

State of California
AIR RESOURCES BOARD

**Final Statement of Reasons for Rulemaking,
Including Summary of Comments and Agency Response**

PUBLIC HEARING TO CONSIDER THE PROPOSED AMENDMENTS TO THE
STATIONARY DIESEL ENGINE MEASURE

Public Hearing Date: November 16, 2006
Agenda Item No.: 06-10-5

I. GENERAL

The purpose of this regulatory action is to amend the existing Airborne Toxic Control Measure for Stationary Compression Ignition Engines (Stationary Diesel Engine ATCM) set forth in section 93115, title 17, California Code of Regulations (CCR) and replace it with sections 93115.1 through 93115.15, title 17, CCR inclusive. These amendments:

- Establish emission performance standards and registration requirements for greater than 50 horsepower (hp) in-use stationary diesel agricultural engines;
- Clarify and improve the implementation and enforcement of existing provisions for prime and emergency standby stationary diesel engines; and
- Renumber the Stationary Diesel Engine ATCM to facilitate determining the applicability of requirements.

The amendments and the reasons for proposing them were contained in the Staff Report: Initial Statement of Reasons for Proposed Requirements for Stationary Diesel In-Use Agricultural Engines (Staff Report). The Staff Report was published on September 29, 2006, for a 45-day comment period and is incorporated by reference herein. On November 16, 2006, the California Air Resources Board (ARB or Board) held a public hearing to consider the proposed amendments.

At the hearing on November 16, 2006, the Board approved the amendments originally proposed in Appendix A of the Staff Report with specified modifications. The Board directed staff to incorporate the staff's suggested modifications in response to comments submitted during the 45-day comment period and public hearing, as well as any conforming modifications as may be appropriate, and to make the modified text available for a 15-day public comment period. Additionally, on December 7, 2006, the Board approved an emergency amendment to the Stationary Diesel Engine ATCM that authorized the ARB's Executive Officer or a local air district to allow a new stationary diesel engine to meet the previous model year's engine emission standards if engines meeting current emission standards were not sufficiently available. This emergency amendment (extended for 180 days by request of ARB's Executive Officer on April 26, 2007) was included among the other specified and conforming modifications to the originally-proposed amendments and released in the Notice of Public Availability of Modified Text and Supporting Documents for a public comment period that began on April 10, 2007, and ended on April 25, 2007. The Notice and the attachments thereto are incorporated herein by reference.

This Final Statement of Reasons (FSOR) for this rulemaking updates the Staff Report by identifying and explaining the modifications made to the original regulatory text and to Appendix D of the Staff Report. This FSOR also summarizes the written and oral comments received during the 45-day comment period preceding the November 16, 2006, public hearing, the hearing itself, and the 15-day comment period for proposed modifications, and contains ARB staff's responses to those comments.

Fiscal Impacts. The Board determined that costs or cost savings, as defined in Government Code sections 11346.5(a)(5) and 11346.5(a)(6), may be associated with this rulemaking as described below:

- Relatively minor cost impacts are anticipated for a few State correctional facilities and universities that own and operate agricultural engines. The compliance costs for the small number of affected engines (i.e., less than 10 Statewide) are expected to be well within existing State agency budgets.
- No local agency- or school-owned agricultural engines have been identified. If local agencies or school districts do own or operate such engines, any compliance costs incurred by these institutions are not reimbursable pursuant to Part 7 (commencing with section 17500), Division 4, Title 2 of the Government Code, because, pursuant to section 17556 of the Government Code, private sector agricultural engine owners or operators are subject to the same requirements and costs.
- Significant costs are anticipated for the local air districts responsible for implementing and enforcing the amended Stationary Diesel Engine ATCM. These costs are associated with the development and administration of agricultural engine registration programs, compliance outreach and assistance, inspections, and enforcement actions, as necessary. State law allows the local air districts to charge fees to recover these costs. In addition, section 93115.8(d) of the amended Stationary Diesel Engine ATCM contains a provision requiring affected owners or operators to pay local air district fees for registration and other implementation and enforcement activities.
- No effect on federal funding to the State has been identified.

Since more than 90 percent of California's agricultural operations are small businesses, ARB staff developed in-use agricultural engine requirements with small agribusiness financial impacts in mind. For this reason, there was no need to specifically consider small business compliance alternatives pursuant to section 11346.9(a)(5) of the Government Code.¹

Consideration of Alternatives. The amendments proposed in this rulemaking were the subject of discussions involving ARB staff, local air districts, affected engine owners, operators, manufacturers, dealers, and others. A discussion of alternatives to the regulatory proposal is found in Chapter IV of the Staff Report. These included a "no action" alternative and an alternative requiring electrification of all in-use agricultural

¹ Section 11346.9(a)(5) of the Government Code (APA) provides that the FSOR shall contain an "explanation setting forth the reasons for rejecting any proposed alternative that would lessen the adverse economic impact on small businesses."

engines. ARB staff determined that the "no action" alternative would not be health protective and that electrification of all in-use agricultural engines was not feasible due to the extremely diverse and variable nature of California agricultural operations and due to electric power infrastructure and cost concerns.

Additional proposed alternatives were submitted by commenters during the rulemaking process and considered by the Board. 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 none of the alternatives considered by the agency, or otherwise identified and 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.²

II. MODIFICATIONS MADE TO THE ORIGINAL PROPOSAL

Several modifications to the original proposal were made to address comments received during the 45-day public comment period and the Board's directions to ARB staff during the public hearing regarding appropriate conforming modifications. These modifications included: 1) expanding applicability for the remotely-located agricultural engine exemption; 2) clarifying registration and reporting requirements for agricultural engines; 3) eliminating the requirement for sellers to report engine operating hours at the time of delivery; 4) changing the "New Compression Ignition Engine" definition to clarify applicability of Tier 1- and Tier 2-certified in-use agricultural engine requirements; 5) clarifying the alternative compliance options for the 0.01 grams per brake horsepower-hour (g/bhp-hr) diesel particulate matter (diesel PM) emission limit; 6) adding an exemption to address insufficient availability of new compliant engines; 7) updating references to the National Fire Protection Association 25 - Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems; 8) clarifying that engine testing includes testing of engine components, such as turbochargers; 9) clarifying that emission standards apply to agricultural engines rather than agricultural operations; and 10) clarifying that emission data requirements are intended to demonstrate compliance with emission limits. These modifications and the rationale for making them are described in the Notice of Public Availability of Modified Text and Supporting Documents (April 10, 2007).

Also, in accordance with Government Code section 11347.1, the Notice of Public Availability of Modified Text and Supporting Documents (April 10, 2007) included a revised Staff Report Appendix D (Emission Inventory Methodology) to be added to the rulemaking file. The Notice explained that ARB staff had revised Appendix D to revise emission and fuel correction factors and to apply emission rate deterioration factors over the total life, rather than the average or "useful" life, of diesel agricultural irrigation pump engines. These changes resulted in an overall 15 percent reduction in 2003 base year emission estimates, but did not substantially affect the regulation's anticipated percent emission reductions or cost impacts. In addition, a copy of the National Fire

² Section 11346.9(a)(4) of the Government Code (APA) provides that the FSOR shall contain a "determination with supporting information that no alternative considered by the agency would be more effective in carrying out the purpose for which the regulation is proposed or would be as effective and less burdensome to affected private persons than the adopted regulation."

Protection Association 25 - Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, 2002 edition, was added to the rulemaking file.³

The Notice of the Public Availability of Modified Text and Supporting Documents (April 10, 2007), including a copy of modified section 93115.1 through section 93115.15 inclusive, was mailed to each of the individuals described in subsections (a)(1) through (a)(4) of title 1, California Code of Regulations, section 44. Additionally, this Notice was made available on ARB's website at <http://www.arb.ca.gov/regact/agen06/agen06.htm>. By these actions, the modified text of section 93115.1 through section 93115.15 inclusive was made available for a 15-day comment period from April 10 through April 25, 2007, pursuant to Government Code section 11346.8. Responses to comments submitted during the 15-day comment period for these modifications are presented in Section III.B of this FSOR.

Non-substantial or Solely Grammatical Modifications Made After the Close of the 15-Day Comment Period

In addition to the modifications described above, the following non-substantial or solely grammatical modifications were made after the close of the 15-day comment period:

- Authority and Reference notes were added at the end of each new section.
- Text was added to section 93115 explaining that the ATCM consists of sections 93115 through 93115.15, and the title of the ATCM was inserted into the beginning of each of the remaining section titles, for clarity.
- The fonts of section, subsection and table titles, and of table headings, were changed, to be consistent with Barclays California Code of Regulations and for clarity. Periods were added at the end of some headings, and "Section" was changed to "§" in section titles.
- The listing of the 79 definitions was converted back from lettering to numbering, by inserting "(a)" at the beginning of the first sentence of section 93115.4.
- In section 93115.4(a)(52), the words "meet an" were deleted from the definition of "Noncertified Engine."
- In section 93115.4(a)(65), the words "in the most current RBRP Schedule" were changed to "in accordance with the most current RBRP Schedule," in the definition of "Rolling Blackout Reduction Program (RBRP)."
- In section 93115.13(d)(1), the comma was deleted after the word "APCO's."

³ Section 11346.9(a)(1) of the Government Code (APA) provides that the FSOR shall contain an "update of the information contained in the initial statement of reasons. If the update identifies any data or any technical, theoretical, or empirical study, report, or similar document on which the agency is relying in proposing the adoption, amendment, or repeal of a regulation that was not identified in the initial statement of reasons, or which was otherwise not identified or made available for public review prior to the close of the public comment period, the agency shall comply with Section 11347.1." If material has been incorporated by reference in the regulation, the FSOR must demonstrate "that it would be cumbersome, unduly expensive, or otherwise impractical to publish the document in the CCR." The FSOR must also indicate how copies of the documents can be obtained, i.e., from a commonly known source or from ARB, with instructions regarding requesting copies of the document, or if from some other source, identify that source and provide the information necessary to obtain a copy of the document. [Title 1, CCR, sec. 20]

III. SUMMARY OF COMMENTS AND AGENCY RESPONSES

The Board received numerous written and oral comments in connection with the 45-day comment period and November 16, 2006, Board hearing. Additional comments were received during the 15-day comment period for modifications to the original proposal. A list of comments received is set forth below, identifying the date and form of all comments submitted. Following the list of comments received is a summary of each objection or recommendation made regarding the proposed action, together with an explanation of how the proposed action has been changed to accommodate the objection or recommendation, or the reasons for making no change.

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

Comments Received

<u>Abbreviation</u>	<u>Commenter</u>
ALA	Bonnie Holmes-Gen American Lung Association Oral Testimony: November 16, 2006
BCAQMD - 1	Bill Connelly, Chair Butte County Air Quality Management District Governing Board Written Comment: November 3, 2006
BCAQMD - 2	W. James Wagoner, Air Pollution Control Officer Butte County Air Quality Management District Written Comment: November 15, 2006 (submitted by Robert McLaughlin) Written and Oral Testimony: November 16, 2006
CAPCOA	Larry Allen, President California Air Pollution Control Officers Association Written Comment: November 13, 2006
CEI	John Paoluccio, PE Consulting Engineers, Inc. Written Comment: November 21, 2006

CFBF	Cynthia L. Cory Director, Environmental Affairs California Farm Bureau Federation Written Comment: November 10, 2006 (submitted by Andrea Fox)
CRC	Paul Buttner Manager, Environmental Affairs California Rice Commission Written Comment: November 14, 2006 Oral Testimony: November 16, 2006
Din	Darlene Din, Agricultural Policy/Land Use Consultant Written Comment: November 15, 2006
Fahdl	Jon Fahdl Jovia Farms Written Comment: November 13, 2006
MBUAPCD	Douglas M. Quetin, Air Pollution Control Officer Monterey Bay Unified Air Pollution Control District Written Comment: November 8, 2006
MCAQMD	J. David Colfax, Chair Mendocino County Air Quality Management District Written Comment: October 17, 2006
MECA	Jamie Song Manufacturers of Emission Controls Association Written Comment: November 13, 2006
SCEC	Karl A. Lany, Vice President SCEC Air Quality Specialists Written Comment: November 2, 2006 Oral Testimony: November 16, 2006
SJVAPCD -1	Rick McVaigh, Deputy Air Pollution Control Officer San Joaquin Valley Air Pollution Control District Written Comment: November 9, 2006
SJVAPCD - 2	Tom Jordan, Projects Administrator San Joaquin Valley Air Pollution Control District Oral Testimony: November 16, 2006
SVBAPCC	Curt Josiassen, Chair Sacramento Valley Basinwide Air Pollution Control Council Written Comment: November 1, 2006

**Comments and Responses Regarding In-Use Stationary Diesel
Agricultural Engine Requirements**

Outreach

1. Comment: The Board should delay action on requirements for in-use agricultural engines and reschedule the public hearing to a later date in Sacramento. Additional time is needed to inform agricultural engine owner/operators about the proposed requirements and to allow participation in the regulatory process. The metropolitan San Francisco location for the public hearing is not the appropriate venue to consider requirements that primarily affect the rural agricultural community. A Sacramento public hearing would allow more growers to attend and be heard by the Board. (BCAPCD - 1; BCAQMD - 2; Fahdl; MBUAPCD; SVBAPCC)

Response: The Board considered and approved in-use agricultural engine requirements during a public Board meeting in San Francisco on November 16, 2006. At the request of agricultural industry representatives, the regulatory item that included in-use agricultural engine requirements had already been rescheduled from October 2006 (Sacramento) to the November 2006 (San Francisco) Board meeting. Prior to rescheduling, ARB staff informed agricultural industry representatives that a Sacramento location could not be guaranteed in November because Board meeting locations are arranged well in advance. Additional delays were not warranted because the November Board meeting was webcast for those who could not attend in person and because the combination of outreach already conducted and additional outreach planned for the agricultural community (as described below) was deemed sufficient.

Outreach during development of the in-use agricultural engine requirements is described in Chapter II of the Staff Report and included: four public workshops (three workshops in Sacramento were webcast, the Modesto workshop was not webcast); two public consultation meetings (Colusa and Durham); numerous additional meetings with representatives from agricultural industry organizations (e.g., Nisei Farmers League, California Farm Bureau Federation, California Citrus Growers, California Cotton Ginners and Growers Association, California Rice Commission), agricultural equipment manufacturers and dealers, CAPCOA, and others; a webpage and list serve with more than 1,500 stakeholders; a mailing list of approximately 3,900 individuals identified by several local air districts; a California Farm Bureau Federation newspaper article (circulation

39,000); and a fact sheet available on ARB's website and distributed at public workshops and on Ag. Day at the State Capitol (March 2006).

In addition, ARB staff and local air districts will coordinate additional post-adoption outreach regarding the Amended ATCM's agricultural engine requirements. Beginning in early 2007, ARB staff began working with local air districts to develop informative materials for agricultural engine owners and operators. These materials will include a Frequently Asked Questions (FAQ) document specifically addressing regulation requirements, compliance options, and potential incentive funding and other financial assistance. The outreach materials will be disseminated via grower contact lists, agricultural engine dealers and service operations and will be discussed during Statewide workshops. This ARB/local air district outreach effort will occur well before the Amended ATCM's initial March 1, 2008, compliance date for in-use agricultural engine registration. ARB has also committed to assist local air districts with initial outreach mailing costs and risk screening, as necessary.

2. Comment: Although the Amended ATCM's in-use agricultural engine requirements will significantly impact agricultural engine owner/operators throughout California, ARB's outreach efforts have primarily focused on San Joaquin Valley agricultural representatives. Additional time and resources should be provided for outreach to affected growers in other regions of the State prior to the effective date of this measure because, historically, agricultural emission sources have not been subject to air quality regulation and because the Amended ATCM will have a significant impact on the agricultural community. (BCAQMD - 2; CAPCOA; CFBB; MBUAPCD)

Response: As explained in the response to Comment 1, ARB and local air districts are working together to conduct a significant outreach effort throughout California. As part of this effort, ARB and local air district staff will work with the agricultural industry and others to provide informative materials to, and hold workshops for, affected agricultural engine owners and operators in all areas of the State.

3. Comment: ARB and local air districts should provide information on how to implement an alternative fuel compliance strategy for in-use agricultural engines well before the Amended ATCM's deadlines because growers need time to weigh compliance options. In addition, ARB and local air district staff should provide timely and consistent information on both short-term and long-term requirements so growers can avoid costly engine replacement before the end of useful engine life. (CFBB)

Response: ARB and the local air districts will address the concerns expressed in this comment during the additional post-adoption outreach effort mentioned in the responses to Comments 1 and 2, above. During additional outreach, ARB staff and local air districts will discuss all agricultural engine air quality requirements and compliance options, including an alternative fuel compliance strategy, with growers. The goal of additional outreach is to provide information that will enable growers to plan ahead and comply with all requirements using a single,

cost-effective strategy suited to their operations. ARB and the districts will encourage growers to seek special advice and assistance if their engines could present a potential residual cancer risk (e.g., a Tier 3-certified engine located within one-quarter mile of a residential area, school, hospital, and/or receptor). Such growers will be advised to select a strategy that avoids having to replace/retrofit an agricultural engine twice – once to meet the Amended ATCM and again to address subsequent residual cancer risk requirements pursuant to local air district AB 2588 "Hot Spots" Programs. See also the response to Comment 10.

4. Comment: ARB should ensure consistent local air district agricultural engine requirement implementation and enforcement throughout California. (CFBF)

Response: Although local air districts have the authority to require additional or more stringent requirements, the Amended ATCM's in-use agricultural engine emission limits and registration requirements and ARB staff's plans for additional outreach (see responses to Comments 1 and 2) are expected to result in generally consistent Amended ATCM implementation and enforcement. Section 93115.8(c) of the Amended ATCM provides basic requirements for agricultural engine registration – the primary means of implementation and enforcement of Amended ATCM requirements. Section 93115.8(c)(4) specifically requires that the ARB Executive Officer approve any local air district alternative to the registration requirements of the Amended ATCM. During Amended ATCM outreach, ARB will work closely with local air districts to develop consistent informational materials for agricultural engine owners and operators.

Any local air district agricultural engine requirements that materially differ from those of the Amended ATCM will be subject to a public rulemaking process (lead by the local air district), including review and comment by the local agricultural community and ARB.

5. Comment: ARB staff should develop a model agricultural engine registration program for local air districts to facilitate implementation of the Amended ATCM. (SVBAPCC)

Response: ARB staff does not believe that a model agricultural engine registration program is necessary. As mentioned in the response to Comment 4, section 93115.8(c) of the Amended ATCM establishes basic registration requirements to serve as an implementation and enforcement mechanism for agricultural engine emission limits. Additionally, ARB staff has developed and distributed (via CAPCOA) a sample registration form. We expect that most local air districts will use these basic requirements and the sample registration form, but they will also have the flexibility to tailor them to their specific needs. The San Joaquin Valley Unified Air Pollution Control District has already adopted its own registration program for nonpermitted agricultural and other engines (District Rule 2250 Permit-Exempt Equipment Registration) and the South Coast Air Quality Management District intends to require permits, rather than registration, for agricultural engines. These local air district programs also serve as representative registration (or equivalent) programs.

Applicability

6. Comment: Amended ATCM requirements for agricultural engines should only regulate/control diesel PM and other toxic air contaminants. The Amended ATCM should not be used to regulate criteria pollutants, such as oxides of nitrogen (NO_x), hydrocarbons (HC), or carbon monoxide (CO). Nor should the Amended ATCM be used to assist local air districts in meeting national criteria pollutant ambient air quality standard attainment goals. Meeting attainment goals is the purpose of the State Implementation Plan (SIP) process, California Clean Air Act All Feasible Measures process, and/or district new source review rules. (BCAQMD -1; BCAQMD -2; CRC; MBUAPCD; MCAQMD; SVBAPCC)

Response: ARB staff disagrees with the recommendations in this comment and notes that the existing Stationary Diesel Engine ATCM already contains NO_x, HC, and CO emission limits for new and in-use nonagricultural engines and for new agricultural engines.

State law provides ARB with broad authority to adopt air quality standards and regulations necessary to protect public health. California Health and Safety Code (HSC) section 43013 specifically provides ARB with additional authority to regulate criteria pollutants. The Amended ATCM's NO_x, HC, and CO emission limits for in-use agricultural engines ensure that criteria pollutant emissions do not inadvertently increase as a result of diesel PM toxic air contaminant measures. Such emission limits are health protective because all criteria pollutants are associated with direct and/or indirect noncancer adverse health effects. Also, NO_x is a precursor to ambient PM while NO_x and HC are precursors to ozone. We expect secondary PM from NO_x to become a bigger health issue in the future as more data is gathered on the adverse effects of very small particulate matter less than or equal to 2.5 microns in diameter (PM 2.5). In addition, a federal maximum achievable control technology (MACT) standard for the HC formaldehyde has been established for certain stationary diesel engines, including affected agricultural engines, as part of the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR Part 63, Subpart ZZZZ). From a health perspective, consideration of NO_x and HC in diesel exhaust is clearly warranted.

From the perspective of the regulated community, ARB staff believes it is less resource intensive and more cost-effective to establish and comply with consistent multiple air pollutant standards for a given exhaust stream (e.g., in-use stationary diesel agricultural engines) within the context of a single regulatory action.

In addition, State law (HSC §39602) designates ARB as the State agency for all purposes under federal law, including the preparation of the State Implementation Plan and the achievement of national ambient air quality standards for criteria pollutants pursuant to the federal Clean Air Act. To fulfill this responsibility, ARB is required to coordinate the activities of local air districts to comply with the Act. Also, State law (HSC §39614) specifically required ARB,

in consultation with local air districts, to develop a list and implementation schedule of all feasible control measures for existing stationary, mobile, and area emission sources of PM 2.5 and PM 10. In enacting this law (Senate Bill 656, 2003 Sher), the Legislature mandated that the ARB and local air districts also control "precursors that contribute to formation of particulate matter, including, but not limited to, oxides of nitrogen, sulfur oxide, reactive organic gases, and ammonia."

7. Comment: Commenters expressed support for the Amended ATCM's proposed remotely-located agricultural engine exemption, provided there is no risk to public health. (MCAQMD; SVBAPCC)

Response: It is not practical to base an exemption on an in-use stationary diesel agricultural engine that poses absolutely "no risk to public health" because no safe thresholds have been identified for diesel PM and other toxic air contaminants in diesel exhaust. However, the Amended ATCM addresses the public health risk concern expressed in this comment by requiring an engine to be located more than one-half mile from a residential area, school, or hospital in order to be eligible for the remotely-located agricultural engine exemption. Such an engine is associated with an estimated cancer risk of less than 10 chances in a million – an "acceptable" risk level for most risk management purposes. See also the response to Comment 9.

8. Comment: The remotely-located agricultural engine exemption should be based solely on toxic air contaminant health risk considerations. It should not be limited to engines located in federal ozone and particulate matter national ambient air quality standard attainment areas. (BCAQMD - 1; BCAQMD - 2; SVBAPCC)

Response: The Board approved the Amended ATCM's remotely-located agricultural engine exemption with the requirement that eligible engines be located in areas that meet national ambient air quality standards for ozone and PM. ARB staff believes that emissions should be reduced to their lowest achievable level using best available control technology (BACT). The Amended ATCM's approach implements BACT for diesel PM while significantly reducing the probability that both criteria pollutant emissions such as NO_x and PM from remotely-located agricultural engines would contribute to emission exceedances for federal ozone and PM standards. ARB staff believes that this is a cost-effective approach which not only reduces diesel PM emissions but helps set the stage for improving air quality in areas of the State that exceed federal ozone and PM standards. Modifying the exemption to make it available in nonattainment areas would most likely result in the implementation of more costly strategies to bring those areas into compliance with the federal standards. See also the response to Comment 6.

9. Comment: The Amended ATCM should require a remotely-located agricultural engine to be located at least one-half mile from any "residential area," rather than one-half mile from any "receptor location." (CRC)

Response: The remotely-located agricultural engine exemption eligibility criterion in the originally-proposed Amended ATCM was changed from an engine "located more than one-half mile from any receptor location" to an engine "located more than one-half mile from any residential area, school, or hospital." As explained in the Notice of Public Availability of Modified Text and Supporting Documents (April 10, 2007), this change is expected to relieve additional agricultural engine owners and operators from the burden and cost of replacing or retrofitting remotely-located engines without affecting the overall health-protectiveness of the regulation. See also the response to Comment 7.

10. Comment: AB 2588 Air Toxics "Hot Spots" Program requirements should be removed from the Amended ATCM. The "Hot Spots" Emission Inventory Criteria and Guidelines should be used for regulating in-use agricultural engines that pose a residual health risk consistent with the regulation of residual health risk for nonagricultural engines. (BCAQMD - 2; SVBAPCC)

Response: No change to the Amended ATCM is necessary because its requirements and provisions are already consistent with the AB 2588 Air Toxics "Hot Spots" Program and with the Emission Inventory Criteria and Guidelines for the Air Toxics "Hot Spots" Program.

The Amended ATCM does not contain AB 2588 Air Toxics "Hot Spots" Program requirements. However, during the development of in-use agricultural engine requirements, ARB staff recognized that Tier 3 standard-compliant engines located close to receptors could pose an unacceptable diesel PM cancer risk pursuant to local air district AB 2588 requirements. Very clean Tier 4 PM standard-compliant engines, which are not expected to pose a significant cancer risk, may not be widely available (and eligible for Carl Moyer Program incentive funding) until about 2012-13 – too late to meet the Amended ATCM's December 31, 2010-11, compliance dates for Tier 0 engine emission limits. This could have limited an "at risk" Tier 0 engine owner/operator's compliance options to electrification or to an expensive "sequential" compliance strategy involving replacement with a Tier 3 engine by December 31, 2010-11, followed by the retrofit or replacement of that engine by December 31, 2014-15.

To provide additional compliance flexibility for these owner/operators, ARB's ATCM and AB 2588 staff developed compliance extension provisions consistent with meeting both Amended ATCM emission limits and local air district AB 2588 Air Toxics "Hot Spots" program requirements. This approach significantly reduces the likelihood that a grower would take action to comply with the Amended ATCM only to be notified at a later date that additional action was needed to comply with local AB 2588 requirements. See also responses to Comments 3 and 23.

11. Comment: Amended ATCM requirements for in-use agricultural engines should apply only to diesel-fueled compression ignition (CI) engines. Amended ATCM emission limits and other requirements should not apply to CI engines using 99 to 100 percent biodiesel (B-99 to B-100), unless studies demonstrate a toxic

air contaminant health risk from such fuels. (BCAQMD - 2; MCAQMD; SVBAPCC)

Response: No change was made as a result of this comment. At the public hearing on November 16, 2006, the Board approved the Amended ATCM's in-use agricultural CI engine fuel requirements for all types of fuel used, including B-99 and B-100. Currently, considerable work is being done to investigate the health impacts of emissions from the use of B-99 and B-100. Due to the uncertainty surrounding B-99 and B-100 health impacts and potential impacts on NOx emissions, it is appropriate to impose fuel requirements similar to those for other fuels. If necessary, ARB can revisit this issue as additional data becomes available.

12. Comment: ARB staff should provide justification for regulating biodiesel under the Amended ATCM, documentation regarding biodiesel's toxic air contaminant and criteria pollutant emission impacts, and advice on how biodiesel may be used to comply with the Amended ATCM. (CAPCOA)

Response: ARB staff believes that the current uncertainty about biodiesel health and emission impacts justify imposing the same fuel-use requirements for biodiesel as for other fuels. The investigation of potential toxic or other adverse health effects from biodiesel use is ongoing. Therefore, the Amended ATCM requires in-use agricultural engines using biodiesel to meet the same emission limits that similar engines using diesel and other types of fuel must meet (see also the response to Comment 11). However, biodiesel fuel can be used in stationary engine applications without having to be approved under the "Retrofit Verification Program."

During additional outreach for the Amended ATCM (as discussed in the responses to Comments 1 and 2), ARB staff will address biodiesel use as a compliance strategy. Before the use of biodiesel is approved as an acceptable compliance method by a local air district, the measurement of engine exhaust pollutants (i.e., an "emissions source test" or "source test") may be necessary to demonstrate that the ATCM's NOx emission limits will not be exceeded. While the use of 100 percent biodiesel and some biodiesel blends is known to reduce diesel PM emissions, it is also known to increase emissions of NOx. There is insufficient data to predict the extent to which NOx emissions will increase. Existing data indicates that the increase will vary with the percent biodiesel used; the feedstock from which the biodiesel is produced; and with engine age, design, horsepower rating, and mode of operation. In addition, the efficacy of biodiesel fuel additives intended to reduce NOx emissions needs to be investigated in a wide array of engines. For these reasons, add-on NOx control devices and/or source testing may be required if biodiesel is used to comply with Amended ATCM requirements.

13. Comment: To clarify that stationary diesel engines identified in section 93115.2(a) (Applicability) are exempt from the Amended ATCM, section 93115.2(a) should be moved to section 93115.3 (Exemptions). (CAPCOA)

Response: The change recommended in this comment was not made because ARB staff believes that the engines identified in section 93115.2(a) should be distinguished from those exempted in section 93115.3. As set forth, section 93115.2(a) clarifies that the following CI engines are not regulated by, or subject to, the Amended ATCM: an engine that is portable or used to provide motive power, a marine vessel auxiliary engine, or an agricultural wind machine. In contrast, section 93115.3 identifies engines that are subject to the Amended ATCM, but are conditionally exempt and/or exempt from specified requirements.

Amended ATCM Requirements and Compliance

14. Comment: Only in-use agricultural engines for which a public health risk has been demonstrated should be required to be replaced or retrofitted. (BCAQMD - 1; MCAQMD; SVBAPCC)

Response: ARB staff disagrees with the recommendation that no in-use agricultural engine be required to comply with the Amended ATCM's emission limits unless a site-specific health risk assessment demonstrates unacceptable cancer risk.

In-use agricultural engines are numerous, widespread, and emit diesel PM, a toxic air contaminant that has been identified with no safe exposure level. Consistent with State law, the Amended ATCM's in-use agricultural engine requirements are designed to reduce this source category's diesel PM emissions to the lowest level achievable through the application of best available control technology or "BACT." ARB staff has determined that BACT for in-use agricultural engines should be based on California and federal off-road CI engine certification standards for new engines. Similar to existing Stationary Diesel Engine ATCM requirements that require nonagricultural engines to meet emission limits whether or not site-specific health risk assessments have been conducted, the Amended ATCM's in-use agricultural engine emission limits are expected to maximize diesel PM emission reductions and substantially address exposure and cancer risk from this source category.

Requiring a health risk assessment for each in-use agricultural engine to justify imposing Amended ATCM emission limits would be an extremely time-consuming, resource-intensive, and costly means of reducing diesel PM from this source category. During registration pursuant to section 93115.8(c) of the Amended ATCM, local air districts are expected to identify a few in-use agricultural engines located close to receptors that may pose a significant cancer risk even though they comply with the Amended ATCM. It is more practical and cost-effective to determine and address the remaining or "residual" cancer risk from these in-use engines pursuant to established Emission Inventory Criteria and Guidelines for the Air Toxics "Hot Spots" Program and local air district AB 2588 "Hot Spots" Program requirements than to conduct such health risk assessments on all in-use agricultural engines.

15. Comment: Add-on control devices are currently available to help meet the Amended ATCM's requirements for in-use agricultural engines. Several Level 3 (i.e., 85 percent control) PM devices have already been verified for certified stationary diesel engines under ARB's protocols and could be used on engines in the agricultural sector. Also, several additional advanced devices/technologies under development could provide future retrofit compliance options to reduce both diesel PM and NOx emissions. These devices/technologies include diesel oxidation catalysts, diesel particulate filters, selective catalytic reduction, and lean-NOx catalyst technology as well as advanced diesel particulate filters which minimize NOx and PM emissions. The aforementioned devices/technologies may be used separately or in combination. (MECA)

Response: The concern that add-on control devices (i.e., retrofits) be considered as a potential Amended ATCM compliance option is addressed by the Amended ATCM's establishment of in-use agricultural engine emission performance standards. These emission standards or "limits" allow growers to select the best compliance strategy for their individual agricultural operations, including, but not limited to, add-on control devices. See the response to Comment 16 for additional compliance options.

ARB staff notes that a compliance-by-retrofit strategy should be carefully evaluated for in-use noncertified or "Tier 0" agricultural engines (uncontrolled engines typically manufactured prior to 1996) because verified add-on PM control devices are available for Tier 1- and Tier 2-certified engines, but are not available for higher-emitting Tier 0 engines. In addition, retrofits should be carefully evaluated for in-use Tier 1 and Tier 2 agricultural engines subject to existing San Joaquin Valley Unified Air Pollution Control District and South Coast Air Quality Management District NOx emission limits because add-on control devices that enable an engine to meet both Amended ATCM PM and district NOx emission limits may cost nearly as much as engine replacement.

16. Comment: The majority of agricultural engine owners in northern California's rice-growing areas can not consider electrification as a compliance strategy because they don't have access to electrical power (i.e., agricultural engines are located too far away from the electrical power infrastructure). (SVBAPCC)

Response: The concern expressed in this comment is addressed by the Amended ATCM's establishment of in-use agricultural engines emission performance standards or "limits." Engine replacement with an electric motor is not required in order to comply with these emission limits. ARB staff does encourage electrification of in-use agricultural engines where feasible in order to maximize multiple air pollutant emission reductions and minimize diesel PM exposure and risk. However, provided the Amended ATCM emission limits are met, the engine owner or operator has the flexibility to choose the method of compliance. For example, a grower may comply by replacing an engine with an electric motor or a new CI or spark-ignited engine; retrofitting the engine with an add-on control device; or using alternative fuels or alternative diesel fuels. This allows the grower to decide the most reliable and cost-effective compliance

strategy for his or her particular agricultural operation. See also the response to Comment 15.

In addition, Sacramento Valley basin and other agricultural engines located more than one-half mile from residential areas, schools, or hospitals in federal ozone and PM attainment areas are expected to qualify for the Amended ATCM's remotely-located agricultural engine exemption. In-use remotely-located agricultural engines are required to be registered, but are not required to meet emission limits.

17. Comment: The Amended ATCM should provide exemption criteria for diesel-fueled engines that are used when electricity is not available. (BCAQMD - 2)

Response: The Amended ATCM's section 93115.3(a) exemption for diesel-fueled agricultural emergency standby generator set engines addresses the concern expressed in this comment. These generator set engines are exempt from in-use agricultural engine emission limits provided they are equipped with nonresettable hour meters and provided owners or operators register and maintain annual operating hour records for them. They may be used when electricity is not available (i.e., during an electrical power failure) and also during emergencies such as fires and floods.

18. Comment: Growers should be encouraged to use renewable biodiesel fuel to reduce air pollution and improve engine efficiency. (CEI)

Response: As previously mentioned in the response to Comment 16, provided Amended ATCM emission limits are met, the engine owner or operator has the flexibility to choose the method of compliance, including use of alternative diesel fuels such as biodiesel blends. During outreach, ARB staff will encourage each grower to weigh available options and decide which compliance strategy is the most reliable and cost-effective for his or her particular agricultural operation. See also the responses to Comments 11 and 12 for further information on biodiesel and Amended ATCM requirements for in-use agricultural engines.

19. Comment: In-use nonagricultural and agricultural stationary diesel engines should be subject to the same emission standards and their owner/operators should have the same choice of compliance options. For example, 85 percent diesel PM reduction from baseline emission levels should be a compliance option for in-use agricultural engines as well as for in-use nonagricultural engines. (BCAQMD - 1; BCAQMD - 2; SVBAPPC)

Response: Based on discussions and information gathered during the development of in-use agricultural engine requirements, ARB staff disagrees with the comment that in-use nonagricultural and agricultural engine requirements should be identical. In comparison to nonagricultural prime engines, agricultural engines are generally operated less frequently and most are located outside major population areas. Consequently, agricultural engines tend to be replaced and serviced less frequently, but also tend to contribute less to diesel PM

exposure on a per engine basis than nonagricultural engines. Therefore, it is appropriate to consider emission standards and other requirements for agricultural engines separately from nonagricultural engines.

Accordingly, with the exception of the alternative compliance demonstration provision specific to 0.01 g/bhp-hr diesel PM emission standards in section 93115.13(f), an 85 percent PM reduction compliance option is not appropriate for agricultural engines for the following reasons:

- Nonagricultural engines in California consist primarily of Tier 1- and Tier 2-certified engines while approximately 42 percent of agricultural engines are pre-1996 uncontrolled, noncertified "Tier 0" engines; and
- There is currently no verified control device that has achieved 85 percent diesel PM control with a Tier 0 engine whereas there are verified devices that achieve 85 percent PM control with Tier 1- and Tier 2-certified engines.

Additionally, during regulatory development, agricultural industry representatives expressed a preference for engine replacement over add-on diesel PM control devices. The industry identified several reasons for this preference, including:

- San Joaquin Valley Unified Air Pollution Control District and South Coast Air Quality Management District air district NOx emission limits coupled with the Amended ATCM's diesel PM emission limits would require control devices for both NOx and PM which would be nearly as costly as replacing an engine;
- Incentive funding programs favor multiple pollutant emission reduction which is more cost-effectively achieved by replacing an engine with an electric motor or new, cleaner engine; and
- Some add-on control devices require periodic maintenance, which increases operational costs, for proper operation of the device and the engine.

20. Comment: Portable and stationary diesel agricultural engine compliance standards and timelines should be harmonized because, depending on use, an individual engine could be subject to the Stationary Diesel Engine ATCM or the Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower. For example, fleet averaging should be allowed for in-use stationary, as well as in-use portable, diesel agricultural engines. (SVBAPCC)

Response: The Amended ATCM's in-use agricultural engine requirements were not changed to address this comment. During the development of the Amended ATCM, staff worked with both the regulated community and local air pollution control districts and there was little support for having stationary agricultural engines meeting the same requirements as in the Portable Engine ATCM.

Of particular concern to the regulated community was the potential of having to install after-market emission control systems (retrofits) on their engines. The

agricultural community supported the use of after-treatment technology to reduce emissions from diesel engines, but was concerned about after-treatment technologies that were not developed and installed by the engine manufacturer. Because of these concerns, the Amended ATCM was specifically designed to use an engine replacement approach instead of a retrofit approach. Staff believes, and the bulk of the public testimony supports, that this approach was the best approach for regulating stationary agricultural engines.

21. Comment: The Amended ATCM should allow the use of Tier 2-certified engines in lieu of requiring Tier 3-certified engines because diesel PM emission standards for Tier 2- and Tier 3-certified engines are the same and in-use agricultural engine replacement with either would result in the same health risk reduction. (BCAQMD - 2)

Response: Section 93115.8(b) of the Amended ATCM addresses this comment because either a Tier 2- or Tier 3-certified engine may be used provided it is compliant with the applicable in-use agricultural engine diesel PM emission limits and the Tier 2 or Tier 3 off-road CI engine certification standards for other pollutants (i.e., NMHC+NO_x and CO). However, the engine owner or operator should be aware that a Tier 2-certified engine will be required to meet more stringent PM emission limits by December 31, 2014-15.

22. Comment: Section 93115.8(a)(1)(A)5 of the draft regulation provides a compliance extension of up to three years to replace an in-use agricultural engine with an electric motor or a very clean diesel engine where a local air district has determined that an engine would pose a significant health risk. Consistent with section 93115.8(a)(1)(A)5, the section 93115.8(b)(6) two-year compliance extension for an in-use agricultural engine that has not been determined to pose a significant health risk should be changed to three years. (CAPCOA)

Response: As recommended in the comment, the two compliance extension provisions are now consistent. Prior to publication of the original proposal on September 29, 2006, the compliance extension provisions in sections 93115.8(a)(1)(A)5 and 93115.8(b)(6) were both changed to allow "up to four years" to comply. See also the response to Comment 10.

23. Comment: At least one year should be added to all Amended ATCM compliance dates for in-use agricultural engine emission standards because they do not provide adequate time for complete and measured implementation. Specifically, the Amended ATCM's December 31, 2010, compliance deadline for Tier 0 (i.e., uncontrolled, noncertified, and mostly pre-1996) in-use agricultural engines would leave insufficient time (only about five months to one-year) for outreach, compliance assistance, and Carl Moyer Program application submittal and processing. (CFBF; SVBAPPC)

Response: The concern about the ability to implement in-use agricultural engine requirements within the Amended ATCM's compliance schedule is addressed by

a combination of Amended ATCM provisions and ARB commitments as described below.

Draft versions of the Amended ATCM's in-use agricultural engine requirements proposed compliance dates four years after off-road CI engine certification standard effective dates for new engines. This compliance schedule was intended to provide one year to ensure the availability of compliant engines in a wide variety of makes, models, and horsepower ratings for agricultural applications and three years of earlier-than-required emission reductions to allow Carl Moyer Program incentive funding eligibility.

However, given concerns that new, compliant agricultural engine packages may not become widely-available available until the third or fourth quarter of the year certification standards take effect, two changes were made prior to the release of the original regulatory proposal. First, the draft December 31, 2009, emission limit compliance date for Tier 0 in-use agricultural engines greater than 100 but less than or equal to 750 horsepower was changed to December 31, 2010, in the regulatory proposal that the Board approved on November 16, 2006. Second, a provision was added to allow the ARB Executive Officer to extend compliance requirements up to one year provided verifiable information demonstrates that new engine packages are not available in sufficient numbers or in a sufficient range of makes, models, and horsepower ratings to replace in-use agricultural engines. In addition, as explained in the Notice of Public Availability of Modified Text and Supporting Documents (April 10, 2007), the Amended ATCM provides an exemption that allows owners to replace failed stationary CI engines with engines meeting the emission standards from the previous model year if new engines compliant with the current year's emission standards are not available in sufficient numbers or in a sufficient range of makes, models, and horsepower ratings. This exemption ensures that the agricultural industry and other industries can continue to operate.

During the November 16, 2006, Board hearing, ARB made a commitment to reduce the required years of voluntary or "surplus" in-use agricultural engine emission reductions from three years to one year in order to increase Carl Moyer Program incentive funding eligibility. This commitment was based on information regarding annual Carl Moyer Program allocation limits for many rural air districts and the nine or more months required from Carl Moyer Program application submittal to actual engine replacement. The reduction of required years for surplus emission reductions means that growers owning greater than 100 to less than or equal to 750 horsepower Tier 0 engines will have until December 31, 2009, instead of December 31, 2007, to replace those engines and still be eligible for Carl Moyer Program incentive funding. Allowing additional years to apply for Carl Moyer Program funding is expected to facilitate implementation of the Amended ATCM by maximizing potential early emission reductions and reducing compliance costs for more in-use agricultural engine owner/operators.

ARB staff has also committed to work closely with local air districts on outreach and compliance assistance for in-use agricultural engine owner/operators. As

previously mentioned in the responses to Comments 1 and 2, outreach will include informational materials and public workshops addressing Amended ATCM requirements, compliance options, and funding incentives and assistance. The intention is to provide the information materials and workshop opportunities to affected growers well before the March 1, 2008, deadline for submitting in-use agricultural engine registration information to local air districts. The local air districts will then have more than two years to verify the registration information and provide additional compliance assistance, as necessary, before the initial emission limit compliance date for greater than 100 but less than or equal to 750 horsepower Tier 0 engines (i.e., December 31, 2010).

24. Comment: In some local air districts, Carl Moyer Program funding will be available for less than one-third of the Tier 0 in-use agricultural engines required to be replaced by December 31, 2007. This is because Carl Moyer Program incentive funding requires at least three years of voluntary or "surplus" emission reductions prior to a regulatory mandate (e.g., the Amended ATCM's Tier 0 in-use agricultural engine compliance deadline of December 31, 2010). Moyer funds could be made available for replacing a greater number of agricultural engines if the NO_x, HC, and CO standards were applicable two years after the diesel PM limits become effective. (CAPCOA)

Response: The commenter's concern about making Carl Moyer Program incentive funding available to a greater number of in-use agricultural engine owner/operators is addressed by ARB's commitment to reduce the Program's required years of voluntary or "surplus" emission reductions from three years to one year for the replacement of these engines (see the response to Comment 23). This will make two additional years of local air district annual Carl Moyer Program allocations available while maintaining the Amended ATCM's compliance deadlines for NO_x, HC, and CO emission limits. In addition, ARB is investigating other means of increasing the potential funding incentives and assistance available for in-use agricultural engine replacement/retrofit.

25. Comment: ARB should extend the compliance deadline for agricultural engine registration by one year to allow time for local air district outreach and compliance assistance. (CFBF)

Response: The concern regarding the Amended ATCM's March 1, 2008, deadline for in-use agricultural engine owner/operators to submit registration information is addressed by ARB's commitment to work closely with local air districts to provide information regarding Amended ATCM requirements, compliance options, funding incentives, and other assistance well before March 1, 2008. See also the responses to Comments 1, 2, and 23.

26. Comment: The ARB should review the Amended ATCM's compliance schedule for in-use agricultural engines and consider extending the timeline. The agricultural community is concerned about the availability of Amended ATCM-compliant engines because many Tier 3-certified engines for agricultural applications are not yet available and Tier 4-certified engines for agricultural applications have not been approved. (Din)

Response: As previously mentioned in the response to Comment 23, the commenter's concern about compliant agricultural engine package availability has been addressed by:

- Setting Amended ATCM emission limit compliance dates four years from the dates manufacturers are expected to produce compliant new engines pursuant to California and federal off-road CI engine certification standards;
- Including a provision extending compliance dates for up to one year if there are not sufficient numbers of compliant engines available in a sufficient range of makes, models, and horsepower ratings to replace in-use agricultural engines; and
- Including an exemption from new nonagricultural and agricultural emission limits that allows owners to replace failed stationary CI engines with engines meeting the emission standards from the previous model year if new engines compliant with the current year's emission standards are not available in sufficient numbers or in a sufficient range of makes, models, and horsepower ratings.

27. Comment: Compliance with the remotely-located agricultural engine exemption criteria should be evaluated once (e.g., upon initial registration of the engine when the owner/operator applies for the exemption). The exemption should continue even if exemption criteria are no longer met (e.g., a residential area is built within one-half mile of the engine). If the local air district subsequently finds that an exempted engine poses a health risk to a new housing development, it can require reduction measures pursuant to the AB 2588 "Hot Spots" Program. (BCAQMD - 2)

Response: ARB staff has determined that no change is necessary in response to this comment because nothing in the Amended ATCM precludes local air districts from using their discretion in this matter. As previously mentioned in the response to Comment 7, the remotely-located agricultural engine exemption is intended for engines that do not pose a significant public health risk based on criteria defined in section 93115.4(kkk) of the Amended ATCM. However, after initial registration, the owner/operator may have little or no control over development within one-half mile of his or her engine. For this reason, we expect a local air district to evaluate if continued exemption of an engine poses a significant public health risk based on section 93115.4(kkk) criteria, local air district AB 2588 Hot Spots Program requirements, or a combination of both.

28. Comment: Commenters expressed support for establishing agricultural engine registration programs, rather than permitting, to implement the Amended ATCM agricultural engine requirements. (CRC; MCAQMD)

Response: No change to Amended ATCM in-use agricultural engine requirements was necessary to address this comment. Although most local air districts are expected to opt for the Amended ATCM's registration requirements (or some registration program variation based on them),

section 93115.8(c)(4) of the Amended ATCM allows local air district alternatives to registration provided the ARB Executive Officer finds such alternatives equivalent to the requirements set forth in the Amended ATCM. A permitting program is an example of one such alternative. This flexibility allows local air districts to use existing data or an alternative that better suits district implementation and enforcement needs. See also the responses to Comments 4 and 5.

Economic Impact

29. Comment: The Amended ATCM's agricultural engine requirements will adversely affect the economic well-being of rural counties by necessitating significant capital outlays for implementation and compliance while providing questionable reductions in public exposure to toxic air contaminants for areas where populations are small and highly dispersed. Rural areas are concerned the State may be unable to provide adequate funding for Amended ATCM implementation. (BCAQMD - 1; CRC; SVBAPCC)

Response: Agricultural engines are normally replaced in the course of doing business, and replacement costs are incurred with or without the ATCM. Since accelerated engine replacement is associated with ATCM compliance, this cost, termed "loss of use" cost in the staff report analysis, was estimated and found to be a cost-effective means of reducing diesel PM exposure, even without the consideration of incentive program funds such as the Carl Moyer Program. However, the ATCM includes two constructs which help reduce the regulatory burden on growers without significantly affecting the overall health-protectiveness of the regulation. The remote-location exemption is expected to relieve engine owners and operators from the burden and cost of replacing, retrofitting, or keeping operating records for engines located more than one-half mile from any residential area, school, or hospital. In addition, engine emission limit compliance requirements are phased in by engine horsepower category between 2010 and 2021, allowing a minimum of twelve years of use before compliance, which allows owners/operators time to plan for (and budget accordingly) timely emission limit compliance.

Given the remote-location exemption in the ATCM and the availability of incentive program funds, the number of affected owners and operators may potentially be smaller and the cost impact less than the estimate given in the staff report. Please see the response to Comment 24 for a discussion of incentive program funding and the response to Comment 31 for a discussion of local air district funding for implementation and enforcement of the ATCM.

30. Comment: ARB staff should involve the local air districts in future estimates of local air district stationary diesel agricultural engine registration/implementation fees prior to public release. ARB staff significantly underestimated local air district fees. Their estimate failed to reference South Coast Air Quality Management District fees and did not include the comparative costs of all local air district Portable Equipment Registration Program-related activities, such as: outreach, development of registration programs, development and maintenance

of databases, engine location verification and inspection, compliance activities, and health risk assessment. (BCAQMD - 2; CAPCOA)

Response: Cost estimates were based on existing air district fee schedules, related district staff reports justifying those fees, and current and pending changes to ARB's Portable Equipment Registration Program (PERP) fee structure. Consideration of these existing fee structures is appropriate because they have elements that are very similar to the registration program presented in the Amended ATCM.

For example, ARB's PERP program covers approximately 27,700 engines and equipment (source: 5/5/2006 Initial Statement of Reasons for the Proposed Amendments to the Statewide Portable Equipment Registration Program Regulation). Additionally, when considering district fee schedules, staff looked at both the San Joaquin Valley Air Pollution Control District's (SJVAPCD) registration program and the South Coast Air Quality Management District's (SCAQMD) fee schedule. Given that SJVUAPCD has approximately 50 percent of the affected stationary agricultural engine population, consideration of their fee structure is warranted. However, consideration of SCAQMD's fee schedule was not appropriate for two reasons: 1) the inherently urban nature of the SCAQMD territory, which is likely to have higher overhead costs than the rural air districts which contain the bulk of these engines; and, 2) the extremely small number of affected engines in this district (estimated at less than 20 engines) relative to other districts (about 8,600 engines statewide). Additionally, ARB staff believes that the SCAQMD fee structure, with its permitting program for these engines, was not representative of other local air districts, given that most districts preferred a registration program. Permitting programs tend to be more labor-intensive and more costly than registration programs.

ARB staff expects that the actual fees that most districts will charge affected businesses will fall within the range listed in Table VI-6 of the Staff Report. As noted, some districts may need to assess higher fees due to factors that may differ from the assumed scenarios discussed in the staff report. These factors include, but are not limited to, the frequency of local air district inspections of the affected engines, local air district staff resource needs, and other local air district resource needs associated with implementation and enforcement of the Amended ATCM. Prior to the release of the Staff Report, cost estimates were discussed with CAPCOA's Toxic and Risk Managers Committee and also at the September 2007 public workshop.

31. Comment: ARB should provide financial support to local air districts for recovering the cost of outreach, compliance assistance, and other implementation responsibilities. Many local air districts do not have adequate funds to implement the Amended ATCM's requirements for in-use agricultural engines and these districts and the agricultural community should not have to bear the entire burden of this new regulation. (CFBF)

Response: Section 41512 of the California Health and Safety Code expressly gives air districts the authority to adopt a fee schedule to recover their costs

associated with implementation of the ATCM or an alternative district rule, if adopted. ARB is also committed to assisting the local air districts with the outreach efforts to implement the ATCM, which should also reduce the burden on district resources.

Due to a variety of engine emission limit compliance options, the long lead time before compliance deadlines, and availability of incentive funding options, the compliance cost and flexibility compare favorably to other regulations.

32. Comment: The Amended ATCM's provisions for local air district in-use agricultural engine registration/implementation fees will not provide the immediate resources necessary to begin implementation of the Amended ATCM, e.g., initial outreach. (BCAQMD - 2)

Response: ARB is committed to assisting the local air districts with public outreach, including the preparation of outreach materials and their distribution (including covering some reproduction and postage costs). The costs associated with these activities are a substantial portion of the total cost of implementation and assistance from ARB should help minimize the financial impact upon the districts. ARB staff is working with the local air districts to develop appropriate outreach materials and outreach plans.

33. Comment: ARB's decision to adjust the Carl Moyer Program requirements for years of surplus emission reductions from three years to one year will not provide sufficient incentive funding to local air districts that receive the minimum Carl Moyer Program allocation of \$200,000 per year. At an average engine cost of \$20,000 to \$25,000, \$200,000 could replace at most 8 to 10 engines per year (from 2007 through 2009). This would be far less than the hundreds of Tier 0 engines that need to be replaced by December 31, 2009, in some of these districts in order to comply with the Amended ATCM (i.e., Tier 0 engine December 31, 2010 compliance deadline) and provide one year of surplus emission reductions. The Carl Moyer Program requirement for surplus emission reductions should be removed entirely and additional sources of funding should be made available to growers. (CRC)

Response: Due to the generally cost-effective nature of stationary agricultural engine replacement, this category already has a high priority in the Carl Moyer Program. Staff is exploring options such as redirecting encumbered but unspent funds and modifying district matching funds protocols in an effort to make more funds available for this engine category. It should also be noted that the remotely-located engine exemption will likely help reduce the demand for incentive funds by reducing the number of engines that must comply with the engine emission limits.

34. Comment: A grower with net farm income of \$15,000 per year cannot afford to comply with the Amended ATCM by replacing a 30 hp diesel engine with a new cleaner diesel engine (at a cost of \$25,000) or with an electric motor plus installation of electric lines and hookups (at a cost of \$60,000). A 30 hp diesel engine does not qualify for Carl Moyer Program incentive funding. (Fahdl)

Response: The ATCM does not apply to engines under 50 horsepower; therefore, a grower who only has a 30 horsepower stationary diesel engine will not need to comply with the ATCM and will not incur any related compliance costs.

35. Comment: The cost of additional electric power plant capacity should be considered when evaluating the economic impact of the Amended ATCM. To replace ARB's estimated 8,600 in-use stationary diesel agricultural irrigation pump engines with electric motors would require an additional 2,000 megawatts of electrical power at peak load. (CEI)

Response: Electric power providers do not anticipate the Amended ATCM to result in a need for increased electric power plant capacity; therefore, no costs were assumed for additional power generation. As explained in the response to Comment 40, the Amended ATCM does not mandate electrification. Several other compliance options are available, including: replacement with new, cleaner engines; installation of add-on control devices; and the use of alternative fuels and alternative diesel fuels. Further, the assumption that all 8,600 in-use agricultural irrigation engines would be replaced with electric motors is unrealistic. Electric utility and agricultural industry representatives have estimated that no more than 20 percent of in-use agricultural engines will be replaced by electric motors. Electrical utilities have indicated that the existing electric grid power supply can address the additional electrical demand arising from this replacement.

Emission Reduction Estimates, Risk Assessment

36. Comment: ARB staff should clarify that San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) in-use stationary diesel agricultural irrigation pump engine emission reductions will result from SJVUAPCD Rule 4702, not from the Amended ATCM. (BCAQMD - 2)

Response: This comment is addressed in the Staff Report: Initial Statement of Reasons for Proposed Requirements for Stationary Diesel In-Use Agricultural Engines (September 29, 2006). Consistent with all previous ARB analyses of toxic air contaminant source categories, ARB staff estimated the current and future Statewide emission impact of in-use agricultural engines. Both the Executive Summary (page ES-8) and Chapter V (page V-2) of the Staff Report acknowledge factors (other than Amended ATCM requirements) that affect projected Statewide emission reductions, including local air district regulations, engine replacement incentive programs, and negative agricultural industry growth. Chapter V (page V-2) specifies that "Approximately 50 percent of the projected Statewide emission reductions can be attributed to San Joaquin Valley Unified Air Pollution Control District Rule 4702 whose compliance dates precede those of the proposed amendments to the ATCM." This statement reflects ARB staff's estimate that about 50 percent of all the agricultural engines in the State are located in SJVUAPCD. In addition, due to SJVUAPCD's earlier compliance schedule and disproportionately large number of in-use agricultural engines,

Chapter VI (page VI-5) of the Staff Report excludes SJVUAPCD data for the specific purpose of estimating the cost and cost effectiveness of Amended ATCM requirements.

37. Comment: ARB staff used flawed assumptions regarding in-use stationary diesel agricultural irrigation pump engine average operating hours. These engines are used occasionally and operate a small number of hours per year. (CEI)

Response: ARB staff cannot specifically address this comment because the "flawed assumptions" and "small number of hours per year" were not identified or defined. However, staff can briefly describe how operating hours were estimated for the purposes of the in-use stationary diesel agricultural irrigation pump engine (pump engine) emission inventory.

Pump engine operating hours vary considerably from location to location and from year to year depending on a variety of factors including, but not limited to, crop(s) grown, local soil conditions, surface water supply, rainfall, and temperature. Most irrigation pumping is expected to occur during the late spring and summer growing season. For the purposes of the emission inventory, ARB staff used verifiable pump engine activity data provided by local air districts whenever possible. Generally, operating hour data for individual districts was based on an average of local pump engine use information voluntarily provided by growers in Carl Moyer Program applications.

For local air districts that did not provide annual pump engine operating hour data, an estimated Statewide average of 1,000 operating hours per year was used. This annual average is primarily based on the 2003 United States Department of Agriculture National Agricultural Statistics Service (USDA-NASS) Farm and Ranch Irrigation Survey (FRIS), including a special data request to USDA-NASS which reported an average of 1,016 annual operating hours for California well-pumps used to irrigate crops. In addition, a combination of other data sources was reviewed and supported an estimated Statewide average of 1,000 operating hours per year for pump engines. These data sources included: 1998-2004 Carl Moyer Program data from local air districts most active in the Program; 2003 Pacific Gas & Electric electrical use data for small and large agricultural electric rate payers; 1999 ARB Mobile Source Control Division estimate of hours of operation for agricultural engines; and 1996 Sonoma Technology Institute survey data for the San Joaquin Valley.

Additional information about the pump engine emission inventory is available in Chapter III and Appendix D of the Staff Report.

38. Comment: The health risk assessment analysis exposure assumption based on stationary diesel agricultural irrigation pump engine operation averaging 1,000 hours per year over 50 weeks per year and a 70-year lifetime is not appropriate and should be revised for the Northern Sacramento Valley. In the Northern Sacramento Valley, agricultural irrigation pump engines are operated primarily during the summer for 50 hours per week, 20 weeks per year. (BCAQMD - 2)

Response: The concern expressed in this comment is addressed in Appendix E of the Staff Report: Initial Statement of Reasons for Proposed Requirements for Stationary Diesel In-Use Agricultural Engines (September 29, 2006), which contains tables estimating the cancer health risk associated with several engine horsepower ratings (86, 130, and 225 horsepower) representing small, medium, and large engines, a range of engine distances from receptors (20 to 1,500 meters), and a range of annual operating/exposure hours (100 to 3,000 hours per year). These potential cancer health risk tables are expected to address most stationary diesel agricultural irrigation pump engines used in California, including those in the Northern Sacramento Valley. According to the comment, the pump engines in the Northern Sacramento Valley operate about 1,000 hours per year (i.e., 50 hours per week x 20 weeks per year = 1,000 hours per year), which is consistent with ARB's estimated average California pump engine hours of operation. See also the response to Comment 37.

The California Office of Environmental Health Hazard Assessment's (OEHHA) Air Toxics Hot Spots Program Risk Assessment Guidelines: The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (2003) recommends a 70-year exposure duration assumption for stationary sources such as stationary diesel agricultural irrigation pump engines. ARB's health risk assessment analysis is consistent with OEHHA's recommendation.

39. Comment: In the short term, the Amended ATCM's aggressive compliance schedule for in-use agricultural engines could increase emissions by requiring an increase in engine manufacturing activities. (BCAQMD - 1)

Response: ARB staff anticipates no increase in manufacturing activities or manufacturing-related emissions as a result of the Amended ATCM's compliance schedule for in-use agricultural engines and believes the concern expressed in this comment is unfounded.

As mentioned in the response to Comment 23, the Amended ATCM's emission limit compliance dates were selected to occur four years after California and federal off-road CI engine certification standards for new engines become effective. This means that, irregardless of the Amended ATCM, manufacturers will produce new Amended ATCM-compliant engines four years before in-use agricultural engine replacement is required. In addition, the Amended ATCM contains a provision allowing the ARB Executive Officer to extend compliance deadlines up to one year provided verifiable information shows new engine packages are not available in sufficient numbers or in a sufficient range of makes, models, and horsepower ratings to replace in-use agricultural engines.

Even if the Amended ATCM's compliance schedules were accelerated and no compliance extensions were available, ARB staff would not anticipate increased manufacturing activities/emissions. During regulatory development, ARB staff learned that it is not cost-effective for engine manufacturers to alter their production plans in order to address California's special needs for compliant new

stationary diesel engines for agricultural applications because such engines comprise a very insignificant sector of the total new CI engine market.

40. Comment: Any change from diesel to electric use should be voluntary based on a sound comparison of economic and pollution impacts. The Amended ATCM's requirements for in-use agricultural engines will pose a serious problem for the electric power grid supply. In addition, ARB failed to calculate the pollution problems caused by enacting the Amended ATCM's requirements. Electric power use looks clean at the motor location; however, about three times as much fossil fuel is required to generate and transport electrical power to a motor than to run a diesel engine. Continued use of diesel-fueled agricultural irrigation pumps will conserve electric grid power.

ARB should postpone adoption of the Amended ATCM's requirements for in-use agricultural engines until ARB staff has conducted comprehensive energy-use and pollution analyses because, as proposed, the Amended ATCM will harm: the public by increasing air pollution; farmers by burdening them with costly engine replacement requirements that will make them less competitive; and taxpayers (i.e., consumers) by increasing the price of produce. (CEI)

Response: This comment appears to be based on the misconception that the Amended ATCM mandates in-use agricultural engine electrification. As previously mentioned in the response to Comment 16, although electrification is encouraged where feasible, ARB staff believes that it is not practical or cost-effective for all in-use agricultural engines. Electric utilities and agricultural industry representatives have predicted that no more than 20 percent of affected in-use agricultural engines will be replaced by electric motors. In addition, electric utilities have indicated that increased electrical needs resulting from 20 percent in-use agricultural engine electrification can be addressed by California's current electric grid power supply.

The commenter's concern regarding agricultural equipment power sources and resultant emissions (no specific information or calculations were provided in the comment to support this concern) appears to be based on the misconception that California's electrical power is primarily generated by coal combustion. Although coal may be the predominant electric power plant fuel in other areas of the United States, cleaner power sources (e.g., natural gas and hydroelectric power) predominate in California. On average, electrification is estimated to reduce a diesel engine's emissions by about 96 percent when electric power plant emissions are included in the analysis. In addition, electrification eliminates nearby public exposure to diesel PM and diesel exhaust air pollutants. From environmental and public health perspectives, electrification, where feasible, is a very sound compliance strategy in California.

Regarding rising costs for taxpayers and other consumers, ARB staff does not anticipate increased grocery store prices because the basic price of agricultural products is set by the commodities market where price fluctuations depend on supply and demand, rather than production costs. This also means that growers do bear most of the economic burden for increased production costs, such as

new/retrofitted equipment. However, the economic burden associated with the Amended ATCM (discussed in the Form 399 Economic and Fiscal Impact Statement and Chapter VI of the Staff Report: Initial Statement of Reasons for Proposed Requirements for Stationary Diesel In-Use Agricultural Engines, September 29, 2006) is expected to be mitigated by provisions which allow at least 12 years of use for any existing agricultural engine and by opportunities for Carl Moyer and other incentive and assistance program funding. See also the responses to Comments 23 and 24.

Support Comments

41. Comment: Several commenters expressed support for reducing public exposure to diesel exhaust and diesel PM. (ALA; BCAQMD - 1; BCAQMD - 2; CAPCOA; MBUAPCD; SVBAPCC)

Comment: Several commenters expressed support for the Stationary Diesel Engine ATCM amendments as proposed. (ALA; SJVUAPCD - 1; SJVUAPCD - 2)

Response: At a public hearing on November 16, 2006, the Board approved Stationary Diesel Engine ATCM amendments (with modifications) that established emission limits and other requirements for in-use agricultural engines. These emission limits and requirements are expected to reduce diesel PM emissions, exposure, and health risk. All modifications made to the original proposal were published in a Notice for the Public Availability of Modified Text and Supporting Documents (April 10, 2007) for a 15-day public comment period.

42. Comment: The American Lung Association (ALA) expressed support for the Stationary Diesel Engine ATCM amendment's multi-air pollutant control approach and for Carl Moyer Program flexibility regarding years of surplus emission reductions required with respect to in-use agricultural engines. However, ALA is opposed to any additional exemptions or delays in adoption or compliance timelines for in-use agricultural engines. (ALA)

Response: The Stationary Diesel Engine ATCM amendments (with modifications) approved by the Board on November 16, 2006, retained the originally-proposed emission limit compliance schedule and did not specify additional exemptions for in-use agricultural engines.

Comments and Responses Primarily Directed at Amendments to Clarify or Improve Existing Nonagricultural Engine Provisions

43. Comment: The "sell-through" provision included in the proposed amendments to the Amended ATCM is very important to engine dealers and owner/operators. (SCEC)

Response: ARB staff agrees with the commenter. ARB staff recognized the significance of this issue given that new engine distributor and dealers within California can be left with an inventory of non-compliant, non-salable stock engines when new, more stringent emission standards become effective. Currently, distributors cannot return these engines to the manufacturer or sell them outside their sales territory. Without a sell-through provision, they would also not be able to legally sell these engines in California. These engines represent a potentially significant financial loss to California distributors and dealers.

ARB staff does not believe significant numbers of engines meeting the prior model year Off-Road CI Certification Emission Standards will remain in stock at the time that more stringent emission standards become effective. This is because carrying excessive inventory of new engines is expensive for dealers and distributors. However, to ensure stockpiling of engines doesn't occur, ARB staff limited the "sell-through" provision by requiring district approval and by including additional conditions that must be met by the seller or owner/operator of these new stock engines. The seller must demonstrate to the district that an engine meets the Off-Road CI Engine Certification Standards for the model year immediately preceding the transition to new Certification Standards and that the engine was delivered to California no more than 12 months prior to, and sold no more than six months after, the transition to new Certification Standards. The owner/operator must demonstrate to the district that the engine was acquired within six months of the transition to new Certification Standards.

44. Comment: The compliance option allowing a Tier 3 engine (or a greater than 750 hp Tier 2 engine) equipped with a verified Level 3 (85 percent or more) diesel PM control device to meet the 0.01 g/bhp-hr diesel PM emission standard is very important to engine dealers and owner/operators. It should be modified as follows:

- The text of the provision should be modified to indicate that no additional in-field compliance demonstrations (e.g., source testing) are necessary for those using this option; and
- Rather than being limited to Tier 3-certified engines and greater than 750 hp Tier 2-certified engines, the compliance option should be extended to all less than 750 hp Tier 2-certified engines that meet the 0.15 g/bhp-hr PM emission standard and are equipped with Level 3 verified diesel emission control strategies. (SCEC)

Response: In consideration of the above concerns, ARB staff proposed 15-day changes to move the compliance option to meet the 0.01 g/bhp-hr PM emission standard contained in sections 93115.6 through 93115.9 to a new section 93115.13(f) "Alternative Compliance Demonstration." In general, the new section considers any certified CI engine that meets the 0.15 g/bhp-hr PM emission standard in combination with an emission control strategy that demonstrates a minimum of 85 percent emission control efficiency to meet the 0.01 g/bhp-hr PM emission standard. To minimize the need for in-field compliance testing, the Amended ATCM identifies emission control strategies in

subsections 93115.13(f) (1) through (f)(6) that can be used to demonstrate compliance with the 0.01 g/bhp-hr PM emission standard.

45. Comment: The Tier 3 [or greater than 750 hp Tier 2] engine equipped with a verified Level 3 diesel PM control device compliance alternative should be included as an option to the 0.01 g/bhp-hr PM emission standard, rather than as a footnote. (BCAQMD - 2)

Response: ARB staff agrees that the alternative compliance option should not be identified as a footnote. The Amended ATCM has been modified accordingly. See also the response to Comment 44.

46. Comment: The Amended ATCM should be revised to move the provision for allowing additional hours of maintenance and testing from the section 93115.4(uu) definition of "maintenance and testing" to the section 93115.6 text for the emission standard. (BCAQMD - 2)

Response: ARB staff disagrees with the commenter's recommendation to move the proposed amendment to the text of section 93115.6 (Emergency Standby Diesel-Fueled CI Engines (>50 bhp) Operating Requirements and Emission Standards). Section 93115.6 allows more operating hours for maintenance and testing based on an engine that meets a more stringent emission standard. The provision in 93115.4(uu) allows for additional testing hours if a failure or breakdown occurs during a maintenance and testing event. Subject to local air district approval, these additional testing hours would not be counted against an engine's maximum allowable annual hours of operation for maintenance and testing. Accordingly, no change to the Amended ATCM is required.

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

Comments Received

<u>Abbreviation</u>	<u>Commenter</u>
BCAQMD	W. James Wagoner, Air Pollution Control Officer Butte County Air Quality Management District Written Comment: April 25, 2007
CEI	John Paoluccio, PE Consulting Engineers, Inc. Written Comment: April 19, 2007
CFBF	Cynthia L. Cory Director, Environmental Affairs California Farm Bureau Federation

Written Comment: April 25, 2007

**Comments and Responses Regarding In-Use Stationary Diesel
Agricultural Engine Requirements**

Outreach

1. Comment: ARB staff should work with local air districts to make all California growers aware of the Amended ATCM requirements and of the Board's directive to reduce the Carl Moyer Program eligibility requirement for years of surplus emission reductions from three to one. (CFBF)

Response: ARB staff agrees with this comment. Please see the responses to Comments 1, 2, and 23 in Section III.A (45-Day Public Comment Period and Board Hearing Comments).

2. Comment: ARB staff's fact sheet should be updated to clearly lay out the key requirements of the Amended ATCM and should be made available and easy to find on the ARB's website. (CFBF)

Response: Since ARB fact sheets are traditionally limited to one- or two-page overviews, ARB staff is working to address the commenter's concern with responses to frequently asked questions (FAQ) specific to the Amended ATCM's agricultural engine requirements. The FAQ will afford greater opportunity to provide detailed information and guidance regarding key requirements and compliance options in a focused, easy-to-understand format. In addition, FAQ responses can be added or modified as new questions and issues arise during outreach workshops and implementation of the Amended ATCM (see responses to Comments 1, 2, and 23 in Section III.A (45-Day Public Comment Period and Board Hearing Comments)). The initial FAQ on agricultural engine requirements (under development as of this writing) will be made available on the ARB's website. The existing two-page "Control Measure for In-Use Stationary Diesel Agricultural Engines Fact Sheet" has been and will continue to be updated as necessary and is currently available at <http://www.arb.ca.gov/diesel/ag/inuseag.htm>.

3. Comment: ARB staff should take the lead in providing information and guidance that will truly make alternative fuels [and alternative diesel fuels] a viable compliance option. (CFBF)

Response: Please see the responses to Comments 3, 11, and 12 in Section III.A (45-Day Public Comment Period and Board Hearing Comments).

4. Comment: Growers should be encouraged to use renewable biodiesel fuel to reduce air pollution and improve engine efficiency. (CEI)

Response: Please see the response to Comment 18 in Section III.A (45-Day Public Comment Period and Board Hearing Comments).

5. Comment: The 15-day comment period for modifications to the originally-proposed amendments should be extended until ARB staff responds to all comments submitted during the 45-day public comment period. (BCAQMD)

Response: Consistent with the Administrative Procedures Act, (APA), the 15-day comment period for modifications to the Amended ATCM was not extended until ARB staff addressed all comments submitted during the 45-day public comment period. The major purpose of this Final Statement of Reasons is to summarize all 45-day, Board hearing, and 15-day comments and to identify changes made, and explain why changes were not made, in response to these comments. In the Notice of Public Availability of Modified Text and Supporting Documents (released for a 15-day public comment period that began on April 10, 2007, and ended on April 25, 2007), ARB staff proposed and explained modifications made to the ATCM amendments in response to comments during the 45-day public comment period and Board Hearing. Although staff considered every comment submitted during the 45-day public comment period and Board hearing, not all comments resulted in 15-day modifications.

6. Comment: Despite renumbering, the Amended ATCM is complex and difficult to follow. (BCAQMD)

Response: As previously mentioned in the response to Section III.B Comment 2, ARB staff will use a question and answer or "FAQ" (frequently asked questions) format to provide additional information and guidance about key requirements and compliance options for the Amended ATCM. Unfortunately, the Stationary Diesel Engine ATCM (both existing and amended versions) is lengthy and somewhat complex because ARB staff could not use a single set of requirements to address California's diverse stationary CI diesel-fueled engine population and its numerous applications, modes of operation, and characteristics (age, horsepower rating, location, etc.). ARB staff has attempted to simplify and clarify the regulation by incorporating tables summarizing emission limits, grouping requirements for similar types of engines, and streamlining and renumbering the regulation to reflect the grouped requirements. While helpful, these measures have been only partially successful due to the comprehensive nature of this regulation as well as the formal structure and language that is required for most regulations. Therefore, ARB staff will publish a FAQ to address requirements specific to stationary CI diesel-fueled agricultural engines in a simple, direct, and focused fashion.

Applicability

7. Comment: The Amended ATCM's remotely-located agricultural engine exemption from in-use engine emission limits should be based solely on toxic health risk from direct exposure to diesel PM. (BCAQMD)

Response: ARB staff disagrees with this comment. Please see the responses to Comments 6 and 8 in Section III.A (45-Day Public Comment Period and Board Hearing Comments).

8. Comment: In the Section 93115.4(kkk) definition of "Remotely-Located Agricultural Engine," the ARB should have retained the term "receptor location" as originally proposed rather than replacing it with the term "residential area." The concept of a single off-site "receptor location" is consistent with AB 2588 Hot Spots Program Guidelines, while "residential area" (i.e., three or more permanent residences located anywhere outside the farm property) is not. (BCAQMD)

Response: ARB staff disagrees with this comment. As explained in the Notice of Public Availability of Modified Text and Supporting Documents (April 10, 2007), the Board specifically directed ARB staff to replace the requirement that a remotely-located agricultural engine be located "one-half mile from any receptor location" with the requirement that it be located more than "one-half mile from any residential area, school, or hospital." Generally, associating the engine location requirement with "residential area, school, or hospital" instead of "receptor location" is expected to increase eligibility for the remotely-located agricultural engine exemption without affecting the overall health-protectiveness of the regulation. However, site-specific risk evaluation for a remotely-located agricultural engine may be warranted depending on local meteorology, the occurrence of multiple co-located engines, and/or engine characteristics (e.g., a very large older engine operating several thousand or more hours per year). Section 39666(d) of the California Health and Safety Code allows any local air district to promulgate the more stringent "any receptor" requirement for the exemption if it wishes to do so. Also, once remotely-located agricultural engines are identified as a result of the Amended ATCM's agricultural engine registration requirements, a local air district may evaluate and address potential risk impacts from such engines consistent with their local AB 2588 Hot Spots Program requirements.

9. Comment: Section 93115.4(xx)(1)(G) of the Amended ATCM should be revised to read: "a greater than 50 bhp Tier 1- or Tier 2-certified stationary diesel agricultural engine installed after January 1, 2005." (BCAQMD)

Response: ARB staff disagrees with the commenter's recommended revision to section 93115.4(xx)(1)(G) because the suggested language does not reflect ARB staff's intention with regard to greater than 50 bhp Tier 1 and Tier 2 stationary diesel agricultural engines installed after January 1, 2005. Subsection (G) is one of a list of "new CI engine" exceptions that are to be considered "in-use" engines. As written, the suggested language change could have been interpreted to mean that subsection (G) engines are never subject to new stationary CI agricultural emission limits. The regulatory text in the Amended ATCM clarifies ARB staff's intention that these engines not only comply with new engine emission limits upon initial installation, but also comply with in-use engine emission limits, if they are still being operated 12 years after initial installation.

Amended ATCM Requirements and Compliance

10. Comment: Consistent with similar provisions for in-use nonagricultural stationary diesel engines, the Amended ATCM should be revised to include acceptable

alternative compliance demonstrations for the 0.01 g/bhp-hr diesel PM standard in the in-use agricultural engine emission limits section. (BCAQMD)

Response: ARB staff disagrees with the commenter's recommended revision because it is not consistent with the Amended ATCM's provision for alternative compliance demonstrations for stationary diesel engines required to comply with 0.01 g/bhp-hr diesel PM emission limits.

As explained in the Notice of Public Availability of Modified Text and Supporting Documents (April 10, 2007), section 93115.13(f) was added to identify several emission control strategies that may be used with a new or in-use stationary diesel emergency standby, prime, or agricultural engine to demonstrate compliance with a 0.01 g/bhp-hr diesel PM emission limit. These alternative compliance demonstrations are not intended to be emission standards or to replace emission standards. They are simply intended to recognize that a certified engine demonstrated to emit no more than 0.15 g/bhp-hr PM, in combination with an add-on control device demonstrated to provide 85 percent PM control efficiency, essentially meets a 0.01 g/bhp-hr diesel PM emission limit without the need to confirm exact compliance through additional source testing. Previous references to the alternative compliance demonstration, which occurred in several places in the regulatory language from sections 93115.6 through 93115.9, were removed since the addition of section 93115.13(f) made them redundant.

The alternative compliance demonstration provisions for complying with 0.01 g/bhp-hr diesel PM emission limits should not be confused with in-use stationary diesel prime engine 85 percent reduction from baseline emission limit options in section 93115.7(b) of the Amended ATCM. The 85 percent reduction from baseline emission limit options are available to in-use nonagricultural prime engines because these engines generally have lower baseline emissions and are required to comply with more stringent emission limits at earlier dates when compared to in-use stationary diesel agricultural engines. ARB staff never proposed or intended such emission limit options for in-use agricultural engines.

11. Comment: The Amended ATCM may result in the conversion of a large percentage of in-use stationary diesel agricultural engines to electric motors which may increase fossil fuel use and adversely affect the electric power grid, air quality, California farmers, and taxpayers. An analysis comparing the respective cost-benefits of electrification versus leaving diesel engines "as is" should be conducted. Stationary diesel agricultural engine use relieves peak electric power use and encourages conservation. (CEI)

Response: ARB staff disagrees with this comment. Please see the response to Comment 40 in Section III.A (45-Day Public Comment Period and Board Hearing Comments).

Comments and Responses Primarily Directed at Amendments to Clarify or Improve Existing Nonagricultural Engine Provisions

12. Comment: The phrase "or the most current addition [edition] approved by the Executive Officer" should be removed from section 93115.3(n) of the Amended ATCM because the public should have an opportunity to review and comment on each update to a referenced document during formal rulemakings to revise the ATCM. (BCAQMD)

Response: ARB staff believes that it is not necessary to revise section 93115.3(n) as suggested by the comment because the referenced document (i.e., "National Fire Protection Association (NFPA) 25 - Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems" or "NFPA 25") cannot be subjected to public review as part of any ARB rulemaking process.

NFPA standards are developed through a consensus standards development process approved by the American National Standards Institute (ANSI). According to NFPA 25, 2002 edition, the consensus standards development process "... brings together volunteers representing varied viewpoints and interests to achieve consensus on fire and other safety issues" and the 2002 edition "... was acted on by NFPA at its November Association Technical Meeting held November 10-14, 2001 ..." and "... was issued by the Standards Council on January 11, 2002, with an effective date of January 31, 2002, and supersedes all previous editions."

Upon release by ANSI, the most current edition of NFPA 25 is considered the fire-protection industry's minimum standard for the inspection, testing, and maintenance of emergency fire pump assemblies that are driven by stationary diesel-fueled CI engines. The purpose of the standard is to protect public health and welfare by ensuring that fire pumps will work during a power failure or other emergency (e.g., natural or man-made disasters). Many public institutions (e.g., hospitals, convalescent homes, and other health facilities) are required to comply with NFPA 25 in order to receive accreditation. Since NFPA 25 is widely-recognized as a key public safety standard and is updated every two to three years, independent of ARB's regulatory processes, it makes good regulatory and economic sense to retain the language of section 93115.3(n).