

**DRAFT TRU Airborne Toxic Control Measure Overview**  
**March 6, 2003**

This summary provides a short description of the three main elements of the draft proposed TRU ATCM.

❖ New PM Emission Standards

- Option #1 – harmonize with U.S. EPA's pending Offroad CI Engine Standards
- Option #2 – Special new TRU engine standards included with ATCM
  - New TRU engines sold for use in CA
    - 0.30 g/bhp-hr by 2005
    - 0.10 g/bhp-hr by 2010
    - 0.01 g/bhp-hr by 2015
- Option #3 – New TRU system standards included with ATCM (equipment standards)
  - New TRUs sold for use in CA
    - 0.30 g/bhp-hr by 2005
    - 0.10 g/bhp-hr by 2010
    - 0.01 g/bhp-hr by 2015
- Technology reviews: 2009 (prior to 0.10 standard) and 2014 (prior to 0.01 standard)
- Looking at modified TRU test cycle

❖ In-Use TRU requirements

- Except “low use” certified TRUs (infrequent out-of-state carriers and seasonal)
- Retrofit with highest verification classification level verified for the emission control group
- Or, use one of alternative technologies on list,
  - Alternative Technologies:
    - Electric standby
    - Cryogenic temperature control or hybrid (cryogenic plus diesel engine)
    - Alternative fueled engines
    - Fueled exclusively with verified alternative diesel fuel
    - Powered by fuel cells
    - Any other system approved by EO to not emit diesel PM while at an affected facility
- Or, if above options not available, then replace engine with new certified engine of same compliance date model year.
- Compliance dates
  - 1995 and all previous model years – by December 31, 20XX
  - 1996 and subsequent – December 31 of model year plus X years
- Technology reviews in 2005 and 2007.

❖ Facilities

- Option #1
  - “Large” facilities with TRUs under facility control would be required to reduce diesel emissions sooner.
    - “Large” is any facility with X or more loading dock doors serving refrigerated areas.
- Option #2
  - Recordkeeping and reporting requirements for facilities
    - Phase in “large” facilities first.
    - Develop regulations in 2006 to reduce diesel emissions at facilities sooner
  - Later phases for “medium” and “small” facilities
- New facilities to provide infrastructure to support Alternative Technologies.

**\*\* Proposed Draft ATCM Concepts (March 6, 2003)\*\***

***[At the November 19, 2002 TRU Workgroup meeting, ARB staff presented revised regulatory concepts and draft regulatory language based upon comments received on our September 4, 2002 regulatory concepts. At the November meeting, we discussed a revised approach that would require progressively more stringent new engine standards for TRUs, require fleet operators to reduce emissions from their existing fleets over time, and require facilities to systematically provide the infrastructure to support low-emission TRUs. The Workgroup provided comments to proposed regulatory concepts and draft regulatory language. This Proposed Draft ATCM (March, 6, 2003) is our attempt to incorporate the comments we received into regulatory language.]***

***These Draft ATCM Concepts (March 6, 2003) do not address TRUs used in the growing of crops or the raising of fowl. ARB staff is working with the Agricultural Working Group to gather information and examine issues associated with TRUs used in agricultural operations to determine how best to address this group of TRUs.***

***Staff are interested in comments relevant to all of the concepts proposed herein. This is NOT final regulatory language.]***

Adopt new Section XXXX, Title 17, Chapter Y, Article Z, California Code of Regulations, to read as follows: (Note: the entire text of section XXXX set forth below is new language proposed to be added to the California Code of Regulations.)

- (a) Purpose. Diesel particulate matter (PM) was identified in 1998 as a toxic air contaminant. This regulation implements provisions of the Diesel Risk Reduction Plan, adopted by the Air Resources Board in October, 2000, as mandated by the Health and Safety Code Sections 39650-39675, to reduce emissions of substances that have been determined to be toxic air contaminants. Specifically, this regulation will use a phased approach to reduce the PM emissions from new and in-use transport refrigeration units (TRUs) at certain facilities frequented by TRUs. Emissions from new and in-use TRU generator (gen) sets will also be reduced.
- (b) Applicability.
  - (1) Except as provided in subsection (c), this regulation applies to any person who sells or offers for sale for use in California any new TRU engines or TRU gen set engines used on refrigerated truck vans, refrigerated trailer vans, refrigerated shipping containers, and refrigerated railcars. Subsection (e)(1) lists applicable requirements and compliance schedule.
  - (2) Except as provided in subsection (c), this regulation applies to any person who sells or offers for sale for use in California any new TRU or TRU gen set used on refrigerated truck vans, refrigerated trailer vans, refrigerated shipping containers,

and refrigerated railcars. Subsection (e)(2) lists applicable requirements and compliance schedule

- (3) Except as provided in subsection (c), this regulation applies to TRU fleet owner/operators and lessors that operate in the State of California, specifically truck and trailer TRU fleet owner/operators and lessors, refrigerated shipping container TRU fleet owner/operators and lessors, TRU gen set fleet owner/operators and lessors, and refrigerated railcar owner/operators and lessors. Subsection (e)(3) lists applicable requirements and compliance schedules. Subsection (f)(1) lists applicable recordkeeping and reporting requirements.
- (4) Except as provided in subsection (c), this regulation applies to facilities located in California that meet the following criteria:
  - (A) Facilities where perishable goods are loaded for distribution,
  - (B) Facilities frequented by truck-mounted TRUs, trailer-mounted TRUs, refrigerated shipping container TRUs, or refrigerated rail car TRUs where TRUs or TRU gen sets are under facility control (see definition).
  - (C) Facilities with X or more loading dock doors serving refrigerated areas.

Subsection (e)(4) lists the requirements and compliance schedule. Subsection (f)(2) lists monitoring, recordkeeping and reporting requirements.

- (5) Except as provided in subsection (c), this regulation applies to all TRU fuel tanks and their fueling. Subsections (e)(5) lists the requirements and compliance dates.

(c) Exemptions.

- (1) This regulation does not apply to military tactical support equipment.
- (2) This regulation does not apply to TRUs or TRU gen sets that pass through the State of California and do not stop to load or unload goods.
- (3) This regulation does not apply to TRUs and TRU gen sets that are annually certified as “low use” TRUs. Subsection (e)(6) lists the requirements for qualifying for this exemption.

(d) Definitions. For purposes of this regulation, the following definitions apply:

- (1) “Active TRU or TRU Generator Set” means the engine is operated at least **X** hours per year, as indicated on a non-resettable hour meter.
- (2) “Affiliate or Affiliation” refers to a relationship of direct or indirect control or shared interests between the subject business and another business.

- (3) “Alternative Fuel” means natural gas, propane, ethanol, methanol, electricity, fuel cells, or advanced technologies that do not rely on diesel fuel, except as a pilot ignition source at an average ratio of less than 1 part diesel fuel to 10 parts total fuel on an energy equivalent basis. Alternative fuels also means any of these fuels used in combination with each other or in combination with other non-diesel fuels. Alternative-fueled engines shall not have the capability of idling or operating solely on diesel fuel at any time.
- (4) “Alternative Diesel Fuel” means any fuel used in diesel engines that is not a reformulated diesel fuel as defined in Sections 2281 and 2282 of Title 13, of the California Code of Regulations, and does not require engine or fuel system modifications for the engine to operate, although minor modifications (e.g. recalibration of the engine fuel control) may enhance performance. Examples of alternative diesel fuels include, but are not limited to, biodiesel, Fischer Tropsch fuels, and emulsions of water in diesel fuel. Natural gas is not an alternative diesel fuel. An emission control strategy using a fuel additive will be treated as an alternative diesel fuel based strategy unless:
  - (A) The additive is supplied to the vehicle or engine fuel by an on-board dosing mechanism, or
  - (B) The additive is directly mixed into the base fuel inside the fuel tank of the vehicle or engine, or
  - (C) The additive and base fuel are not mixed until vehicle or engine fueling commences, and no more additive plus base fuel combination is mixed than required for a single fueling of a single engine or vehicle
- (5) “ARB” means the California Air Resources Board.
- (6) “B100 Biodiesel Fuel” means 100% biodiesel fuel derived from vegetable oil or animal fat and complying with ASTM D 6751-02 and commonly or commercially known, sold, or represented as “neat” biodiesel or B100.
- (7) “B100 Biodiesel-Fueled” (compression-ignition engine) means a compression-ignition engine that is fueled by B100 biodiesel fuel.
- (8) “Business” means an entity organized for profit including, but not limited to, an individual, sole proprietorship, partnership, limited liability partnership, corporation, limited liability company, joint venture, association or cooperative; or solely for purposes of the Prompt Payment Act (Government Code 927 et seq.), a duly authorized nonprofit corporation.
- (9) “CARB Diesel Fuel” means any diesel fuel that meets the specifications defined in *13 CCR 2281* and *13 CCR 2282*.
- (10) “Carbon Monoxide (CO)” means a colorless, odorless gas resulting from the incomplete combustion of hydrocarbon fuels.

- (11) “Compression Ignition (CI) Engine” means an internal combustion engine with operating characteristics significantly similar to the theoretical diesel combustion cycle. The regulation of power by controlling fuel supply in lieu of a throttle is indicative of a compression ignition engine.
- (12) “Cryogenic Temperature Control System” means a heating and cooling system that uses a cryogen, such as carbon dioxide or liquid nitrogen that is routed through an evaporator coil that cools air blown over the coil. The cryogenic system uses a vapor motor to drive a fan and alternator, and a propane-fired heater superheats the carbon dioxide for heating and defrosting.
- (13) “Diesel Fuel” means any fuel that is commonly or commercially known, sold, or represented as diesel fuel No. 1-D or 2-D, pursuant to the specifications in *ASTM Standard Specification for Diesel Fuel Oils D975-98*.
- (14) “Diesel-Fueled” means fueled by diesel fuel or CARB diesel fuel in whole or in part, except as allowed for a pilot ignition source under the definition for “alternative fuel”.
- (15) “Diesel Particulate Filter (DPF)” means an emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate. Periodically the collected particles are either physically removed or oxidized (burned off) in a process called regeneration.
- (16) “Diesel Particulate Matter” means the particles found in the exhaust of diesel-fueled CI engines. Diesel PM may agglomerate and adsorb other species to form structures of complex physical and chemical properties.
- (17) “Dual-Fuel Engine” means an engine designed to operate on a combination of alternative fuel, such as compressed natural gas (CNG) or liquefied petroleum gas (LPG), and conventional fuel, such as diesel or gasoline. These engines have two separate fuel systems, which either inject both fuels simultaneously into the engine combustion chamber or fumigate the gaseous fuel with the intake air and inject the liquid fuel into the combustion chamber.
- (18) “Emergency” means any of the following times:
- (A) A failure or loss of normal power service that is not part of an “interruptible load contract”;
  - (B) A failure of a facility’s internal power distribution system, provided the failure is beyond the reasonable control of the owner/operator;
  - (C) When an affected facility is placed under an involuntary “rotating outage”.
- (19) “Emission Control Strategy” means any device, system, or strategy employed with a diesel-fueled CI engine that is intended to reduce emissions. Examples of emission control strategies include, but are not limited to, particulate filters, diesel oxidation catalysts, selective catalytic reduction systems, fuel additives

used in combination with particulate filters, alternative diesel fuels, and combinations of the above.

- (20) “Executive Officer” means the Executive Officer of the California Air Resources Board or his or her delegate.
- (21) “Facility frequented by TRUs” means any facility where TRUs are loaded or unloaded with perishable goods. This includes, but is not limited to grocery distribution centers, food service distribution centers, cold storage warehouses, and intermodal facilities. Each business entity at a commercial development that leases space is a separate facility for the purposes of this regulation, provided the businesses are under separate ownership.
- (22) “Fleet” means one or more TRUs or gen sets.
- (23) “Fleet Operator” means any person that operates a fleet of TRUs or gen sets. (See definition of owner or operator)
- (24) “Fuel Additive” means any substance designed to be added to fuel or fuel systems or other relate engine fuel-systems such that it is present in-cylinder during combustion and has any of the following effects: decreased emissions, improved fuel economy, increased performance of the entire vehicle or one of its component parts, or any combination thereof; or assists diesel emission control strategies in decreasing emissions, or improving fuel economy or increasing performance of a vehicle or component part, or any combination thereof. Fuel additives used in conjunction with diesel fuel may be treated as an alternative diesel fuel. See section (d)(3).
- (25) “Generator Set (gen set)” means a CI engine coupled to a generator used as a source of electricity.
- (26) “Hybrid Cryogenic Temperature Control System” means a temperature control system that uses a cryogenic temperature control system in conjunction with a diesel engine.
- (27) “Independently Owned and Operated” means a business concern that independently manages and controls the day-to-day operations of its own business through its ownership and management, without undue influence by an outside entity or person that may have an ownership and/or financial interest in the management responsibilities of the applicant business or small business.
- (28) “Intermodal Facility” means a facility involved in the movement of goods in one and the same loading unit or vehicle which uses successively several modes of transport without handling of the goods themselves in changing modes. Such a facility is typically involved in loading and unloading shipping containers and trailer vans to and from railcars, trucks, and ocean-going ships.

- (29) “Interruptible Load Contract” means a contract between an electric power supplier and an owner of a facility where the facility owner receives payment or other economic benefit (e.g. lower rates) in return for load reduction.
- (30) “In Use” (CI engine) means a CI engine that is not a “new” CI engine.
- (31) “Low-Use TRU or TRU Generator Set” means the engine operates less than 80 hours in a calendar year and is certified annually in accordance with subsection (e)(6).
- (32) “Manufacturer” means a business as defined in Government Code § 14837(c).
- (33) “Military tactical support equipment (TSE) means equipment that meets military specifications, owned by the U.S. Department of Defense and/or the U.S. military services, and used in combat, combat support, combat service support, tactical or relief operations, or training for such operations.
- (34) “Model Year (MY)” means diesel-fueled engine manufacturer’s annual production period, which includes January 1<sup>st</sup> of a calendar year, or if the manufacturer has no annual production period, the calendar year.
- (35) “New” (CI engine) means any CI engine
- (A) That has been constructed of new parts that has never been subject to a retail sale or lease to an end user, or
  - (B) An engine that has been reconstructed after the effective date of this section, where the cost of a single reconstruction is greater than or equal to 50 percent of the purchase price of a new similarly sized engine (basic equipment only).
- (36) “Nitrogen Oxide (NO<sub>x</sub>)” means compounds of nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), and other oxides of nitrogen. Nitrogen oxides are typically created during combustion processes and are major contributors to smog formation and acid deposition.
- (37) “Non-methane Hydrocarbons (NMHC)” means the sum of all hydrocarbon air pollutants except methane. NMHCs are precursors to ozone formation.
- (38) “Owner or Operator” means any person that owns (or leases to another person) a TRU or TRU gen set or any person who operates a TRU or TRU gen set, including but not limited to:

- (A) An individual, trust, firm, joint stock company, business concern, partnership, limited liability company, association, or corporation including but not limited to, a government corporation;
  - (B) Any city, county, district, commission, the state or any department, agency, or political subdivision thereof, any interstate body, and the federal government or any department or agency thereof to the extent permitted by law; or
  - (C) A project proponent and any of its contractors or subcontractors.
- (39) “Particulate Matter” means the particles found in the exhaust of CI engines, which may agglomerate and adsorb other species to form structures of complex physical and chemical properties.
- (40) “Purchase or Lease” means that a purchase or lease contract has been signed by both parties for a TRU to be delivered within one year of the purchase or lease contract date, which is the date the contract is signed by both parties.
- (41) “Rated Brake Horsepower” means the power delivered, according to the statement of the manufacturer, at the rated speed.
- (42) “Refrigerated Shipping Container TRU” means a shipping container equipped with a TRU. Shipping container TRUs use an integral internal combustion engine to power the refrigeration/heating system.
- (43) “Rotating Outage” means a controlled involuntary curtailment of electrical power service to consumers as ordered by the system operator.
- (44) “System Operator” means one of the several organizations that control energy in California. System operators include, but are not limited to, the California Independent System Operator, the Los Angeles Department of Water and Power, the Imperial Irrigation District, the Sacramento Municipal Utility District.
- (45) “Transport Refrigeration Unit (TRU)” means refrigeration systems powered by integral internal combustion engines designed to control the environment of temperature sensitive products that are transported in semi-trailer vans, truck vans, reefer railcars, or shipping containers. TRUs may be capable of both cooling and heating.
- (46) “TRU Generator Set (TRU gen set)” means a generator set that is designed and used to provide electric power to electrically driven transport refrigeration units of any kind. This includes, but is not limited to gen sets that provide electricity to electrically powered trailer-mounted TRUs and shipping containers.



(47) “TRUs or TRU Gen Sets Under Facility Control” means TRUs or TRU gen sets are owned or leased by the facility, its parent company, affiliate, or a subsidiary, or under contract to provide carrier service.

(48) “Ultra-Low-Aromatic Synthetic Diesel Fuel” means fuel produced from natural gas by the Fischer-Tropsch gas-to-liquid chemical conversion process, or similar process that meets the following properties:

Property	ASTM	Value
Sulfur Content (ppmw)	D5453	<1
Aromatic Content (wt %)	D51876-99	1.5%
Polynuclear aromatic hydrocarbon (wt %)	-	0.5%
Cetane Number	D613	>74

(49) “Vehicular Diesel Fuel” means any diesel fuel (A) which is not conspicuously identified as a fuel which may not lawfully be dispensed into motor vehicle fuel tanks in California; or (B) which the person selling, offering for sale, or supplying the diesel fuel knows will be dispensed into motor vehicle fuel tanks in California; or (C) which the person selling, offering for sale, or supplying the diesel fuel in the exercise of reasonable prudence should know will be dispensed into motor vehicle fuel tanks in California, and that is not the subject of a declaration under penalty of perjury by the purchaser, offeree, or recipient stating that s/he will not sell, offer for sale, or transfer the fuel for dispensing, or dispense the fuel, into motor vehicle fuel tanks in California.

(50) “Verification Classification Level” means the classification assigned to a Diesel Emission Control Strategy by the Executive Officer (e.g. Level 1, Level 2, or Level 3) as defined in the *Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emission from Diesel Engines (13 CCR Sections 2700 – 2710)*.

(51) “Verified Diesel Emission Control Strategy” (VDECS) means an emission control strategy designed primarily for the reduction of diesel particulate matter emissions that has been verified per the *Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines (13 CCR Sections 2700 – 2710)*. Examples of diesel retrofit systems that may be verified include, but are not limited to, diesel particulate filters, diesel oxidation catalysts, fuel additives (e.g. fuel-borne catalysts), alternative diesel fuels, and combinations of the above

(e) Requirements.

(1) Emission Standards for New TRU and TRU Gen Set CI Engines.

**Concepts:**

**Option #1: Harmonize with U.S. EPA’s Offroad CI Engine emission standards. U.S. EPA is developing Tier 4 and Tier 5 standards that will provide progressively more stringent engine manufacturer standards for TRU engines. U.S. EPA will publish its Notice of Proposed Rule Making in April 2003 to promulgate these regulations. There would likely be separate standards for <25 hp and ≥25 hp engines. U.S. EPA and ARB staff would determine the technical feasibility and cost-effectiveness of the proposed standards as part of that rulemaking process. Under the harmonization option, this subsection would be removed from the ATCM prior to proposal to the Board since the Offroad CI Engine standards would be part of a separate rulemaking. The TRU ATCM’s Initial Statement of Reasons would include a discussion of the harmonized new offroad engine standards and how they would help reduce diesel PM emissions from TRUs.**

**Option #2: Special new TRU engine standards included in the ATCM. Under this option, ARB would develop TRU-specific emission standards. We would also specify a new special TRU test cycle, provided data are available to justify it.]**

- (A) Except as provided in subsection (c), all new diesel-fueled CI TRU and TRU gen set engines sold for use in California must meet the following emission performance standards for particulate matter in grams per brake horsepower-hour (g/bhp-hr), regardless of horsepower rating, by the compliance dates shown:

PM (g/bhp-hr)	Compliance Date
0.30	January 1, 2005
0.10	January 1, 2010
0.01	January 1, 2015

- (B) These PM emission standards supercede the otherwise applicable Off-road Compression Ignition Engine Standards set forth the 13 CCR Section 2423 and shall be achieved without exceeding the emission standards set for other regulated pollutants (e.g. NMHC + NOx, CO).

**Option #3: New TRU and TRU gen set system emission standards.**

Under this option, rather than establishing emission standards on the engine manufacturers, emission standards would be set for the TRU unit manufacturers. TRU and TRU gen set manufacturers would be required to include a verified diesel emission control system in their equipment packages or alternative technologies that would eliminate the need to operate under diesel engine power when at a facility. The proposed emission standards are presented below.]

(2) Equipment Performance standards for new TRUs and new TRU gen sets sold for use in California.

(A) Except as provided in subsection (c), all TRUs and TRU gen sets sold for use in California must meet new TRU and TRU gen set system emission performance standards shown below by the compliance dates listed.

PM (g/bhp-hr)	Compliance Date
0.30	January 1, 2005
0.10	January 1, 2010
0.01	January 1, 2015

(B) TRU manufacturers may choose to meet the system emission standards with any of the following approaches:

- (i) A new engine certified to meet the TRU system emission standard.
- (ii) Verified Diesel Emission Control Strategy installed as part of the TRU system package.
- (iii) Alternative Technologies:
  - New TRUs and TRU gen sets may be equipped with alternative technologies that could eliminate the need to operate under diesel engine power while at a facility. Examples and limitations follow:
    - a. TRUs equipped with electric standby.
    - b. TRUs equipped with cryogenic temperature control systems and hybrid cryogenic temperature control systems.
    - c. TRUs and TRU gen sets equipped with alternative-fueled engines. Note: Depending on horsepower, these engines may need to meet other emission standards.
    - d. TRUs and TRU gen set engines fueled exclusively with an alternative diesel-fuel that has been verified as a VDECS, provided it is used in accordance with the requirements of subsection (e)(5)(B).

- e. TRUs powered by fuel cells. [Appropriate controls may be needed with diesel reformer use.]
  - f. Any other system approved by the Executive Officer to not emit diesel PM or increase public health risk while at an affected facility.
- (3) Requirements for in-use TRUs and TRU gen sets (applicable to TRU and TRU Gen Set Fleet Owner/Operators and Lessors):

**[Concept: The effects of cleaner new engines and systems will take many years to realize due to the long life of these systems. The concept here is to steadily reduce emissions from in-use TRUs and TRU gen sets. Owners/operators are provided the flexibility to choose from a variety of compliance options. The compliance options would include retrofitting existing engines, replacing old engines with new certified engines, replacing or retrofitting old engines with alternative fueled engines, using alternative diesel fuels exclusively, and using non-diesel refrigeration technologies while at an affected facility.]**

**Older TRUs would be required to come into compliance first. Then, as TRUs reach one useful life (X years) they would be required to come into compliance.]**

- (A) TRUs and TRU gen sets that operate in California shall use one of the compliance options listed below by the compliance dates shown below:
- (i) Retrofit with a Verified Diesel Emission Control Strategy (VDECS) that meets the highest verification classification level that has been verified for the affected model year, or
  - (ii) Use one of the alternative technologies listed in subsection (e)(3)(B), Note: Depending on horsepower, these engines may need to meet other emission standards.
- or
- (iii) If the above options are either unavailable or not chosen, the in-use engine may be replaced with a certified new engine of the same model year as the compliance date.
  - (iv) All 1995 and previous model year (MY) TRUs and TRU gen sets shall be brought into compliance by December 31, 20XX.
  - (v) All 1996 and subsequent MY TRUs and TRU gen sets shall be in compliance by the end of the **Xth** year following its MY, as illustrated below:

Model Year	Compliance Date
1996	December 31, 20XX
1997	December 31, 20XX
1998	December 31, 20XX
1999	December 31, 20XX
2000	December 31, 20XX
2001	December 31, 20XX
2002	December 31, 20XX
2003	December 31, 20XX
2004	December 31, 20XX
2005	December 31, 20XX
2006	December 31, 20XX
2007	December 31, 20XX
2008	December 31, 20XX
2009	December 31, 20XX
2010	December 31, 20XX
2011	December 31, 20XX
2012	December 31, 20XX
2013	December 31, 20XX
2014	December 31, 20XX

(B) Alternative technologies:

Alternative technologies may be used in lieu of retrofitting with a VDECS or replacing an old engine with a new, certified engine. Examples and limitations follow:

- (i) Equip with electric standby. This option is allowed, provided the facilities frequented by the TRU offer compatible electric plug-ins and the TRU is not operated under diesel engine power while at affected facilities, except during an emergency.
- (ii) Equip with cryogenic temperature control systems or hybrid cryogenic temperature control systems. This option is allowed, provided the TRU is not operated under diesel engine power while at affected facilities, except during an emergency.
- (iii) Equip with alternative-fueled TRU engines.
- (iv) Fuel exclusively with an alternative diesel-fuel that has been verified as a VDECS, provided it is used in accordance with the requirements of subsection (e)(5)(B). Exclusive use of an alternative diesel fuel qualifies the TRU for exemption from the requirement to meet the highest verification classification level that has been verified for the model year.

- (v) Power by fuel cells. [Appropriate controls may be needed with diesel reformer use.]
- (vi) Equip with any other system approved by the Executive Officer to not emit diesel PM or increase public health risk while at an affected facility.

(C) Replacements Due to Failures

- (i) If a VDECS fails within its warranty period, the owner may replace it with the same VDECS.
- (ii) If a VDECS fails outside its warranty period and a higher verification classification level VDECS is available, then the owner/operator shall upgrade to the highest level VDECS available.

(D) Labeling Requirements

***[Concepts: We're trying to provide a quick and easy means of identifying equipment that is in compliance. The label could include an easy visual indication, a bar code, or a transponder used with automated equipment identification technology that computerizes compliance monitoring.]***

- (i) In-Use Compliance Labels: Beginning on January 1, 20XX, all TRUs and TRU gen sets that have complied with the requirements of subsection (e)(3) shall have a label permanently affixed in clear view. This label shall identify the unit as in compliance with the TRU ATCM In-Use requirements and shall indicate the compliance option chosen. [\*\*Detailed label layout, location, and terminology will be added to this later.\*\*]
- (ii) Low Use Labels: Beginning on January 1, 20XX, all TRUs and TRU gen sets that qualify as “low use” under the criteria listed in subsection (e)(6) shall have a label permanently affixed in clear view. This label shall identify the unit as “Low Use”. [\*\*Detailed label layout, location, and terminology will be added to this later.\*\*] This label is required, in addition to the requirement to place a copy of the certificate in a water-tight sleeve in accordance with subsection (e)(6)(D).

- (E) Compliance Extensions. An owner may receive an extension in compliance for the following reasons and terms.

***[Concepts: We're trying to provide flexibility in meeting the compliance dates in the event of unforeseen technological or economic feasibility issues.]***

- (i) No Verified Diesel Emission Control Strategy. If a diesel emission control strategy has not been verified or is not commercially available for a particular engine, an annual extension in compliance may be granted under the conditions specified in subsection a, below:
  - a. Owner Application Compliance Extension. An owner may apply to the Executive Officer for a compliance extension if a diesel emission control strategy is not verified for a TRU or TRU gen set engine six months prior to a compliance deadline specified in subpart (e)(3)(A)(iv) or (e)(3)(A)(v). The owner must provide documentation as follows:
    - 1. Identification of each engine for which no diesel emission control strategy has been verified, or
    - 2. Identification of each engine and TRU combination for which no diesel emission control strategy is commercially available and a list of the manufacturers that have been contacted with their responses to a request to purchase.
    - 3. The owner shall certify by signature under penalty of perjury that he is in compliance in all other regards as required in subpart (e)(3)(A) for all active TRUs and TRU gen sets.
    - 4. The application for compliance extension must be received by the July 31<sup>st</sup> prior to the applicable compliance deadline.
- (ii) Financial Hardship. An owner may apply to the Executive Officer for a one year compliance extension if compliance would result in financial hardship, provided the circumstances leading to noncompliance are beyond the control of the owner.
  - a. The following documentation must be provided at least 60 days prior to the compliance date that cannot be met.
    - 1. Discussion of the reasons for requesting a compliance extension.
    - 2. Documentation of financial hardship shall include, but is not limited to, an analysis of the cost of compliance, the sources of available funds, and the shortfall between the funds available and the cost of compliance.
- (iii) Supplier unable to deliver per agreed-to deadlines within the compliance schedule. An owner may apply to the Executive Officer for a 6-month compliance extension, provided the circumstances leading to noncompliance are beyond the control of the owner.

a. The following documentation must be provided at least 30 days prior to the compliance date that cannot be met.

1. Documentation of due diligence in procuring necessary components and completing installation within the compliance deadline.

(iv) Discontinuation of Fuel Verified as a diesel Emission Control Strategy. In the event another available control technology is not commercially available within 30 days from the discontinuation of a fuel verified as a diesel emission control strategy, the owner shall submit a compliance plan to the Executive Officer no later than 60 days after discontinuation that demonstrates the owner will bring his active fleet into compliance within six months.

(v) The Executive Officer would approve or disapprove the compliance extension request on a case-by-case basis.

(vi) The applicant shall be held accountable for noncompliance until a compliance extension is approved by the Executive Officer.

(4) Requirements for Facilities

***[Option #1: “Large” facilities with TRUs or TRU gen sets under facility control would be required to reduce diesel PM emissions sooner. The emission reductions achieved with cleaner new TRU engines, new TRU systems, and retrofits to in-use TRUs that are under facility control may still leave near source risk at large facilities at levels higher than acceptable. There are a number of possible approaches that could be used. For example, we could require the facility to develop a risk reduction plan, require a set percentage reduction for each facility, require a lower fleet average emission rate, or include strategies that reduce or eliminate diesel TRU engine operations while at the facility. Subsequent phases would be adopted in the 2006 time-frame to bring “medium” and “small” facilities into compliance in a similar way. Staff are interested in comments that would build on this concept.]***

***Option #2: Under this option, we would not propose a facility requirement at this time. Rather, we would require larger facilities to provide data and information. ARB would evaluate that information and then develop a regulation in a year or two that would require facilities with TRUs or TRU gen sets under facility control to do more to reduce the diesel emissions and near source risk due to TRUs. Ports, intermodal facilities, and cold storage facilities would not be included at this time, provided they have no***



***TRUs or TRU gen sets under facility control. Subsequent phases would be adopted in the 2006 time-frame to bring “medium” and “small” facilities into compliance in a similar way.]***

- (A) Except as provided in subsection (c), all facilities frequented by TRUs shall comply with the recordkeeping and reporting requirements of subsection (f)(2)(A).
- (B) New facilities whose building permits are issued after January 1, 20XX shall provide infrastructure to support alternative technologies so that TRUs or TRU gen sets under facility control are not operated under diesel engine power at any time while at the facility.

***[The concept here is to require new facilities to have the infrastructure to support the cleanest technology available from the onset of their operations.]***

(5) Fuel Requirements:

***[The concept here is to ensure that all diesel TRUs and TRU gen sets fueling in California would use CARB diesel. Other provisions in this section are designed to prevent miss-fueling of TRUs committed to using alternative diesel fueled engines as a compliance option.]***

- (A) Beginning on January 1, 20XX, TRUs and TRU gen sets shall use fuel that is lawful for use or sale in California as a vehicular diesel fuel.
- (B) Fleet operators opting to use alternative diesel fuels in CI TRU and TRU gen set engines to comply with this section shall be subject to the following requirements:
  - (i) Subject fleet operators shall comply with recordkeeping and reporting requirements in accordance with subsection (f)(1)(C) of this regulation.
  - (ii) Subject fleet operators shall be prohibited from operating subject TRUs or TRU gen sets in California using diesel fuel or CARB diesel fuel.
  - (iii) In the event that the fleet operator decides to revert to using CARB diesel fuel, the owner-operator shall comply with the requirements of subsection (e)(3) within six months of discontinuation of alternative diesel fuel use. Within 10 days of discontinuation, the owner/operator shall notify the Executive Officer in writing of this change in fuel use and shall include an update to any report submitted to comply with subsection (f)(1).

- (C) Fleet operators that retrofit TRUs or TRU gen sets with a VDECS that requires certain fuel properties to be met in order to achieve the required PM reduction or PM emissions shall only fuel the subject TRU or TRU gen set with fuel that meets these specifications when operating in the state of California. In addition, fleet operators that choose a VDECS that requires certain fuel properties to be met in order to prevent damage to the VDEC or an increase in toxic air contaminants, other harmful compounds, or in the nature of the emitted PM shall only fuel the subject TRU or TRU gen set with fuel that meets these specifications.
  - (D) Beginning on January 1, 20XX, all affected TRU and TRU gen set fuel tanks shall have a permanently affixed label in plain view near the fill spout that clearly identifies the proper fuel that is required to be used to be in compliance under the chosen pathway when operating in the State of California.
- (6) Requirements for certifying “low-use” TRUs and TRU gen sets
- (A) The fleet owner shall equip the engine with a non-resettable hour meter.
  - (B) The owner/operator shall provide an annual written certification to ARB by January 31<sup>st</sup> of each year that includes the following information.
    - (i) Serial number of the TRU or TRU generator set
    - (ii) Serial number of the engine
    - (iii) Hour meter reading on December 31<sup>st</sup> of the previous year and the number of hours of engine operation in the previous calendar year.
    - (iv) Signature under penalty of perjury by the responsible official that the TRU has been equipped with the same hour meter during the last calendar year and that it has not been operated more than XX hours or XX loads into California in the previous calendar year.
  - (C) ARB shall issue a certificate to the owner exempting qualifying “low use” TRUs and TRU gen sets from the requirements of this section.
  - (D) The owner shall place a copy of the certificate in a water-tight sleeve mounted inside the TRU or TRU gen set chassis housing.
- (f) Monitoring, Recordkeeping, and Reporting Requirements

***[The concept here is to come up with a cost-effective way to show compliance with the requirements. We understand that many carriers and facilities track the location and temperature of their goods with GPS and various types of telemetry. We believe there may be many technologies available or on the horizon that could be easily adapted to make monitoring, recordkeeping and reporting less burdensome. Fleets would be required to submit an initial***

**report and annual reports until all TRUs are in compliance. Facilities that have TRUs or TRU gen sets under facility control and which have X or more loading dock doors serving refrigerated areas would be required to submit a report.]**

(1) TRU and TRU gen set fleet owner/operator and lessor recordkeeping and reporting.

(A) Initial Reporting

- (i) All fleet operators subject to this regulation shall submit an initial report to ARB [or designated agency] by June 30, 20XX.
- (ii) The initial report shall include the following information:
  - a. Company name, address, and contact information for the responsible official (phone number, email address, fax number).
  - b. List of all terminals located within California, with address, phone number, and terminal contact name.
  - c. TRU and TRU gen set inventory information for each TRU and TRU gen set:
    - 1. TRU or gen set make, model, model year, and serial number
    - 2. Engine make, model, model year, and serial number
    - 3. Terminal that the TRU is assigned to
    - 4. Other identification numbers (if applicable), *[Trailer VIN# or appropriate alternative identifier may also be appropriate.]*
    - 5. Operational status (active or inactive).
  - d. Certification under penalty of perjury that the information provided in the report is accurate.

(B) Annual Report

- (i) Starting in 20XX, all fleet operators subject to this regulation shall submit an annual report to ARB [or designated agency] by January 31<sup>st</sup>. This requirement shall continue until January 31, 20XX or until all TRUs in the fleet are in compliance.
- (ii) The annual report shall include the following information:
  - a. Company name, address, and contact information for the responsible official (phone number, email address, fax number).
  - b. List of all terminals located within California, with address, phone number, and terminal contact name.

- c. TRU and TRU gen set inventory and compliance information for each TRU and TRU gen set:
  - 1. TRU or gen set make, model, model year, and serial number
  - 2. Engine make, model, model year, and serial number
  - 3. Terminal that the TRU is assigned to
  - 4. Other identification numbers (if applicable), *[Trailer VIN# or appropriate alternative identifier may also be appropriate.]*
  - 5. Operational Status (active or inactive)
  - 6. Compliance status with the requirements of subsection (e)(3) and the compliance option chosen.
- d. Certification under penalty of perjury that the information provided in the report is accurate.

(C) Alternative Diesel Fuel Use and Fuel Additive Recordkeeping and Reporting.

- (i) Fleet operators that choose a compliance pathway that involves the use of alternative-diesel fuel (e.g. B100 biodiesel fuel or ultra-low-aromatic synthetic diesel fuel) and/or fuel additive (e.g. fuel-borne catalyst) shall maintain records that document exclusive use of the chosen fuel or additive for each affected CI engine and hours of operation. Appropriate records would be copies of receipts or invoices of appropriate fuel and/or fuel additive and daily operating hour logs.
- (ii) Records shall be kept available for a minimum of two years and shall be made available to ARB inspectors [or designated agency] upon request.
- (iii) An annual report shall be submitted to ARB [or designated agency] by January 31<sup>st</sup> of each year reporting the total hours of operation in California and total alternative diesel fuel and/or fuel additive use for the prior calendar year.

(2) Facility monitoring, recordkeeping, and reporting.

- (A) All facilities subject to this subsection shall submit a report to ARB [or designated agency] by January 1, 20XX, containing the following information:
  - (i) Contact information for the facility's responsible official.
  - (ii) The number of loading dock doors serving refrigerated storage space.
  - (iii) The number of TRUs or TRU gen sets under facility control.

- (iv) Total annual TRU engine operating hours for all TRUs or TRU gen sets under facility control.
- (v) An estimate of the total annual TRU or TRU gen set engine operating hours while at the facility for all TRUs or TRU gen sets under facility control.
- (vi) The types of refrigerated goods shipped.
- (vii) The hours of the day when TRUs are operated, from initial chill down to dispatch.
- (viii) The number of days per week that loading and unloading of refrigerated goods occurs.
- (ix) List of the types of land use currently occurring within 1000' of the facility fence line.
- (x) A map of the facility, drawn to scale which shows the refrigerated loading dock area(s), reefer trailer parking areas, facility property lines, and the scale used.
- (xi) Facility responsible official certification – the top official at the facility shall certify under penalty of perjury to the accuracy of the report.

(g) Prohibitions

- (1) No person who is engaged in this state in the business of selling to an ultimate purchaser, or renting or leasing new or used TRUs or TRU gen sets, including, but not limited to, manufacturers, distributors, and dealers, shall intentionally or negligently import, deliver, purchase, receive, or otherwise acquire a new TRU or TRU gen set engine which is intended for use primarily in this state, for sale or resale to an ultimate purchaser who is a resident of or doing business in this state, or for registration, leasing or rental in this state, which does not meet the performance standards or that is not equipped pursuant to this section. No person shall attempt or assist in any such act.
- (2) No person who is engaged in this state in the business of selling to an ultimate purchaser or renting or leasing new TRU or TRU gen set engines, including, but not limited to, manufacturers, distributors, and dealers, shall intentionally or negligently sell, or offer to sell, to an ultimate purchaser who is a resident of or doing business in this state, or lease, offer to lease, rent, or offer to rent, in this state any new TRU or TRU gen set with a new TRU or TRU gen set engine, which is intended primarily for use or for registration in this state, and which does not meet the performance standards or is not equipped pursuant to this section. No person shall attempt or assist in any such action.

- (3) Owner/operators of affected facilities and owner/operators of affected TRUs and TRU gen sets are prohibited from taking action to divert affected TRUs to alternate staging areas in order to circumvent the requirements of this section.

NOTE: Authority cited: sections 39600 and 39601, California Health and Safety Code.  
Reference: sections 39618, 39650, 39658, 39666, 40717.9, 43013, and 43018.

***Staff are interested in comments relevant to all of the concepts proposed herein.  
This is NOT final regulatory language***