Transport Refrigeration Unit ATCM

Check TRU Compliance Status The public may use this link to search ARB's Equipment Registration (ARBER) system for the compliance status of TRUs and TRU generator sets and provide comments or provide tips on violations about specific TRUs. ARB will monitor these comments/tips and follow up with enforcement action, if warranted. Or, you may report noncompliant TRUs to ARB's Complaint Hotline.

New! (December 23, 2010) TRU Advisory 10-20: This advisory explains what owners of model year 2003 TRUs and TRU gen sets need to do as a result of the 2010 amendments to the TRU ATCM.

TRU ATCM 2010 Amendments

The California Air Resources Board adopted amendments to the Transport Refrigeration Unit (TRU) Airborne Toxic Control Measure (ATCM) on November 18, 2010. The amendments to the TRU ATCM included:

1. All model year (MY) 2003 engines will now be allowed to meet either the Ultra-Low-Emission TRU (ULETRU) in-use standard or the less stringent Low-Emission TRU (LETRU) in-use standard. Owners of TRUs and TRU generator sets equipped with model year 2003 engines should make compliance decisions now and must order compliance technology by December 31, 2010. Compliance technology must be installed by March 31, 2011.

2. Flexibility engines that have been installed prior to 2011 will now use the engine's manufacture year as the basis for determining the in-use requirements and deadlines. Flexibility engines that are installed in the future will have a shorter operational life, so in-use compliance is based on the effective model year, as defined in the amendments.

The amended regulation is available in Appendix A of the Staff Report: Initial Statement of Reasons at: http://www.arb.ca.gov/regact/2010/tru2010/tru2010.htm

Background

Transport Refrigeration Units (TRUs) are refrigeration systems powered by diesel internal combustion engines designed to refrigerate or heat perishable products that are transported in various containers, including semi-trailers, truck vans, shipping containers, and rail cars. Although TRU engines are relatively small, ranging from 9 to 36 horsepower, significant numbers of these engines congregate at distribution centers, truck stops, and other facilities, resulting in the potential for health risks to those that live and work nearby. Since diesel particulate matter has been identified as a toxic air contaminant, the ARB adopted an Airborne Toxic Control Measure (ATCM) for TRUs and TRU generator sets on February 26, 2004. Please see more information about this rulemaking is at: 2004 TRU ATCM Rulmaking. Key terms: transport refrigeration unit, TRU genset, reefer, refrigerated truck, refrigerated trailer, refrigerated railcar, refrigerated shipping container.

Contact Us

Those interested in receiving more information may contact the TRU ATCM toll-free helpline -- 888-TRU-ATCM (888-878-2826), or send us an email to tru@arb.ca.gov.

Click on this link to sign up for the TRU listserve: TRU Listserve.

Compliance Schedule

July 31, 2009	All California-based TRUs must be registered with ARB. Initial Operator Report must also be submitted by this date.
August 2009	ARB staff began field enforcement for registration of all California-based TRUs.
December 31, 2009	Model year (MY) 2001 and older **and** MY 2002 engines must meet the Low-Emission TRU (LETRU) In-Use Performance Standard.
January 2010	In-Use Performance Standard enforcement began.
December 31, 2010	MY 2003 engines must meet either LETRU or the Ultra-Low-Emission TRU (ULETRU) In-Use Standard (Enforcement begins March 31, 2011)
December 31, 2011	MY 2004 engines less than 25 hp must meet LETRU or ULETRU. MY 2004 engines 25 hp and greater must meet ULETRU
December 31, 2012	MY 2005 engines must meet ULETRU.
December 31, 2013	MY 2006 engines must meet ULETRU.
December 31, 2014	MY 2007 engines must meet ULETRU.
December 31, 2015	MY 2008 engines must meet ULETRU.
December 31, 2016	MY 2009 engines must meet ULETRU.
December 31, 2017	MY 2010 engines must meet ULETRU. MY 2003 engines that met LETRU on 2010 must meet ULETRU
December 31, 2018	MY 2011 engines must meet ULETRU. MY 2004 less than 25 hp engines that met LETRU on 2011 must meet ULETRU
December 31, 2019	MY 2012 engines must meet ULETRU.

Please be aware that 30 days after compliance with the in use performance standards, compliance information must be entered into ARBER for each California-based unit. Operator Reports for California terminals where TRUs operate must also be updated to add new IDNs within 30 days of the unit coming under the control of the operator. IDNs must be affixed to both sides of the TRU housing (see TRU Advisory 08-10) within 30 days of receipt.

Additional information is available in TRU Advisory 08-15.

Registration Applications for ARB Identification Numbers

If your TRUs are based in California, you were required to register your TRU with the California Air Resources Board by July 31, 2009. You are strongly encouraged to apply for California Air Resources Board Identification Numbers (IDN) electronically, on the Internet, using the Air Resources Board's Equipment Registration (ARBER) system, since this is the fastest way to register. If you are the owner of a TRU that is based outside of California, applying for an IDN is voluntary and there is no deadline.

Electronic Registration Instructions and Help Page: Please start at the ARBER System Requirements webpage to make sure your computer system is compatible, specifically, that your web browser is the latest version. Update your browser. Then, read and follow the instructions at the following link: ARBER TRU Registration Help Page.

Electronic Registration Login: Login to complete online electronic applications for ARB Identification Numbers (IDN): ARBER Login

Manual IDN Application (Registration) Forms: You may fill out manual IDN applications, but this is not the recommended way to register TRUs because it will take much longer to process these applications. Again, the electronic registration process is recommended (see above). If you do not have a computer with Internet access, we recommend that you find a friend or relative that does. Get together at a computer and call the toll-free TRU Help Line at 1-888-878-2826 and ARB staff will walk you through the on-line IDN application/registration process. If there is no way that you can apply for IDNs electronically, click on the ARBER TRU IDN Manual Application instructions page, print out the instructions, and download the two forms you'll need from that help/instruction webpage (forms #29 and #30). It takes up to 30 days to get IDNs when you submit manual applications. Submit these forms by mail to the address shown on the forms. (If you own or lease terminals in California where TRUs operate, also see Operator Reports, below.)

Carrier Transicold has provided a compliance assistance document to help TRU owners find the Carrier TRU unit and engine labels and the information on those labels that is needed to apply for an ARB Identification Number. The document is titled "Carrier TRU Reporting for ARB Equipment Registration (ARBER) ." Click on this link: Carrier Unit and Engine Label for ARBER. This provides helpful

pictures showing where to look for the Carrier unit labels and Kubota engine labels. It also shows pictures of where to look on the unit label for the unit model, model year, and serial number. There are also pictures showing where to look on the engine label to find the engine manufacturer, model, model year, and serial number. Finally, it directs the user to contact their Carrier Transicold dealer if they need further assistance at www.trucktrailer.carrier.com or www.transportparts.carrier.com. Links to this document have been added to the ARBER TRU IDN Application Help Page (instructions).

Thermo King has provided a compliance assistance document to help TRU owners find the Thermo King TRU unit and engine labels and the information on those labels that is needed to apply for an ARB Identification Number. This Thermo King document is titled "Service Bulletin TT503: ARB Equipment Registration (ARBER) Model and Engine Information." Click on this link: Thermo King Unit and Engine Label for ARBER. This provides helpful pictures showing where to look for the Thermo King unit labels and Isuzu or Yanmar engine labels. It also shows pictures of where to look on the unit label for the unit model, model year, and serial number. There are also pictures showing where to look on the engine label to find the engine manufacturer, model, model year, and serial number. If you cannot find the unit and engine information needed to complete your registration, you are directed to contact your Thermo King dealer for further assistance. Click on the "Dealer Locator" link at Thermo King's website. Links to the Thermo King Unit and Engine Label for ARBER document have been added to the ARBER TRU IDN Application Help Page (instructions).

Thermo King has provided a compliance assistance document to help TRU owners determine the model year of Isuzu engines. Service Bulletin TT505 provides a look-up table that uses the engine serial number to determine the engine model year. Click on this link: Service Bulletin TT505.

Batch Uploads: The ARBER Administrator is also accepting electronic batch uploads of IDN applications. This process will allow TRU owners to transmit hundreds to thousands of registrations in one file for processing ARB IDN applications and Operator Reports. You will need a programmer very experienced in XML programming to prepare the file. Please see the Batch Upload Help Page for details. If you do not have the appropriate technical skills in-house and are only planning to submit a small number of registrations, we highly recommend that you use the ARBER electronic registration system (see above).

If you have any questions on the ARBER registration system, please send an email to arber@arb.ca.gov or call the TRU Help Line at 1-888-878-2826.

Operator Reports

Please apply for IDNs or obtain them from your leasing agent prior to attempting an Operator Report.

If you operate a terminal in California from which you operate TRUs that you own or that are owned by another party, you must comply with the Operator Report requirements of the TRU ATCM. Currently the ARBER system does not accept Operator Reports without inputting at least one ARB Identification Number (IDN). Due to owners taking advantage of the six month grace period for meeting the in-use performance standards (ARBER will not issue an IDN for a noncompliant engine), some California terminal operators may not have at least one IDN needed to complete their Operator Reports by the July 31, 2009, deadline. If you do not have an IDN, but are required to submit an Operator Report, you may use the following temporary IDN: "990101797." This will show that you have attempted to comply with the Operator Report requirement in good faith. This is an ARB-generated IDN and the ARB Enforcement Division will be made aware of the delays and why this IDN is being used in Operator Reports. Do not affix or paint this temporary IDN to any of your equipment. When you are issued your own IDN(s), you must update your Operator Report within 30 days of receiving your IDN(s) by adding your IDN(s) and removing the temporary IDN. Any Operator Reports containing the temporary IDN after January 31, 2010 will be flagged and may be cited and penalized.

Electronic Operator Report Instructions and Help Page: Click on the following link: ARBER TRU Operator Report Help Page

Electronic Operator Report Login: Login to complete online electronic Operator Reports: ARBER Login

Manual Operator Reports: Manual Operator Report Form (form #33), Terminal Information Form (form #34), and Operator Report Instructions can be downloaded from the TRU Manual Operator Report and Terminal Information Help Page. Print out the instructions and download the two forms from that help/instruction webpage. Follow the instructions and submit these forms by mail to the address shown on the forms.

If you have any questions on the ARBER Operator Reports, please send an email to arber@arb.ca.gov or call the TRU Help Line at 1-888-878-2826.

Compliance Assistance

Control Technology Options for Complying with the TRU ATCM: View the list of currently available compliance technology options for the TRU ATCM's In-use Performance Standards. The December 31, 2009, compliance deadline for model year 2002 and older TRU engines has passed. ALL noncompliant TRUs will be cited and penalties up to $1,000 per unit will be assessed. Don't delay! There will be no allowances for late ordering.

Transport Refrigeration Unit Tutorial - PowerPoint slides in pdf with textual script have been updated. These slides can be used to help interested parties understand the TRU ATCM. (Español)

How Do I Comply with the TRU ATCM? - Revised April 28, 2009. This document provides logic flow charts and references to assist with TRU ATCM compliance. (Español)

- In-Use Performance Standards (see page 4)
- Registration applications for ARB Identification Numbers (see page 7)
- Operator Reports (see page 8)

Frequently Asked Questions and Guidelines for Compliance with the TRU ATCM - Revised April 28, 2009. This document provides guidelines for compliance in a question and answer format. (Español)

TRU ATCM Advisories

All advisories can be reviewed on the TRU ATCM Advisories page.

Third Party Agreement Forms

TRU ATCM Third Party Agreement Confirmation Form for LEASED Units: This form may be used by an owner (lessor), that conveys the use of their transport refrigeration unit (TRU) and TRU generator set by lease agreement to an operator (lessee), to delegate the TRU ATCM responsibilities for equipment registration to the lessee. See TRU ATCM Advisory 08-04 for more details.

TRU ATCM Third Party Agreement Confirmation Form for CONTRACTORS/CONSULTANTS: This form may be used by an owner (lessor), that conveys the use of their transport refrigeration unit (TRU) and TRU generator set by lease agreement to an operator (lessee), to delegate the TRU ATCM responsibilities for equipment registration to a third part contractor or consultant.

Compliance Assistance Contacts

TRU ATCM Compliance Option Contacts: A list of companies that may be able to provide compliance options to TRU owners for complying with the TRU ATCM is now available. This list includes verified diesel emission control strategy (VDECS) manufacturers, dealers, and installers as well as an engine rebuilding company. Your local TRU dealer may also be able to help you evaluate compliance solutions. Companies and trade names mentioned on this list do not imply California Air Resources Board endorsement. This list may be revised periodically as additional companies are identified.

Financing Options for TRU ATCM Compliance: Revised December 23, 2009. A list of companies that offer financing for compliance with the TRU ATCM. Also, grant programs are listed that may be able to assist qualified applicants.

Public Health Information

- Summary of Adverse Impacts of Diesel Particulate Matter
- Fact Sheet - Health Effects of Diesel Exhaust
- More premature deaths than previously thought from particles in vehicle exhaust - New research reveals significant new information. News Release and Sacramento Bee Article
- Lung Cancer and Vehicle Exhaust in Trucking Industry Workers: Research Paper and related Sacramento Bee Article: Diesel linked to truckers' deaths
- Health Effects of Diesel Exhaust: An HEI Perspective
- Diesel Fumes Change Brain Activity

General Information

Final Regulation Order - This document is the formal regulatory language.

TRU Listserve - To learn how to sign up for the TRU listserve.

Refrigerant Disposal - To learn about federal requirements (section 608 of the Clean Air Act) for recovery and recycling of ozone depleting refrigerants during servicing and disposal of TRUs.

TRU Verified Diesel Emission Control Strategy (VDECS) Information

VDECS Installation/Maintenance Information: Provides guidance to end users of VDECS who are interested in purchasing VDECS to comply with the TRU ATCM. Links are provided to lists of installers, information documents about proper installation and maintenance of VDECS, ash handling, and related advisories.

Managing Hazardous Waste from VDECS - ARB prepared this Guidance Document to assist end-users who own, operate, or maintain VDECS to manage ash generated by VDECS or the disposal of spent VDECS.

Level 2 VDECS (50 percent PM control) - meets LETRU:

Proventia's FTF™ Level 2 Plus (greater than or equal to 50 percent reduction in PM plus complies with the 20 percent NO_2 limit before January 1, 2009) flow-through filter verification allows this VDECS to be used to comply with the Low-Emission TRU In-Use Performance Standard (LETRU). The FTF is verified for use on most Thermo King trailer TRUs using 25 to 50 horsepower, 1985 through 2003 model year engines of the following engine models: Isuzu D201, Yanmar 4TNE82-TK and -ETK, and Yanmar 4TNE86-TK and –ETK. The Proventia FTF™ consists of a catalyzed knitted wire mesh flow-through filter with backpressure control system, an exhaust system insulation package, and a backpressure warning indicator. TRU owners should read about the specific conditions and engine families for which the FTF™ has been approved in the Executive Order which has been posted on the ARB website for Level 2 VDECS. For more information contact Proventia Americas LLC, www.proventiafilters.com, 1-800-609-7686.

Proventia Group's Bobtail FTF™ has been verified as a Level 2 Plus flow-through-filter to reduce diesel particulate matter at least 50 percent, plus complies with the 20 percent NO_2 limit. This verification allows this VDECS to be used to comply with the Low-Emission TRU In-Use Performance Standard (LETRU). The Bobtail FTF™ is verified for use on most Thermo King truck TRUs using less than 25 hp, 1987 through 2004 model year engines of the following Yanmar engine models: 3TNE66-TK, 3TNE66KC-ETK, 3TNE72-TK, and 3TNE72KC-ETK. The Bobtail FTF™ is also verified for use on Carrier Transicold truck TRUs using less than 25 hp, 1994 through 2004 model year engines manufactured by Kubota with the following engine models: D722, D1105, D722-E, and D1105-E. The Proventia Bobtail FTF™ consists of a catalyzed knitted wire mesh flow-through filter with backpressure warning indicator. TRU owners should read about the specific conditions and the specific engine families for which the Bobtail FTF™ has been approved in the Executive Order which has been posted on the ARB Verification Procedure - Level 2 website. For more information contact Proventia Americas LLC, www.proventiafilters.com, 1-800-609-7686.

Rypos DPF/LETRU ™ (Level 2 Plus) diesel particulate filter, has been verified to comply with the Low-Emission TRU (LETRU) In-Use Performance Standard on most trailer TRUs using 2003 and older model year engines manufactured by Isuzu, Kubota, and Yanmar. The Rypos DPF/LETRU™ consists of active flow-through filters made out of an electrically conductive sintered metal fiber medium. It is microprocessor controlled with a backpressure control system, an electrical control circuit, and a backpressure warning indicator. TRU owners should read about the specific conditions for which the DPF/LETRU has been approved in the Executive Order, which has been posted on ARB's website for Level 2 VDECS. Specific engine models and families that apply are listed in the EOs attachment, also listed at this webpage. See Rypos, Inc.'s website for more information.

Level 3 VDECS (85 percent PM control) - meets ULETRU

HUSS FS-MK Series The California Air Resources Board has conditionally verified the HUSS FS-MK 40S and 50S DPF as a Level 3 Plus diesel emission control strategy, which meets the ULETRU in-use standard. The Huss FS-MK series is verified for use with 1998 and newer diesel TRU engines. It is capable of reducing emissions of particulate matter (PM) by 85percent or more. The HUSS FS-MK 40S and 50S DPF consists of an active exhaust filter system and an automatic filter regeneration system. The system has three modules with silicon carbide filter material that uses a diesel burner for regeneration. Specific conditions for which the FS-MK 40S (for 0 to 25 hp TRU engines) and 50S (for 26 to 50 hp TRU engines) DPF has been approved may be found in the Executive Order and the list of engines that can be matched with this filter are listed in the attachment, both of which will be posted on the ARB Verification website within several days at: http://www.arb.ca.gov/diesel/verdev/verdev.htm.
See Huss, LLC's webpage for more information.