



# Regulatory Advisory

Last Updated: December 2013

Advisory 05-01



## AIRBORNE TOXIC CONTROL MEASURE FOR IN-USE DIESEL-FUELED TRANSPORT REFRIGERATION UNITS (TRU) AND TRU GENERATOR SETS

### What is the purpose of this regulation?

At its February 2004 public hearing, the California Air Resources Board (ARB or Board) approved the *Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets (genset), and Facilities Where TRUs Operate (TRU ATCM)*. The TRU ATCM is designed to use a phased approach over about 15 years to reduce the diesel particulate matter (PM) emissions from in-use TRU and TRU genset engines that operate in California. Amendments were approved in 2010 and 2011.

### Why is diesel PM of concern?

In 1998, the Board identified diesel PM as a toxic air contaminant (TAC). Diesel exhaust is a complex mixture of thousands of gases and fine particles that contain more than 40 identified TACs. These include many known or suspected cancer-causing substances, such as benzene, arsenic and formaldehyde. Because of the amount of emissions to California's air and its potency, diesel PM is the number one contributor to the adverse health impacts of TACs known today. Numerous studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks and premature deaths.

### Who is affected by the TRU ATCM?

The TRU ATCM applies to owners and operators of in-use diesel-fueled TRUs and TRU gensets that operate in California, irrespective of whether they are registered in or outside the State. This includes all carriers that transport perishable goods using diesel-powered refrigeration systems on trucks, trailers, shipping containers, and railcars that operate in California. The TRU Regulation also applies to business entities (such as freight brokers and forwarders, shippers and receivers) that hire refrigerated motor carriers to transport perishable goods on California highways and railways, as well as the motor carriers and their drivers.

### What are the basic requirements of the TRU ATCM?

#### Registration and Operator Reports:

Owners of TRUs and TRU gensets that are based in California are required to register them in ARB's Equipment Registration (ARBER) system and affix the ARB identification number (IDN) that ARBER issues to both sides of the equipment housing. Operators of California terminals where TRUs and TRU gensets are garaged, maintained, operated, or dispatched from, including a dispatch office, cross-dock facility, maintenance shop, business, or private residence (but excluding a third-party maintenance and repair facility) must submit operator reports to ARB that provide information about the location of the terminal and list the ARB IDNs assigned to the terminal. Updated registration information and operator reports must be provided within 30 days of information changes. Owner/operators of TRUs and TRU gensets based outside of California may voluntarily register TRUs and TRU gen sets. Use of ARB identification numbers will reduce inspection time.

#### In-Use Performance Standards:

The TRU ATCM requires in-use TRU and TRU generator set engines that operate in California to meet in-use performance standards for diesel PM that vary by horsepower range. These standards can be met by:

- Using an engine that is certified to meet the required emissions limit, or
- Retrofitting the engine with the required level of verified diesel emission control strategy, or
- Using an alternative technology in a way that qualifies for compliance.

The in-use performance standards have two levels of stringency (see Tables 1 & 2) that are phased-in over time (see Table 3). The Low-Emission TRU (LETRU) In-Use Performance Standards shown in Table 1 are phased-in first and apply to model year (MY) 2003 and older engines and MY 2004 engines rated at less than 25 horsepower. The more stringent Ultra-Low-Emission TRU (ULETRU) In-Use Performance Standards shown in Table 2 are phased in later and apply to all TRU engines. Once a TRU meets the ULETRU in-use standard, there is no further, more stringent in-use standard that must be met.

**Table 1**  
**Low-Emission TRU In-Use Performance Standards**

| Horsepower    | Engine Certification | Retrofit with Verified Diesel Emission Control Strategy |
|---------------|----------------------|---|
| Less than 25  | 0.30 gram per hp-hr  | Level 2 or better (at least 50% PM reduction)           |
| 25 or Greater | 0.22 gram per hp-hr  | Level 2 or better (at least 50% PM reduction)           |

**Table 2**  
**Ultra-Low Emission TRU In-Use Performance Standards**

| Horsepower    | Engine Certification           | Retrofit with Verified Diesel Emission Control Strategy |
|---------------|--------------------------------|---|
| Less than 25  | N/A – must retrofit or replace | Level 3 (at least 85% PM reduction)                     |
| 25 or Greater | 0.02 gram per hp-hr            | Level 3 (at least 85% PM reduction)                     |

Alternative technologies may be used to meet the in-use performance standards if diesel PM emissions are eliminated while at non-retail delivery and pick-up points, with certain exceptions (e.g. during an emergency or normal yard maneuvering) and limited to no more than 30 minutes at retail delivery points. They include use of electric standby or hybrid electric TRUs and hybrid cryogenic temperature control systems. Automated tracking and recordkeeping and other requirements apply to alternative technologies to qualify for compliance. Guidance explains these requirements at: [www.arb.ca.gov/diesel/tru/documents/guidance\\_electricstandby\\_ets.pdf](http://www.arb.ca.gov/diesel/tru/documents/guidance_electricstandby_ets.pdf)

Broker, forwarder, shipper, receiver, motor carrier, and driver requirements

The business entity that hires a refrigerated carrier to transport perishable goods on California highways or railways must require these carriers to only dispatch compliant TRUs and TRU gensets. In addition, they must provide documents for the driver to carry, which identify the business entity that hired the motor carrier, and the driver must present these documents to authorized enforcement personnel upon request. Guidance explains these requirements at: [http://www.arb.ca.gov/diesel/tru/documents/guidance\\_broker-shipper-receiver.pdf](http://www.arb.ca.gov/diesel/tru/documents/guidance_broker-shipper-receiver.pdf).

**What are the Compliance Dates?**

Registration, operator report, and broker-forwarder-shipper-receiver-carrier-driver requirements are now in effect.

In-Use Performance Standards:

TRUs and TRU generator sets that operate in California are required to meet the in-use performance standards on a phased compliance schedule based on the engine model year, as shown in Table 3. All TRUs are scheduled to meet the ULETRU in-use standard if they continue to operate in California. Owners of older TRUs may elect to use a two-step compliance process (first meeting LETRU at the end of seven years after the model year and then ULETRU another seven years later).

**Table 3**  
**In-Use Performance Standard Compliance Schedule for TRUs and TRU Generator Sets**

| Engine Model Year   | Compliance Date for LETRU Standard | Compliance Date for ULETRU Standard       |
|---------------------|------------------------------------|---|
| 2001 or older       | December 31, 2008 (See Note 1)     | December 31, 2015                         |
| 2002                | December 31, 2009                  | December 31, 2016                         |
| 2003                | December 31, 2010                  | December 31, 2017                         |
| 2004 (<25 hp)       | December 31, 2011                  | December 31, 2018                         |
| 2004 (≥25 hp)       | Skip to ULETRU                     | December 31, 2011                         |
| 2005 and Subsequent | Skip to ULETRU                     | December 31st of the model year + 7 years |

Note 1: The compliance date for model year 2001 and older engines to meet the low-emission standard was delayed until December 31, 2009.

Repowering with a cleaner replacement engine is a strategy that keeps the unit in compliance because the in-use requirements and dates are based on the replacement engine's model year or effective model year. For example, if the owner of a TRU that is equipped with a MY 2003 engine elects to repower with an MY 2010 replacement engine, the replacement engine would then be required to meet ULETRU by the end of 2017 (seven years after the replacement engine's model year). See TRU Advisory 13-18 for more details at:

[http://www.arb.ca.gov/diesel/tru/documents/advisory\\_13\\_18.pdf](http://www.arb.ca.gov/diesel/tru/documents/advisory_13_18.pdf).

**For more information**

Compliance assistance documents are available at <http://www.arb.ca.gov/diesel/tru/tru.htm>. Additional questions may be addressed to the toll-free TRU Help Line at (888) 878-2826 or email [tru@arb.ca.gov](mailto:tru@arb.ca.gov). If you require special accommodation or language needs, please call 1-888-878-2826 or email [tru@arb.ca.gov](mailto:tru@arb.ca.gov). TTY/TDD/Speech users may dial 711 for a California Relay Service.

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