owners chose to retrofit about 20 percent of the TRUs that complied. Staff expects these compliance trends to continue for the next few years. Staff agrees that the maintenance costs

increase after retrofitting with a VDECS, but the extent of that increase depends on having good baseline data. Fuel consumption increases for VDECS are typically in the one to five percent range, but again, good baseline data is needed to accurately determine the percent increase. It should be noted that Harris Ranch provided only overall numbers. They did not provide the detailed baseline data for each retrofitted unit necessary to confirm the fuel use rate increase they cited.

14. **Comment**: The real world experience from new OEM-installed DPF technologies since 2007 and passive retrofit DPFs integrated into the exhaust systems of on-road and off-road vehicles has shown a fuel economy impact attributed to increased backpressure of only 1-2 percent. (MECA)

Agency Response: Staff agrees that the backpressure-only fuel economy impacts should be in the one to two percent range. However, for active regeneration VDECS, additional fuel is used to provide the energy needed to burn the accumulated soot off the filters. As indicated above, fuel use typically increases one to five percent with the use of a VDECS.

TRU Original Equipment Manufacturer Requirements

15. **Comment:** For the proposed amendment in section 2477.13(a)(4), as an OEM whose products are sold by an independent dealer network, Carrier Transicold generally does not have visibility of, or contact with, the ultimate purchaser prior to sale. Carrier Transicold would suggest that the language state that the OEM updates their owner and/or operator's manual if the unit is equipped with a flexibility engine and it is the responsibility of the TRU dealer to notify the ultimate purchaser prior to sale. (CT)

Agency Response: Although the comment refers to section 2477.13(a)(4), the issue actually addresses section 2477.13(a)(3) of the proposed amendments. Staff agrees with the comment and modified the proposed language in section 2477.13(a)(3) for the reasons cited by the commenter. This modified language was included as part of Notice of Public Availability of Modified Text (15-day changes).

16. **Comment**: For the proposed amendment in section 2477.13(c)(2), Carrier Transicold would like to suggest an alternative means of providing the registration information. Instead of requiring a printed registration document, Carrier Transicold would like to pursue an on-line lookup system as an alternative. This alternative would prevent the need to provide paper documents and save on natural resources. This would ultimately provide the purchaser more direct and accurate access to the information since the written documents have a great potential to get lost during equipment installation at a third party, such as a trailer body OEM. (CT)

Agency Response: Staff agrees with the comment and modified the proposed language in section 2477.13(c)(2) and (c)(3) for the reasons cited by the commenter. The modified regulatory language allows an alternative to providing the registration information document with the TRU or TRU gen set. Instead, the OEM may choose to provide the registration information on an Internet-based on-line look-up system, as long as that approach is at least as effective providing the registration information document with each new unit or each new and rebuilt replacement engine, as determined by ARB. Regulatory language was also added to section 2477.14(a)(1) and (a)(2) which requires dealers to provide a print out of the registration information from the OEM's Internet-based look-up system. This modified language was included as part of Notice of Public Availability of Modified Text (15-day changes).

Health Risk Issues

17. **Comment**: Diesel pollution contributes to serious health impacts throughout the state and particularly in communities with concentrated freight activity where TRUs are frequently used, including warehouses, rail yards, port terminals and other transportation services. Diesel engines, including those used by TRUs, are a major source of fine particulate matter (PM), which has been strongly linked by numerous studies to increased risk of emergency room visits, hospital admissions, asthma attacks, cardiovascular disease, respiratory disease, adverse birth outcomes, cancer, and premature death. In addition to these health impacts, diesel exhaust also contains many hazardous and carcinogenic chemicals, as well as smog-forming gases. Finally, diesel engines in California are the largest source of black carbon, a potent global warming pollutant.

The more than 175,000 TRUs in operation in California contribute significantly to air pollution and resulting health impacts. We applaud ARB for taking the initiative to control emissions from TRUs. This regulation as originally adopted would reduce over 3,000 tons of fine PM and almost 12,000 tons of NO_x emissions through 2025. These emission reductions will be responsible for more than:

- 370 Lives Saved
- 125 Hospitalizations Avoided
- 5,600 Cases of Asthma and other Lower Respiratory Symptoms Averted
- 470 Cases of Acute Bronchitis Prevented

The total economic benefit of these air quality and health improvements tops $2.6 billion. In the future, we urge staff to quantify and report these important health benefits related to the initial regulation and proposed changes, as has been done for other diesel regulations (e.g. see December 2010 amendments to the Statewide Diesel Truck and Bus regulation and the Off-Road Diesel regulation). (NRDC)

Agency Response: No response required.

18. **Comment:** Sierra Research performed a sensitivity analysis to assess the magnitude of the impacts associated with the factors identified using a modified version of CARB's updated TRU emission inventory The Board should direct staff to revise the risk assessment to reflect the change in PM emission factors. (SRI)

Agency Response: As discussed at the Board Hearing, staff will consider revising the health risk assessment if there is a significant change in PM emissions at facilities as a result of further evaluation of the issues raised in this rulemaking or any other considerations that may affect health risk at facilities.

19. **Comment:** The amendments proposed by staff allow for some additional time for most TRUs to comply, while maintaining the major emission reductions and health benefits of the initial regulation. We recognize the need for flexibility, but we cannot afford major delays in implementation due to the health impacts of TRUs. The amendments strike the right balance. Maintaining these public health benefits is critical, as large distribution centers with many TRUs running still pose significant health risks to nearby residents. Note that the average large facility, with TRUs running almost 2,000 hours per week, will continue to pose very high cancer risks above 100 per million to residents living within 1,000 feet through 2016 with the current regulation in place (see ISOR page III-9). (NRDC)

Agency Response: Staff agrees with these comments, which are generally consistent with the Staff Report.

Operational Life Extension

20. **Comment:** We are strongly opposed to extending "useful lifetimes" for high emitting equipment, as called for by industry representatives at the November 2010 hearing – which would amount to as much as a three-year compliance delay. We are very concerned about industry's efforts to lengthen equipment lifetimes that lead to compliance delays and greatly diminish health and air quality benefits of this important regulation. This is a major health concern, particularly in communities with concentrated freight activities where TRUs are frequently used, including warehouses, rail yards, port terminals, and other transportation services. One example is the dull berth and container storage area on the other side of the terminal from Cesar Chavez Park (in Los Angeles). Trucks and TRUs are parking and idling in the lot immediately adjacent to the park, which is used a lot for soccer games by the community. In addition, many facilities are in close proximity to homes, schools, and other sensitive sites. Even with the current regulation in place, TRU activity at these large facilities poses very high cancer risks above 100 per million to residents living within a thousand feet. Without industry's proposed delay, this regulation can provide important air quality and public health benefits with an economic

boost of $2.6 billion through 370 lives saved, 125 hospitalizations avoided, 5,600 cases of asthma and other lower respiratory ailments averted and 470 cases of acute bronchitis prevented. We strongly urge you to preserve these benefits by adopting the carefully crafted staff-proposed amendments. We have seen great progress with 2003 and older TRUs cleaning up. We need the 2004 and newer TRUs to be cleaned up as well. There are many compliance pathways available for 2004 TRUs, as staff has presented. We greatly appreciate the effort to preserve the health and air quality benefits of this important regulation. We urge you to adopt staff's proposed amendments without any further delays, lengthened equipment lifetimes, or weakened compliance obligations that would prolong exposure to emissions from TRUs. (NRDC)

We oppose the industry proposals to further delay the implementation of the TRU requirements. We are pleased to hear the testimony of the Manufacturers of Emission Controls and others about the Level 3 emission control devices that are moving forward and progress that has been made with these applications. We think that proves the feasibility of this regulation and supports the direction of the staff. We've also learned a lot about the health impacts and the serious dangers of diesel exposures to communities, especially to children - especially about the serious risk from the concentration of these units in hot spot areas. I appreciate your focus, Chairman Nichols, about taking a look more closely at what we can do to address these areas with high concentrations of diesel sources and units. We need to keep moving towards cleaner goods movement, especially towards zero emission goods movement, which is a very high priority for the Lung Association. We know that the avoided health costs of this regulation are extremely high. Your last estimation was topping 2.6 billion dollars in lives saved and asthma attacks avoided. These are tremendous benefits, and we believe they far exceed the costs of the regulation. We can't afford major delays and weakened compliance. We urge you to move forward today and stay on track with the Diesel Risk Reduction Program. (ALA)

Agency Response: Staff agrees with these comments and the recommendation.

21. **Comment:** We believe that any further delays in the implementation of this rule would be counterproductive to ARB's PM reduction goals, and also would stifle further technology development efforts to bring additional technologies to the marketplace, such as the Level 3 ULETRU devices. (MECA)

Agency Response: Staff agrees with these comments.

22. **Comment**: Staff was directed by the Board last fall to consider several amendments, including extending the operational life of TRUs. There is a significant cost savings associated with extending operational life. It should be noted that any TRU operational life between seven and nine years will achieve

the emission reduction goals you had originally set out to achieve in 2003. A seven-year operational life, as recommended by staff, actually achieves a significantly higher reduction, albeit at a significantly higher cost.

CTA recommends considering a nine-year operational life for TRUs. The current emissions inventory supports regulatory relief of at least a 2-year full delay. In aggregate, a two-year full delay (nine-year operational life) achieves the emission reductions required to meet the State Implementation Plan requirements. A nine-year operational life still achieves a higher emission reduction than you set out to achieve in 2003 and would save businesses who utilize TRUs $430 million between now and 2029. Those are staff's figures.

We believe a nine-year operational life for TRUs is a fair compromise which achieves environmental and economic balance and can fix many of the issues we've been dealing with since this rule was first introduced almost a decade ago. It would allow a one-and-done OEM ULETRU compliance option to come to market so these carriers would no longer have to spend money on repowering and retrofitting down the road. And it would allow fleets who do choose to retrofit additional time to assess available ULETRU retrofit options for cost-effectiveness and the kind of reliability necessary when dealing with temperature-sensitive food products that are sensitive to contamination. Please consider directing staff to look at the nine-year operational life. (CTA)

We simply ask that you accept the fact that we are ahead of the curve in cleaning the air and allow us to improve our cash flow by granting us the extra years of useful life. We would like you to have staff look at the nine-year operational life, which will give us time to get a TRU engine that is compatible with the rule. (FF, CFL)

The updated TRU inventory supports a two-year additional life. I ask the Board to look at extending the TRU life an additional two years. (SM)

We would certainly welcome a longer operational life for TRUs. (HR)

We urge the Board to provide a minimum two-year extension to the operating life. We believe that emissions inventory adjustments further justify this extension. A two-year extension to the compliance requirements will still meet the emission reduction targets of the regulation while a three-year extension, because of the issues associated with the emissions inventory, is likely to as well. In addition, this extension will provide additional time for compliance options to become available.

The amendments presented today do not address the core issue. What is needed is a solution that manages the engine's operating cycle with its emission control system, not a bolted-on solution that compromises overall efficiency. This solution becomes available in 2013, and not only meets the ULETRU standards,

but lowers NO_x emissions as well. We ask that you address our core issue today -- the lack of viable long-term compliance options -- by granting the two-year extension to operating life. (ATA)

Agency Response: Staff considered eight, nine, and ten year operational lives, which would extend the operational life one, two, or three additional years, respectively, from the current compliance deadlines. Staff's evaluation, as discussed in the Staff Report, showed these increases in operational life would increase the potential health risks over 11 percent, 23 percent, and 42 percent, respectively. While extending the implementation is less costly, the significant increase in emissions and potential public health risks made these alternatives unacceptable.

Legal Issues

23. Comment: ARB should take appropriate action to comply with Health and Safety Code section 39665(b)(1).

Health and Safety Code 39665(b)(1) requires reports on regulations adopted as Air Toxic Control Measures, such as the one currently in question, address "to the extent data can be reasonably made available":

"*The rate and extent of present and anticipated future emissions, the estimated levels of human exposure, and the risks associated with those levels."*

As noted above, since 2003, ARB has known it was incorrectly modeling particulate matter emissions by 25-60 percent above real world emission factors by using an eight mode test cycle which is inconsistent with the EPA's required four mode test for TRU engines. (CTA)

Agency Response: ARB has complied with the requirements of Health and Safety Code section 39665(b). That section applies to a report referenced in Health and Safety Code section 39665(a), which in turn references a public hearing and determination whether a substance is a toxic air contaminant. As discussed in Section I. of the Staff Report, California's Air Toxics Program, set forth in Health and Safety Code sections 39650 through 39675, mandates the identification and control of air toxics in California. The identification phase of the Air Toxics Program requires the ARB, with the participation of other state agencies, such as the Office of Environmental Health Hazard Assessment (OEHHA), to evaluate the health impacts of, and exposure to, substances and to identify those substances that pose the greatest health threat as TACs. The ARB's evaluation is made available to the public and is formally reviewed by the Scientific Review Panel (SRP) established under Health and Safety Code section 39670. Following the ARB's evaluation and the SRP's review, the Board may formally identify a TAC at a public hearing. Following the identification of a substance as a TAC, Health and Safety Code sections 39658, 39665, 39666,

and 39667 requires ARB, with the participation of the air pollution control and air quality management districts, and in consultation with affected sources and interested parties, to prepare a report on the need and appropriate degree of regulation for that substance.

In August 1998, the Board identified diesel PM as a TAC with no specified threshold exposure level below which adverse health impacts would be expected, pursuant to Health and Safety Code (HSC) sections 39650 through 39675. A needs assessment for diesel PM was conducted between 1998 and 2000 pursuant to HSC sections 39658, 39665, and 39666. This resulted in ARB staff developing, and the Board approving, the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (Diesel RRP) in 2000 (ARB, 2000). The Diesel RRP addressed the issues listed in Health and Safety Code section 39665(b).

Moreover, U.S. EPA does not require the use of the TRU Test Cycle for TRUs. Engine manufacturers may elect to use the TRU Test Cycle if the application qualifies to use it. See the responses to Comments 7 and 24.

24. **Comment**: Government Code 11349(d) requires that regulations be consistent and "in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions or other provisions of law." Continuing to model TRUs emission factors using an eight mode cycle is not consistent with 40 CFR 1039.645 which states that an engine may not be certified for sale in a TRU unless it is tested and governed to operate on a four mode test cycle. Furthermore, it is impossible to satisfy the requirements of HSC 39665(b)(1) to estimate levels of human exposure and the risks associated with those levels without forecasting the rate and extent of present and anticipated future emissions on the best, statutorily required tests available. (CTA)

Agency Response: The response to Comment 23 is incorporated by reference herein. The commenter has misinterpreted both the provisions of Health and Safety Code 39665(b)(1) and 40 CFR 1039.145. Health and Safety Code section 39665(b)(1) applies to a report referenced in Health and Safety Code section 39665(a), which in turn references a public hearing and determination whether a substance is a toxic air contaminant. 40 CFR 1039.145 allows manufacturers to choose to use the 4-mode test cycle for engines that are used in TRUs, provided certain conditions are met but does not mandate that the 4-mode test cycle to be used, and ARB has no authority to require its use. To date, only one engine manufacturer has elected to use the four-mode test cycle for one of their engines.

25. **Comment:** The economic analysis is flawed and does not comply with Government Code 11346.3. Staff incorrectly reports a net cost savings to business in the section titled "Estimated Costs to Businesses" (page V-11) of the Staff Report. Because the cost-effectiveness assumptions have been revised

upwards by a factor of 4-8 times since their original rulemaking, it would be appropriate for staff to revisit the potential for significant adverse economic impacts on California business enterprise associated with these grossly inflated costs, not simply [report] the modest savings associated with their amendments. (CTA)

Agency Response: As required by Government Code 11346.3, staff conducted an assessment of costs or cost savings associated with each one of the proposed amendments being considered by the Board. Some amendments resulted in cost increase while others resulted in cost savings. Staff's analysis showed that the proposed amendments result in net cost savings to affected businesses as shown in Chapter V (Economic Impacts), Section F (Estimated Costs to Businesses) on page V-11 of the Staff Report.

However, per the Board's direction, staff also performed an updated cost-effectiveness estimate for the original regulation adopted in 2004. Current emission reduction benefits, compliance equipment costs, maintenance costs and compliance method utilization were used in the updated estimate. This estimate was included in the Staff Report in Chapter V, Section H (Methodology for Updating Estimated Costs Associated with the TRU ATCM). The updated cost-effectiveness of the TRU ATCM is still within the range of ARB regulations as shown in the Staff Report in Table V-10 (page V-16).

Broker, Shipper, Receiver Issues

26. **Comment:** TIA is appreciative of your staff's understanding and intent to not make brokers and freight forwarders physically inspect TRUs to determine compliance. We agree that it is not the role of third-party logistics providers (3PL) to physically inspect trucks; rather the obligation should be on the trucking companies to ensure only compliant TRUs are on California highways. (TIA, ALC)

Agency Response: The Staff Report states on page II-13 that it is not staff's intent to make brokers, forwarders, shippers, and receivers inspect TRUs to determine compliance or turn away noncompliant TRUs.

27. **Comment:** Before this mandate becomes law, there needs to be a further clarification of how enforcement would be applied to the 3PL industry. Your staff has indicated that a first offense will result in a letter of non-compliance being sent to the shipper, broker, and receiver. There is no process in place to appeal such a letter, no way to verify the allegations, nor any due process afforded to the warned party. A non-compliance letter would tarnish the broker's standing with its customers, hurt future business, and cause continuing economic damage to California based companies and companies doing business in California. (TIA, ALC)

Agency Response: Staff discussed several possible enforcement processes during workshops and in follow-up conference calls. ARB's Enforcement Division has a settlement process in place that provides a forum for cited parties to discuss and to appeal a citation. Owners have the opportunity to present their side of the case and provide documents or evidence that may have a bearing in whether the citation stands or is withdrawn.

28. **Comment:** We appreciate staff's intent to develop guidance for what brokers need to do to demonstrate due diligence – steps that brokers could use to remove them from being responsible for noncompliant carriers. (TIA)

The majority of shipping transactions are arranged by the consignee (buyer), either directly or through broker arrangements. We do not believe that the ultimate responsibility for enforcement-related information rests with the California-based shipper, but rather, it rests with the consignee, broker, or the actual carrier for which this regulation is designed. California produce industry shippers need assurance that they can exercise due diligence, to the best of their ability, and not be held liable or otherwise penalized if the equipment is subsequently found to be non-compliant. The vast majority of refrigerated trailers used to transport perishable agricultural commodities are domiciled outside the state of California. Under the regulations, an out-of-state registered refrigerated trailer is not required to register through the ARBER system, and is not required to provide identification on the refrigeration unit. Therefore, the California shipper must rely on the representation of the carrier or its representative that its equipment is compliant with the TRU regulations. Requiring California shippers to perform activities beyond requesting, or self-attestation, that the carrier is compliant would place them in an untenable position. An inquiry by a California shipper should be defined as meeting due diligence. We would like the Board to direct staff to issue guidelines that would more fully explain what constitutes due diligence so that if we meet that criteria, we would not be cited for a violation. (WGA)

We don't agree that brokers should be held responsible for hiring compliant carriers. If [Allen Lund Company] ALC books a load on a truck with assurances from the carrier that the truck is compliant the carrier can still switch the truck to be used on the ALC-booked load. ALC is unclear about what proof will be required to avoid a fine. Clearly, a broker is not a carrier, they have no trucks, they do not employ drivers, they cannot exercise control over the carrier, their trucks, drivers, or operations. A broker cannot select certain trucks or drivers when tendering loads to a carrier. (ALC)

Agency Response: The Staff Report discusses why these new requirements are needed in Chapter II. Operating TRUs that do not comply with California's in-use TRU engine emissions standards exposes the public to potential cancer risk and is a violation of State law. Compliance rates for TRU engines that have passed a compliance deadline have been declining since the in-use

requirements began to be phased in starting in 2009. Noncompliance is most significant among the carriers that are hired by brokers, freight forwarders, shippers, and receivers. When brokers, forwarders, shippers, and receivers hire carriers that have noncompliant equipment, they contribute to the low compliance rates. Additionally, carriers with noncompliant equipment are able to offer lower refrigerated truck rates and, as a result, obtain unfair competitive advantages compared to compliant carriers that need to charge higher rates to pay their in-use compliance costs. Compliant carriers have expressed their frustration about this unfair competition, and about seeing many noncompliant TRUs at loading docks. Compliant fleets and their trade associations have requested that the TRU ATCM include requirements for brokers, freight forwarders, shippers, and receivers that would require them to only hire or contract with compliant reefer carriers.

The Staff Report also discusses on page II-13 stakeholders' request for guidelines that explain the requirements that brokers, freight forwarders, shippers, receivers, carriers, and their drivers must meet. The staff report discusses that staff is committed to develop such guidelines, which would also include due diligence criteria for hiring and contracting for compliant refrigerated carriers. If such criteria are met, they would be considered by enforcement staff, along with other facts of the case, in whether a citation should be issued or not and whether a penalty or warning is warranted. Concepts are listed in the Staff Report on page II-14. These concepts include several provisions that could provide tools to quickly identify compliant carriers. Staff believes these compliance assistance provisions and possibly other tools have the potential for helping brokers comply with the new requirements.

29. **Comment**: As we understand the requirements of section 2477.10, shipper responsibility would only apply if the shipper is the business entity that hires or contracts with the carrier to transport perishable goods on California highways. It is our further understanding that due diligence by a California-based shipper would be met if it conspicuously inserts the following language on the bill of lading: "Carrier or its agent certifies that any TRU equipment furnished will be in compliance with California Regulations." A typical bill of lading will have the shipper name, origin, receiver name and destination; however, individual names and their telephone numbers are rarely available. In many instances, most shipments are less than truckload and have multiple drops and destinations. The information currently contained on the bill of lading provides adequate information to enable ARB staff to contact any of the involved parties. For this reason we are requesting that 2477.10(a)(3)(D) (i.e. contact person's name and phone number at the shipper, broker, or receiver with knowledge of the transport arrangements.) be deleted. (WGA)

Agency Response: Staff disagrees with the commenter's request to delete section 2477.10(a)(3)(D), which requires the shipper to provide the shipper's contact person name and phone number if the shipper is the business entity that

arranges, hires, contracts for, or dispatches the transport of perishable goods. A shipper would have this information readily available since it is the entity hiring the carrier. The shipper also fills out the bill of lading, which includes the shipper's information. The shipper also gives the bill of lading to the driver. No change to the language in section 2477.10(a)(3)(D) was made.

30. **Comment:** The amendment would add requirements for brokers and freight forwarders to only contract or hire with compliant carriers. TIA is concerned because this means that our members would be limited to contract/hire only six percent of the available carriers in an already very tight capacity market. A broker cannot exercise control over the carrier or its trucks or operation. Our members doing business in California are already being hurt due to the highest sales tax in the nation, strict climate change laws, and countless employer mandates. In these hard economic times, when the State of the California is faced with an unemployment rate of 12 percent, TIA believes this is not the time to create another requirement that would create a further hindrance for companies doing business in California. In addition to having an adverse effect on companies in California seeking to transport their products and companies seeking to do business in California, the proposal would have a severe impact on small trucking companies. Approximately 80 percent of trucking companies in the United States operate five or fewer trucks. It is no wonder, therefore that only six percent of the current California fleet is compliant with the regulation. While the goal of clear air is laudable, taking drastic steps quickly may result in thousands of small California businesses being forced to close. The result would be to exacerbate an already intolerably high California unemployment rate. (TIA)

The proposed amendments extend beyond trucking companies to parties that arrange the transport of goods in a refrigerated trailer. This is unfair, unworkable, will most certainly result in increased transportation costs, and will lead to more businesses leaving California. Produce must be moved quickly to ensure that the produce is delivered in a timely manner. Adding a new requirement for verifying carrier compliance will not allow brokers to move loads for a reasonable and acceptable cost. This will increase the consumer's final cost of the produce. This proposal is an economic blow to already struggling California businesses. Allen Lund Company (ALC) employs more than 100 people in high paying jobs that can be moved to another state that works with business, rather than California, which oftentimes makes working in this state a burden. We respectfully request that the TRU Act not be expanded, as proposed, as such a course of action will unfairly punish companies such as Allen Lund Company, Inc. (ALC)

Agency Response: The commenters indicate that if brokers are required to only hire compliant carriers, they would be limited to only six percent of the available carriers. This statement indicates that 94 percent of the carriers they currently hire are noncompliant. If this is true, the noncompliance rate is worse than what was reported in the Staff Report. Such a high noncompliance rate

substantiates staff's position in the Staff Report that brokers play a significant role in fostering unfair competition between compliant and noncompliant carriers. If the number of available compliant carriers is small, then it is appropriate for brokers to take steps that help increase compliance rates. That may involve providing financial assistance to carriers or increasing truck rates (e.g. the amount brokers pay carriers to haul cargo). The broker, shipper, and receiver requirements don't go into effect until January 1, 2013, to allow time for brokers, shippers, and receivers to help increase the number of compliant carriers. A level playing field is necessary for those carriers that have chosen to comply. Staff understands that compliance costs could be passed on through to the consumer.

31. **Comment:** It must be noted that the TRU Act itself is in question based upon CARB's own letter to the lead author of the 2008 study that overstated issues with diesel exhaust. The NOTICE OF ADVERSE ACTION to Hien T. Tran dated April 9, 2009 from Linda Smith, Chief of the Health and Exposure Assessment Branch, in the 'Statement of Facts' section states:

> *"Your dishonesty regarding your education has called into question the validity of the report 'Methodology for Estimating Premature Deaths Associated with Long-term Exposure to Fine Particulate Matter in California' in which you were the project coordinator and lead author. This report in turn supports other controversial and critical regulation adopted by Air Resources Board (ARB). Your actions could create long lasting and damaging reflection on ARB and the California Environmental Protection Agency."*

The report, authored by Mr. Tran, has been problematic and has been called into question several times by other properly credentialed scientists. To use and rely upon such a problematic report to extend the enforcement of this act to those who do not own the trucks is unwise and unjust. Additional scientific study must be conducted before expanding the TRU Act to parties other than truckers and trucking companies. (ALC)

Agency Response: Mr. Hien Tran did not participate in this rulemaking nor did he author any documents that served as reference documents in this rulemaking.

General Comments

32. **Comment**: All trucks should use biodiesel or at least 50 percent biodiesel when in the basin or port vicinity. (JC)

Agency Response: This comment is not specific to the proposed amendments.

33. **Comment:** Several commenters indicated support for the proposed amendments or appreciation for staff's efforts. (NRDC, MECA, ALA, NFL)

Agency Response: No response necessary.

34. **Comment:** Several commenters indicated support for the goal of clean air efforts that promote improved air quality. (ATA, TIA)

Agency Response: No response necessary.

35. **Comment:** Several commenters expressed thanks for staff's work to address their concerns. (CGA, NFL, WGA, TIA)

Agency Response: No response is necessary.

B. Responses to Comments Received During the First 15-Day Public Comment Period

List of Individuals and Businesses Submitting Written Comments Received During the First 15-day Comment Period

Commenter Name	Affiliation	Identification Code
Sean Galleher	Miramar Truck – National Lease	MT-NL
Kirk Marckwald	California Environmental Associates on behalf of Union Pacific Railroad Company and BNSF Railway Company	CEA-UP/BNSF
Shimoda, Chris	California Trucking Association	CTA

36. **Comment:** Since smaller units like Carrier 550's have no retrofit filter, it seems like a waste to force repower with temporary units only good for seven years. These units are generally low hour users, and the harm to the environment by forcing more units to be manufactured verses the gain to repower (minimal) is actually a step backward. Not to mention throwing $6,000 to $7,000 dollars down the drain. This makes no sense, please reconsider this unnecessary burden being placed on California business. Waivers should be granted on this class until either a true clean burning unit is available or a filter. (MT-NL)

Agency Response: These comments are outside the scope of the modifications that were made available during the first 15-Day Public Comment Period; therefore, staff is not legally required to respond. However, it is not true that there is no verified diesel emissions control strategy for the engines used in Carrier Transicold's TRU model Supra 550, which uses a Kubota model Z482-E engine in the [X]KBXL.719KCB engine family, where [X] indicates the model year (e.g. 5 indicates model year 2005). Huss, Inc. has been verified by ARB to sell their MK-35 and MK-50 diesel particulate filters for use on these engines. Huss has been evaluating installation kits for small TRU engines. In the event that these installation kits are not available soon enough, owners of smaller bobtail

TRUs may apply for a compliance extension based on unavailability of compliance technology, under 13 CCR section 2477.5(k). However, new replacement engines are readily available, which would provide the owner with an additional seven years of compliance. At that point, the TRU will be worn out and the van insulation and door seals would be in a deteriorated condition. Replacement of the entire unit or the entire van may make better economic sense.

37. **Comment:** Railway carriers need to move TRU-equipped refrigerated railcars owned by third parties through California. The third party owner may hire the railroad to monitor the TRU's proper operation and fuel level. The railway carrier may activate the third-party's or the railway carrier's contractor to re-fuel, repair, and/or restart TRUs or TRU gen sets as needed to prevent loss of perishable cargo. Those activities are included in the definition of "operate", which puts the railroad under the requirements of an operator for TRUs they don't own. Monitoring, repairing, refueling, and/or re-starting a TRU on behalf of the owner to ensure safe transit of perishable goods should not create a new and significant compliance obligation for the railroads. The compliance obligations of the third party TRU owners/operators should not be shifted to the railroads simply because the railroads are hired to perform necessary functions. We request that ARB clarify through rule language that the railroads do not "operate" third-party TRUs transported by rail. (CEA – UP/BNSF)

Agency Response: These comments are outside the scope of the modifications that were made available during the first 15-Day Public Comment Period; therefore, staff is not legally required to respond. However, it was not staff's intent to trigger operator requirements under the circumstances described by the commenter.

Staff elected to propose additional modifications to clarify this issue by adding section 2477.3(f), to exempt rail carriers from the owner or owner/operator requirements of section 2477.5 for refrigerated railcar TRUs that are owned by third parties, where the rail carrier is only moving the refrigerated equipment for a customer. This exemption would not apply if the rail carrier is leasing the TRU, in which case the lessee requirements of section 2477.12 would apply to the rail carrier. This exemption would also only apply if the railway carrier or its agent is only fueling, monitoring to assure proper operation, keeping in operation, arranging repairs at the request of the owner, or restarting the TRU or TRU gen set engine after an unscheduled shut-down or repair, and is not performing any of the other activities listed under the definition of 'operate.'

It is not staff's intent to exempt rail carriers from the freight broker and freight forwarder requirements of section 2477.8 if the rail carrier is the business entity that hires, contracts for, or dispatches the transport of perishable goods in TRU-equipped or TRU gen set-equipped trucks, tractor-trailers, shipping containers, or railcars on California highways or railways. For example, if a rail

carrier, its parent company, or subsidiary arranges drayage at the ends of the rail leg of perishable food transport, the freight broker or freight forwarder requirements of section 2477.8 would apply to the rail carrier.

38. **Comment:** The railroads need to move noncompliant, non-operating (empty), railroad-owned TRU-equipped refrigerated railcars through California. It is critical for unimpeded rail operations and for efficient operation of interstate commerce, that the railroads can move non-compliant, non-operating railroad-owned TRUs through California. The TRU ATCM's definition of "operate" includes a sentence that says: "A TRU that is operational (e.g. capable of being operated) shall be considered to operate if it is in California." The effect is that all TRUs that are in California and capable of being operated must meet the in-use emissions standards, regardless of whether the engine is running. The railroad's refrigerated railcars are equipped with sophisticated trackside monitors, GPS technology, and computer programs. These systems can monitor whether the TRU engine is running or not. These systems can be used to ensure that a noncompliant TRU does not operate in California and can be used to demonstrate this with automated records. The railroads request that ARB amend the rule with a second 15-Day Modification to revise the definition of "operate" so that it only applies to a motor carrier. (CEA – UP/BNSF)

Agency Response: These comments are outside the scope of the modifications that were made available during the first 15-Day Public Comment Period; therefore, staff is not legally required to respond. However, staff believes that additional clarity can be provided. The sentence in the definition for "operate," which is referred to by the commenter is necessary for enforceability. Staff believes the approach that the railroads proposed is overly broad and may cause the owner/operator requirements to be unenforceable for other types of carriers that don't have the sophisticated tracking, monitoring and reporting systems that the rail carriers now have.

Staff has met with the railroads to discuss an alternative approach, based on the use of automated TRU engine run status monitoring systems, GPS tracking technology, and trackside data acquisition and communication systems with computer data storage systems. Based on these discussions, staff made additional modifications available during a second 15-Day Public Comment Period that creates an exemption under 13 CCR section 2477.3(e) for noncompliant TRUs on refrigerated railcars that are not operating while traveling through California, provided the Executive Officer has previously approved a written compliance plan that is proposed by the railway carrier.

The written compliance plan would clearly identify the monitoring, recordkeeping, and reporting procedures that the railway carrier would implement and utilize to ensure noncompliant TRUs on refrigerated railcars will not operate at any time while in California. The compliance plan would include, without limitation: routes of travel within California, dates of travel, information identifying each

noncompliant TRU by the railroad's reporting mark and the one-to-six-digit number which uniquely identifies each railcar, a description of the automated monitoring and recordkeeping system for reporting the TRU "engine on" and "engine off" status, and the frequency of reporting to ARB, including expedited reporting for violations observed or discovered by the railway carrier. A statement would be required, signed by an authorized railroad representative, declaring that the railway carrier agrees to be bound by the compliance plan. Compliance verification records would be maintained for three years and would be provided to authorized enforcement personnel upon request.

39. **Comment:** The railroads need to move noncompliant, non-operating (empty), railroad-owned TRUs to a location within California for the exclusive purpose of retrofitting the units to comply with the TRU ATCM's in-use standards. The railroads are willing to provide advance written notification to ARB that it will bring a non-running, noncompliant TRU into California to be retrofit to comply with the TRU rule. (CEA – UP/BNSF)

Agency Response: These comments are outside the scope of the modifications that were made available during the first 15-Day Public Comment Period; therefore, staff is not legally required to respond. However, staff believes that the solution that was proposed in response to Comment 38 (immediately above) would also resolve this issue.

40. **Comment:** The railroads request ARB confirm in writing that a number of definitions do not apply to the railroads: "Broker" (e.g. railroads are not brokers); "Freight Broker" (e.g. railroads are not freight brokers); "Carrier" (e.g. railroads are not carriers); "Motor Carrier" (e.g. railroads are not motor carriers); "Dispatch" (e.g. railroads do not dispatch freight or cargo); "Facility" (e.g. railroads do not own or operate facilities); "Freight Forwarder" (e.g. railroads are not freight forwarders); "Receiver" (e.g. railroads are not receivers); "California-Based Receiver" (e.g. railroads are not California-based receivers); "Shipper" (e.g. railroads are not shippers); and "California-Based Shipper" (e.g. railroads are not California-based shippers). (CEA – UP/BNSF)

Agency Response: These comments are outside the scope of the modifications that were made available during the first 15-Day Public Comment Period; therefore, staff is not legally required to respond. However, staff believes the definitions in the TRU ATCM that the railroads are referring to are clear and that no changes are necessary. The definitions for "Broker," "Freight Broker," "Freight Forwarder," "Receiver," California-Based Receiver," "Shipper," and "California-Based Shipper" do not apply to the railroads, provided the railroads do not arrange for the transport of perishable goods, do not hire motor carriers for the transport of perishable goods, and do not warehouse, ship, or receive perishable goods. The railroads are not a "Carrier" or "Motor Carrier" provided they do not provide motor vehicle transportation for compensation. Railroads do not "Dispatch" provided they do not coordinate delivery, pickup, and drop-off

schedules of vehicles, and monitor the delivery of freight from these vehicles. Railroads are not a "Facility" provided they don't have a cold storage warehouse where TRU-equipped trucks, trailers, shipping containers or railcars are loaded or unloaded with perishable goods.

41. **Comment:** ARB's usage of the Office of Environmental Health Hazard Assessment (OEHHA) "Air Toxics Hot Spots Program Risk Assessment Guidelines" to "characterize the health risk impact of TRUs congregating at distribution centers violates California Rulemaking Law under the Administrative Procedures Act in the following ways:

Authority
CTA believes that "the scope of the rulemaking proceeding exceeded the authorities granted to ARB under the current law."

"OEHHA's 'Air Toxics Hot Spots Program Risk Assessment Guidelines' were promulgated pursuant to Health and Safety Code section 44360, which was codified into law by AB 2588 (Connelly- 1987) and subsequently amended by SB 1731 (Calderon-1992)", which requires "that toxic air emissions from stationary sources (facilities) be quantified and compiled into an inventory according to criteria and guidelines developed by the ARB, that each facility be prioritized to determine whether a risk assessment be conducted, and that the risk assessments be conducted according to methods developed by OEHHA." OEHHA has stated that mobile sources and rail lines do not come under the purview of the Hot Spots program [the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, Connelly, stat. 1987; Health and Safety Code Section 44300 et seq.)].

Attempts to include mobile sources in the Air Toxics "Hot Spots" Information and Assessment Act, including AB 2546 (De La Torre [1987]) and AB 1101 (Oropeza [2006]) have failed at the legislature.

TRUs are classified as mobile sources by Health and Safety Code section 39618, and accordingly, "ARB clearly lacks the authority to introduce the Guidelines into a rulemaking proceeding pertaining to mobile sources…" (CTA)

Agency Response: No modification was made in response to this comment. As explained below, the commenter is conflating the issue of whether toxic air contaminants emitted from mobile sources fall within the purview of the Air Toxics "Hot Spots" Information and Assessment Act with the separate and distinguishable issue of whether ARB is precluded from using OEHHA's "Air Toxics Hot Spots Program Risk Assessment Guidelines" in the instant rulemaking. The answer to the latter issue is no.

ARB disagrees that the scope of this rulemaking action exceeded the specific statutory authorities under which the proposed amendments were enacted. ARB

expressly specified in the Staff Report, Initial Statement of Reasons and in the Notice of Public Hearing for this rulemaking action that the proposed amendments were being proposed under the authority of Health and Safety Code sections: 39600, 39601, 39618, 39658, 39659, 39666, 39667, 39674, 39675, 42400, 42400.14, 42400.2, 42400.3.5, 42402. 42402.2, 42410, 43013, 43018.

ARB also discussed its authority to promulgate the amendments in Chapter I, Section C of the Staff Report, and explained there that Health and Safety Code (HSC) sections 39600 and 39601 confer to ARB the general authority and obligation to adopt rules and measures necessary to execute the Board's powers and duties imposed by State law, that HSC sections 43013(b) and 43018 provide ARB broad authority to adopt measures to reduce air pollutant emissions from vehicular and other mobile sources, and HSC section 39618 classifies refrigerated trailers as off-road mobile sources under ARB jurisdiction. Moreover, California's Air Toxics Program, established under California law by AB 1807 (Stats. 1983, Ch. 1047) and set forth in Health and Safety Code sections 39650 through 39675, mandates the identification and control of air toxics in California. The identification phase of the Air Toxics Program requires ARB, with participation of other state agencies, such as the Office of Environmental Health Hazard Assessment (OEHHA), to evaluate the health impacts of, and exposure to, substances and to identify those substances that pose the greatest health threat as toxic air contaminants (TACs). ARB's evaluation is made available to the public and is formally reviewed by the Scientific Review Panel (SRP) established under Health and Safety Code section 39670. Following ARB's evaluation and SRP's review, the Board may formally identify a TAC at a public hearing. Following the identification of a substance as a TAC, Health and Safety Code sections 39658, 39665, 39666, and 39667 requires ARB, with the participation of the air pollution control and air quality management districts, and in consultation with affected sources and interested parties, to prepare a report on the need and appropriate degree of regulation for that substance.

In 1998, ARB identified diesel PM as a TAC with no specified threshold exposure level below which adverse health impacts would be expected, pursuant to HSC sections 39650 through 39675. A needs assessment for diesel PM was conducted between 1998 and 2000 pursuant to HSC sections 39658, 39665, and 39666. This resulted in ARB staff developing, and the Board approving, the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (Diesel RRP) in 2000. The Diesel RRP presented information on the available options for reducing diesel PM and recommended regulations to achieve these reductions. In the Diesel Risk Reduction Plan, ARB identified TRU emissions associated with refrigerated warehouse distribution centers as creating potential cancer risks and included off-road engines in the plan to reduce diesel PM emissions.

None of the statutory provisions cited above prohibits ARB from utilizing OEHHA's "Air Toxics Hot Spots Program Risk Assessment Guidelines" (Guidelines) to evaluate the health risks associated with TRU emissions in its rulemaking actions involving TRUs. Instead, pursuant to the broad scope of authority provided to ARB by those statutory provisions, ARB's usage of the Guidelines to estimate the potential health impacts of emissions generated from TRUs was entirely consistent with the statutory provisions cited in the Authority notes for this rulemaking action.

ARB also notes that the commenter's implication that the Guidelines are completely inapplicable to mobile sources is not accurate. The commenter quoted section 2.3.1.2 of the "Air Toxics Hot Spots Program Risk Assessment Guidelines, Technical Support Document for Exposure Assessment and Stochastic Analysis", Scientific Review Panel Draft, February 2012 to support its statement that "mobile sources and rail lines do not come under the purview of the Hot Spots program." However, the commenter neglected to cite the remaining portion of the language, which is shown below in italicized text.

> "Mobile sources and rail lines do not come under the purview of the Hot Spots program, *but they are required to be evaluated under SB-352. SB-352 requires a risk assessment performed under the Hot Spots risk assessment guidance for proposed school sites within 500 feet of a busy roadway. Dedicated air dispersion models are available for motor vehicle emissions from roadways which are a special type of line source. These models (i.e., CALINE3, CAL3QHCR, and CALINE4) are designed to simulate the mechanical turbulence and thermal plume rise due to the motor vehicle activity on the roadway. However, these dedicated models use the Pasquill-Gifford dispersion stability classes for dispersion; the AERMOD dispersion model uses a more advanced continuous stability estimation method based on observations. The limitation with AERMOD is that the user needs to estimate initial mixing (Szo, and Syo) for mechanical turbulence and thermal plume rise is not available. Consult with the District prior to conducting roadway modeling to determine model use.*
>
> *For practical information on how to simulate roadway emission dispersion using these models, see the California Air Pollution Control Officer's Association (CAPCOA) website at http://www.capcoa.org or the Sacramento Metropolitan AQMD (SMAQMD) website at http://www.airquality.org/ceqa/RoadwayProtocol.shtml. The SMAQMD has a document titled, "Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways"(January, 2010). The ARB recommends this document for SB-352 risk assessments.*

This section shows that even if mobile sources are beyond the purview of the Hot Spots program, they are not therefore conclusively barred from being included in risk assessments conducted using the Hot Spots risk assessment guidance

under other statutory provisions, as evidenced by Senate Bill 352 (Escutia, 2003) [Section 17213 of the Education Code and Section 21158.1 of the Public Resources Code].

Consistency

42. Comment: The ARB's usage of the Guidelines to promulgate regulation is not consistent with the intent of AB 2588 or the subsequently adopted Health and Safety Code sections which codified the Act.

The ARB's usage of the Guidelines to, in part, regulate mobile sources manages to not only be inconsistent with the legislative intent of AB 2588, but also manages to exceed the intended authority granted to promulgate regulations based on information gathered pursuant to the Act. Assemblyman Connelly was quite clear on this matter: The Act gathers information: it does not regulate." (CTA)

Agency Response: No modification was made in response to this comment. The response to Comment 41 is hereby incorporated by reference herein.

As discussed in the response to Comment 41, this rulemaking action is entirely consistent with and does not conflict with those provisions of the Health and Safety Code that the ARB has cited as authorizing its promulgation of the amendments.

This rulemaking action is also consistent with and does not conflict with the provisions of the Air Toxics Hot Spots Program Risk Assessment Guidelines. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, Connelly, stat.1987; Health and Safety Code Section 44300 et seq.) is designed to provide information on the extent of airborne emissions from stationary sources and the potential public health impacts of those emissions. Facilities provide emissions inventories of chemicals specifically listed under the "Hot Spots" Act to the local Air Pollution Control and Air Quality Management Districts and ultimately to the state Air Resources Board. Following prioritization of facilities by the Districts, facilities may be required to conduct a health risk assessment. Because this rulemaking action proposes amendments to existing regulations applicable to TRUs, which the legislature has classified as mobile sources, it is clear that the proposed amendments do not conflict with the information gathering provisions of AB 2588 which apply to stationary sources.

As explained in the response to Comment 41, ARB is promulgating this rulemaking action pursuant to the authority of cited provisions of the Health and Safety Code, including those provisions of California's Air Toxics Program, set forth in Health and Safety Code sections 39650 through 39675, which mandates the identification and control of air toxics in California. Also, as explained in the response to Comment 41, none of those statutory provisions prohibits ARB from

utilizing OEHHA's "Air Toxics Hot Spots Program Risk Assessment Guidelines" to evaluate the health risks associated with TRU emissions in its rulemaking actions involving TRUs.

Reference

43. **Comment:** The ARB failed to reference Health and Safety Code Section 44360, the underlying statute which enables the Guidelines. Any portion of the rulemaking proceeding on which the Board relied upon these guidelines to adopt, amend, or repeal the regulation or were influenced by the health risk assessment promulgated according to these guidelines would fail the "Reference" standard in Government Code 11349.1(a)(5). (CTA)

Agency Response: No change was made in response to this comment. See the responses to Comments 41 and 42.

As explained in the responses to Comments 41 and 42, ARB promulgated the proposed amendments pursuant to the statutory authority of specific provisions of the Health and Safety Code, including provisions of California's Air Toxics Program, set forth in Health and Safety Code sections 39650 through 39675, which mandates the identification and control of air toxics in California. Although ARB used a methodology to assess potential cancer risks from TRU emissions that is consistent with OEHHA's Air Toxics Hot Spots Program Risk Assessment Guidelines, it disagrees with the commenter's assertion that such usage rises to the requisite level requiring it to include HSC 44360 within the list of statutory provisions listed within the "reference" section of this rulemaking action because the proposed amendments neither implement, interpret, or make specific that statutory provision.

Guidelines Substantially Influenced Rulemaking Proceeding

44. **Comment:** The ARB "based its health risk characterization in the Initial Statement of Reasons on methodology promulgated pursuant to the Air Toxics "Hot Spots" Information and Assessment Act. This health risk assessment went on to substantially influence both the rulemaking package itself and the Board's subsequent deliberations.

ARB Staff then went on to present information to the Board based on the OEHHA methodology in question. As demonstrated in the transcript from the October 21, 2011 Board Hearing, ARB staff specifically cites the health risk characterization, per the Guidelines, as the determinant factor on the operational life amendment:

'With respect to extending the operational life for model year 2004 and newer engines, our evaluation showed that the estimated potential cancer risk near many distribution centers is still a concern at the existing seven-year

requirement. Increasing the operational life one, two, or three years would erode cancer risk reductions by 11, 23, and 42 percent.'

We believe this focus on 'near source risk' is a clear break with the traditional purpose of an Air Toxic Control Measure which falls squarely under the purview of the Air Toxic 'Hot Spots' Information and Assessment Act. As cited previously, OEHHA specifically states that 'mobile sources and rail lines do not come under the purview of the Hot Spots program.' " (CTA)

Agency Response: No modifications were made in response to this comment. See the responses to Comments 41, 42, and 43.

As the commenter notes, ARB staff performed a health risk assessment in this rulemaking action to determine the 70-year potential cancer risks associated with exposures to diesel PM emissions from TRU engines at a distribution center. Staff estimated the potential cancer risk using OEHHA risk assessment procedures based on the annual average concentration of diesel PM predicted by the air dispersion model and a health risk factor (referred to as a cancer potency factor) that correlates cancer risk to the amount of diesel PM inhaled. The ARB recommended methodology used to estimate the potential cancer risks is consistent with procedures in OEHHA's Air Toxics Hot Spots Program Risk Assessment Guidelines.

ARB staff presented the findings from its health risk assessment in the Staff Report: Initial Statement of Reasons for this rulemaking action, but notes that it concluded that there were no alternative means to the proposed amendments that would provide similar economic relief to stakeholders with less emissions or public health impacts based on several factors other than the health risk assessment. Specifically, in recommending against the Board's adoption of the alternative identified as Alternative 3 in the Staff Report (which would have delayed compliance with the Ultra-Low-Emission TRU (ULETRU) in-use standard for MY 2004 and newer TRUs for one to three years) staff identified the following factors:

"[t]he analysis showed that the public health risk at the seven-year operational life still resulted in potential cancer risk levels of concern in communities near facilities where TRUs congregate. Therefore, relaxing the in-use requirements by delaying compliance and extending the operational life of TRU engines would only make this risk greater and likely exacerbate concerns regarding elevated risk levels in nearby communities. In addition, owners of older TRUs (e.g. MY 2001 and older, MY 2002, and MY 2003) have been required to meet the in-use standards by 2008, 2009, and 2010, respectively, using a seven-year operational life, so there would be fairness issues if the operational life is changed at this point. Also, the retrofit device manufacturers that have invested significant resources into verifying diesel particulate filters would be left with no market for one or more years, which

would most likely force them to abandon the TRU market. DPFs are a lower-cost compliance option and their total non-availability may cause the cost of other compliance options to increase. Additionally, the TRU ATCM's PM emissions reductions also contribute to ARB's 2014 State Implementation Plan for meeting the federal PM 2.5 standard, so any delayed implementation could jeopardize those commitments and result in loss of federal highway funding. Based on the adverse impacts identified above and discussed in greater detail in Chapter IV, staff rejected Alternative 3." (ISOR, p II-35.)

ARB disagrees with the comment that focusing on the "near source risk" presented by particulate emissions from diesel-fueled engines is inconsistent with the "traditional purpose of an Air Toxic Control Measure." As explained in the response to Comment 41, ARB identified diesel PM as a TAC with no specified threshold exposure level below which adverse health impacts would be expected, and consequently ARB approved the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (Diesel RRP) in 2000. The Diesel RRP identified TRU emissions associated with refrigerated warehouse distribution centers as creating potential cancer risks and included off-road engines in the plan to reduce diesel PM emissions. ARB therefore believes that its consideration of such near source risks is entirely consistent with the traditional purpose of an air toxic control measure.

See response to Comment 41 for ARB's regarding the assertion that "mobile sources and rail lines do not come under the purview of the Hot Spots program."

C. Responses to Comments Received During the Second 15-Day Public Comment Period

List of Individuals and Businesses Submitting Written Comments Received During the Second 15-Day Public Comment Period

Commenter Name	Affiliation	Identification Code
Voltmann, Robert	Transportation Intermediaries Association	TIA

45. **Comment:** TIA supports the Board's efforts to improve compliance rates. (TIA)

Agency Response: No response necessary.

46. **Comment:** TIA supports the exemption for noncompliant, non-operating railcar TRUs passing through California. (TIA)

Agency Response: No response necessary.

47. **Comment:** TIA has concerns with amendments extending responsibilities to brokers. (TIA)

Agency Response: These comments are essentially the same as those made by TIA for the 45-day proposal, which staff responded to, above. See responses to Comments 6, 26, 27, 28, and 30.