

Transport Refrigeration Unit (TRU)
Airborne Toxic Control Measure (ATCM)
Revision Workshop #2

July 8, 2010
Byron Sher Auditorium, Sacramento, CA



California Environmental Protection Agency
 Air Resources Board

TRU Regulation

Outline

- Background Information
- Enforcement Status
- Proposed Amendments – copies at back of room or download from www.arb.ca.gov/diesel/tru/workshops.htm
- Overview of Rulemaking Process
- Next Steps
- Contact Information
- Discussion
Today only - email to: auditorium@calepa.ca.gov



Background

- **TRU ATCM adopted February 2004**
- **Effective December 2004**
- **U.S. EPA approve waiver January 16, 2009**
- **Enforcement delayed until July 16, 2009**
- **Second enforcement delay to December 31, 2009**

Why Control TRU Emissions?

- Emissions per unit are high
- Create high risk near facilities
- Often near residences
- Contribute to overall exposure to diesel PM
- Large reductions are possible

Basic Requirements

- **Registration in ARBER – by July 31, 2009**
 - All TRUs based in California
 - Voluntary for TRUs based outside California
- **Operator Reports – by July 31, 2009**
 - Affects all California terminals where TRUs are assigned
- **Meet in-use performance standards**
 - Affects all TRUs that operate in California
 - Phased compliance schedule – seven years after engine model year

Compliance Technologies

- Engine replacement – resets the compliance clock
- Unit replacement – resets the compliance clock
- Retrofit with correct level of VDECS
 - LETRU – Level 2 VDECS – model year 2003 & older
 - ULETRU – Level 3 VDECS – model year 2004 & later
- Use Alternative Technology (meets ULETRU)
 - Electric standby/Hybrid electric
 - Hybrid cryogenic
- See listing: Control Technology Options at:
http://www.arb.ca.gov/diesel/tru/documents/control_option_matrix.pdf

Enforcement Status Update

January 1 through May 31, 2010

- Over 4,000 Inspections
- 171 Citations issued for failure to register
- 716 Citations for not meeting in-use performance standards (LETRU)
- Almost \$800,000 in penalties assessed
- Compliance is required within 30 days of settlement

In-use Emission Standard Revision §2477.5(b)(3)

•Change in-use standard for MY 2003 trailer TRU engines (25 hp and greater)

- Currently requires ULETRU by end of 2010
 - Retrofit with Level 3 VDECS or replace engine
 - Level 3 VDECS not available
- Changing to LETRU by December 31, 2010
 - Retrofit with Level 2 VDECS
 - Then comply with ULETRU by December 31, 2017

Revised In-Use Standards and Schedule §2477.5(b)

≥25 HP TRU and TRU Generator Set Engines
In-Use Compliance Dates

MY	In-Use Compliance Year													
	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20
'01 & Older		L	L	L	L	L	L	L	L	U	U	U	U	U
'02			L	L	L	L	L	L	L	U	U	U	U	U
'03				UL	UL	UL	UL	UL	UL	UL	U	U	U	U
'04					U	U	U	U	U	U	U	U	U	U
'05						U	U	U	U	U	U	U	U	U
'06							U	U	U	U	U	U	U	U
'07								U	U	U	U	U	U	U
'08									U	U	U	U	U	U
'09										U	U	U	U	U
'10											U	U	U	U
'11												U	U	U
'12													U	U
'13														U

Note: The compliance date is December 31st of the year shown in the column headings.
 "L" stands for LETRU, or Low-Emissions TRU in-use performance standard.
 "U" stands for ULETRU, or Ultra-Low-Emissions TRU in-use performance standard.

In-Use Emission Standard Revision §2477.5(b)(4)

- Change in-use standard for MY 2003 and 2004 truck TRU engines (less than 25 hp)
 - Currently requires ULETRU
 - Retrofit with Level 3 VDECS or replace engine
 - Propose changing to LETRU
 - Retrofit with Level 2 VDECS or replace engine
 - MY 2003 comply with LETRU by December 31, 2010
 - MY 2004 comply with LETRU by December 31, 2011
 - Meet ULETRU 7 years later

Revised In-Use Standards and Schedule §2477.5(b)

<25 HP TRU and TRU Generator Set Engines
In-Use Compliance Dates

MY	In-Use Compliance Year													
	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20
'01 & Older		L	L	L	L	L	L	L	U	U	U	U	U	U
'02			L	L	L	L	L	L	U	U	U	U	U	U
'03				UL	UL	UL	UL	UL	UL	UL	U	U	U	U
'04					U	U	U	U	U	U	U	U	U	U
'05						U	U	U	U	U	U	U	U	U
'06							U	U	U	U	U	U	U	U
'07								U	U	U	U	U	U	U
'08									U	U	U	U	U	U
'09										U	U	U	U	U
'10											U	U	U	U
'11												U	U	U
'12													U	U
'13														U

Note: The compliance date is December 31st of the year shown in the column headings.
 "L" stands for LETRU, or Low-Emissions TRU in-use performance standard.
 "U" stands for ULETRU, or Ultra-Low-Emissions TRU in-use performance standard.¹¹

ULETRU Compliance Extension if Compliance by Original Deadline §2477.5(g)

- One-year ULETRU compliance extension applies to:
 - MY 2001 and older units that complied by December 31, 2008
 - MY 2002 units that complied by December 31, 2009
- Qualify if certain conditions are met:
 - Compliance achieved by
 - Retrofitting with Level 2 VDECS, or
 - Repowering with Tier 4i or Tier 4f (less than 25 hp) engine, or
 - Replacing unit equipped with Tier 4i or 4f engine, and
 - Unit must be registered in ARBER and IDN affixed to TRU housing
 - Must apply for extension and provide documentation

**ULETRU Compliance Extension if Met
LETRU - §2477.5(m)**

- **One year compliance extension applies to:**
 - Units with MY 2003 and older engines that complied by meeting LETRU
- **Qualify if certain conditions are met:**
 - Retrofitted engine with Level 2 VDECS to meet LETRU
 - Repowered with engine that meets LETRU
 - Tier 4f for less than 25 hp engines (0.30 gram/hp-hr)
 - Tier 4i for 25 hp to less than 50 hp engines (0.22 gram/hp-hr)
 - Or, replaced unit with a unit that is equipped with engine that meets LETRU, and
 - Unit must be registered in ARBER

**Clarify Compliance by Replacing Engines
§2477.5(i)**

TRU Regulation

- **New or rebuilt replacement engine**
 - Must meet more stringent standard than original engine
 - Otherwise, must retrofit with highest level of VDECS available
- **New replacement engines must meet in-use standards by compliance dates based on:**
 - Engine model year (current-tier replacement engines), or
 - Effective model year (prior-tier replacement engines)
- **Rebuilt engines must meet in-use standards based on:**
 - Model year (year of rebuild), if meets current tier
 - Effective model year, if meets prior-tier

**Definition of Effective Model Year
§2477.4(hh)**

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“Effective Model Year” means the last year that a prior-tier standard was in effect

Prior-Tier Emissions Standard	Tier Standard Effective Years	Effective Model Year
Tier 1, 25-50 hp (trailer)	1999-2003	2003
Tier 1, under 25 hp (truck)	2000-2004	2004
Tier 2, 25-50 hp (trailer)	2004-2007	2007
Tier 2, 25-50 hp (truck)	2005-2007	2007
Tier 4i, 25-50 hp (trailer)(pre-tier after 2012)	2008-2012	2012 (after Tier 4f becomes effective)

**Revision to Address “Flexibility” Engines
§2477.4(ss), & 2477.5(b)(6)**

**•TRU units with flexibility engines
produced before 12-31-2010:**

- ULETRU compliance date determined by engine manufacture year
- OEM must provide unit and engine information
- Unit must be registered in ARBER by December 31, 2010

**Revision to Address “Flexibility” Engines
§2477.4(ss), & 2477.5(b)(6) (cont'd)**

•TRU units produced after 12-31-2010:

- Compliance based on the engine’s effective model year if flex engines are used
- ULETRU must be met by the 7th year after the effective model year

Example: For Tier 4i engine used in 2013 or later (when Tier 4f is in effect), the effective model year is 2012 and must meet ULETRU by the end of 2019

**Add Low-Use Exemption
§2477.3(e), §2477.4(eee), & 2477.5(d)(5)**

• Exempt TRUs that operate in California less than 100 hours per year, provided:

- TRU is registered in ARBER;
- TRU is equipped with a non-resettable engine hour meter that must be connected to the unit’s microprocessor in order for the unit to operate;
- TRU is equipped with an electronic tracking system (as defined in §2477.4(jj));
- Owner must apply for low-use exemption and provide one year of hour meter records; and
- Owner must submit annual report

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**Requirements for TRU Manufacturers
§2477.13**

- **Require TRU manufacturers to provide supplemental label with new replacement engines and flexibility engines for registration in ARBER:**
 - Engine manufacturer
 - Engine serial number and model
 - Engine model year or effective model year (if prior-tier engine)
 - Emissions standard tier met (e.g. Tier 2)
 - Engine power rating
- **Provide notice if new unit is equipped with flexibility engine and ULETRU compliance date**

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**Requirements for TRU Manufacturers
§2477.13 (cont'd)**

- **Require TRU manufacturers to periodically report unit and engine data to ARB:**
 - Unit and engine model information for next production year
 - Production information for prior year:
 - Number of units produced by horsepower category for North America, U.S., and California
 - Unit and engine information for prior production years

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**OEMs, Dealers, & Repair Shops
§2477.13, §2477.14, & §2477.15**

- **Require TRU manufacturers, dealers, and installers to provide information document with new units and replacement engines:**
 - Facilitates unit registration in ARBER
 - Provides unit and engine information
 - Must be consistent with labels
 - Must be given to owners upon sale
- **Notify buyers if unit is equipped with flex engine and the resulting compliance date**

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TRU Regulation

Requirements for Engine Rebuilders
§2477.16

- Clarify engine rebuild requirements
- Require engine rebuilders to provide supplemental label and information document with rebuilt engines:
 - Facilitates registration in ARBER
 - Provides rebuilt engine information
 - Must be consistent with labels
 - Must be given to owners upon sale
- Require engine rebuilders to provide emissions certification configuration documentation to ARB that is signed and stamped by a licensed engineer

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TRU Regulation

Electric Standby Recordkeeping & Reporting - §2477.5(a)(3)(A) & (d)(3)

- Requirements to ensure Electric Standby (E/S) is being used in a way that qualifies as Alternative Technology:
 - Manual recordkeeping to demonstrate engine nonoperation
 - Automated, GPS-based electronic tracking and reporting to be phased in:
 - 50 percent of fleet by December 31, 2011
 - 100 percent of fleet by December 31, 2012
 - Nonretail delivery or pick-up points must have electric plugs at loading and parking spaces
 - At retail delivery or pick-up points, limit TRU engine operation to 30 minutes or plug in
 - Registration in ARBER required

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Dealer Requirements
§2477.14

- Registration and in-use compliance are not required for operational noncompliant units provided in a dealer's yard:
 - Unit not operated onsite except as demonstration
 - Unit is not offered for sale, rent, or lease to a person doing business in California
- Operational noncompliant units can be moved on road provided:
 - Unit is not operating/not loaded with perishable goods
 - Documentation is maintained supporting reason for transit

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Exemption for Nonoperational Units - §2477.3(b)

- **Applies to TRUs that meet any of the following scenarios:**
 - TRUs separated from van
 - Trailer TRUs – if fuel tank and battery removed, and unit labeled “NONOPERATIONAL”
 - Truck TRUs – if umbilical connections removed, and unit labeled “NONOPERATIONAL”
 - Units with no engine or fuel injection system
 - TRU generator sets - quarantined to cordoned off area or behind barrier with signs and control panel tags: **DO NOT OPERATE IN CALIFORNIA**

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Exemption for Declared Emergencies §2477.3(d) & §2477.4(kk)

- **Applies to TRUs used during federal- and/or state-declared emergencies**
- **Emergency must be declared by the President of the United States or the Governor of California**
- **Affects TRU-equipped trucks or trailers that provide foodservice to response crews, including, but not limited to, forest fires and earthquakes”**

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EO Authority to Grant Limited Extensions §2477.5(l)

- **ARB Executive Officer (EO) can grant four-month (maximum) extension if equipment not received or installed due to manufacturer delays or installation issues, provided:**
 - TRU must be registered in ARBER
 - Extension request form is submitted before the original compliance deadline
 - Documentation showing timely orders placed is provided
 - Installer statements certifying installation difficulties is provided

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EO Authority to Grant Limited Extensions §2477.5(k)

- **EO can grant a one-year extension if compliance technology not available on market, provided:**
 - Owner submits application six months before compliance date
 - Owner demonstrates rest of fleet is in compliance with ARB regulations
 - Each affected unit is identified
 - Detailed description of reasons compliance not possible is provided

TRU Regulation

Compliance Responsibility to Drivers, Brokers, Carriers, Shippers, & Receivers §2477.7, .8, .9, .10, & .11

- **The entity responsible for arranging transport of goods must only dispatch equipment with compliant TRUs**
- **Drivers** – must provide license, registration, origin & destination of freight, motor carrier, broker, shipper, and receiver information;
- **California-based brokers** – must also provide broker information to dispatched driver;
- **Carriers** – must also provide motor carrier information to dispatched driver;
- **California-based shippers** - must also provide shipper information to dispatched driver;
- **California-based receivers** - must also provide receiver information to dispatched driver

TRU Regulation

Clarify the Prohibitions on Sale of Noncompliant Units §2477.18

- **Prohibitions on sale of noncompliant units:**
 - Prohibits all persons from selling noncompliant units in California to persons that could be reasonably expected to do business in California
 - Allows dealers to sell noncompliant units outside of California with disclosure documentation
 - Allows dealers to purchase noncompliant units but restricts resale to California business unless brought into compliance prior to resale
 - Requires written disclosure on bill of sale if noncompliant for use in California and sold to person residing outside of California

TRU Regulation

**Allow Unit Model Year to Determine
Compliance Requirements and Dates
§2477.5(b)(5)**

- Use of unit model year instead of engine model year allowed, if difference between unit and engine model year is no greater than one year
- If difference is more than one year, then engine model year must be used to determine compliance
- Consistent with TRU Advisory 08-01

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**Allow Use of Unique Equipment ID
Number Instead of ARB IDN
§2477.5(e)(3)**

- Requirements for use of unique equipment ID numbers:
 - Owner must still register unit in ARBER
 - Alternative equipment ID must be truly unique
 - Alternative ID must be affixed to both sides of unit housing
 - ARB IDN must be used in Operator Report
- Consistent with TRU Advisory 08-03-R2

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**Clarify Lessor/Lessee Requirements
§2477.12 & 2477.4(qqq)**

- Clarify lessor and lessee requirements, consistent with Advisory 08-04
 - Revised definition of owner to clarify that lessor is responsible for registration and compliance with in-use performance standards unless delegated to lessee
 - Added a provision for delegating responsibilities to lessee

TRU Regulation

**Hybrid Cryogenic Systems –
Recordkeeping & Reporting
§2477.5(a)(3)(B) & (d)(4)**

- **Add requirements to ensure hybrid cryogenic is being used to qualify as Alternative Technology**
 - Automated, GPS-based electronic tracking, recordkeeping, and reporting
 - Must not operate diesel engine at nonretail delivery or pick-up points
 - Limit TRU engine operation to 30 minutes at retail delivery or pick-up points
 - Registration in ARBER required

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TRU Regulation

Overview of Rulemaking Process

- **Workshops - informal comments**
 - March 24, 2010 - Draft concepts were presented
 - July 8, 2010 - Draft language
 - August 5, 2010 – Draft language, emissions inventory, cost-effectiveness
- **45-Day Public Notice of Rulemaking**
 - Formal comment period begins September 29, 2010
- **Board Public Hearing – November 18, 2010**
 - Formal comments to Board
 - Formal comment period ends

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Next Steps

Workshop #3:

August 5, 2010 (tentative)
10:00 a.m. to 12:00 Noon, Pacific Time
Sacramento, CA

Board Hearing:

November 18, 2010
Sacramento, California

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TRU Regulation Contact Information

- TRU website: <http://www.arb.ca.gov/diesel/tru.htm>
- TRU List Serve: <http://www.arb.ca.gov/listserv/tru.htm>
- TRU Help Line: 1-888-878-2826 (1-888-TRU-ATCM)
- Comments after workshop:
Rich Boyd (rboyd@arb.ca.gov, 916-322-8285) or
Rod Hill (rhill@arb.ca.gov, 916-327-5636)



Proposed Revision Concepts

Questions and Comments

During workshop:

- Email questions and comments during workshop to:
auditorium@calepa.ca.gov
- Conference call-in line
Toll-free in US and Canada: 800-779-1505
Toll Number: 212-287-1669
Passcode: 55390

After workshop:

- Call Rich Boyd (916-322-8285) or Rod Hill (916-327-5636)
