



Regulatory Advisory

Last Updated: January 2011

Advisory 05-01



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

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, 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 generator set engines that operate in California.

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 contains 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 generator sets 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.

What are the basic requirements of the TRU ATCM?

Registration and Operator Reports:

Owners of TRUs and TRU generator sets that are based in California are required to register them with ARB (i.e. apply for an ARB identification number). Operators of California terminals where California-based TRUs and TRU generator sets 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 TRUs they operate in California. Updated registration information and operator reports must be provided within 30 days of information changes. The ARB identification numbers must be affixed to both sides of the TRU or TRU generator set housing. Owner/operators of non-California-based TRUs and TRU generator sets may choose to voluntarily apply for an ARB identification number. Use of ARB identification numbers will reduce inspection time at distribution centers, border crossings, scales, roadside inspection stations, and anywhere a TRU operates.

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 meets the required engine certification value, or
- Equipping the engine with the required level of verified diesel emission control strategy, or
- Using an alternative technology.

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.

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 can 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 limited 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
- ✓ Hybrid cryogenic temperature control systems

What are the Compliance Dates?

Registration and Operator Reports:

Registration applications to get an ARB identification number for each California-based TRU and TRU generator set and the initial operator reports were due July 31, 2009. Updates are required within 30 days if any information changes.

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. As the schedule indicates, all TRUs are scheduled to meet the ULETRU in-use standard if they continue to operate in California. Owners of older TRUs are subject to a two-step compliance process (first meeting LETRU and then ULETRU seven years later). They have the option, however, to skip LETRU and meet ULETRU on the LETRU compliance date (typically seven years after the engine model year). For example, the owner of an MY 2003 engine (rated at any horsepower) could choose to meet ULETRU by the end of 2010 instead of meeting LETRU by the end of 2010 and ULETRU by the end of 2017.

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).

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. If you require special accommodation or language needs, please call 1-888-878-2826 or email tru@arb.ca.gov. TTY/TDD/Speech users may dial 711 for a California Relay Service.

S:\TRU ATCM\TRU Implementation\Regulatory Advisories\Approved-Published\05-01 TRU Regulatory Advisory(1-11).doc