



TRU Advisory: 08-13

Hybrid Cryogenic Temperature Control System Compliance Option

The purpose of this advisory is to describe how transport refrigeration units (TRU) that are equipped with hybrid cryogenic temperature control systems may be used to comply with the in-use performance standards of the TRU Airborne Toxic Control Measure (ATCM) as an Alternative Technology (see title 13, California Code of Regulations, section 2477.5(a)(3)(B).

Background

A TRU is defined as a refrigeration system powered by an integral internal combustion engine. Pure cryogenic temperature control systems do not have diesel engines that power refrigeration systems and are therefore not subject to the TRU ATCM's in-use performance standards.

Hybrid cryogenic temperature control systems are defined as temperature control systems that use a cryogenic temperature control system in conjunction with a conventional TRU. Hybrid cryogenic temperature control systems are Alternative Technologies that qualify to meet the Ultra-Low-Emission TRU (ULETRU) in-use performance standard, provided the following conditions are met:

1. The TRU does not operate under diesel engine power while at a nonretail facility, except during:
 - a. An emergency;¹
 - b. Normal ingress and egress yard maneuvering; or
 - c. Unit/engine pre-trip inspections, diagnostics, and repair operations;
2. The TRU engine run time at retail delivery points does not exceed 30 minutes, otherwise purely cryogenic temperature control must be used at those retail delivery points to prevent engine operations that exceed 30 minutes at the delivery point;
3. The TRU is equipped with non-resettable engine hour meter and cryogenic system use hour meter;
4. The TRU is equipped with an electronic tracking system; and
5. The TRU is registered in ARBER in accordance with section 2477.5(e).

This also applies to meeting the less stringent Low-Emission TRU In-Use Performance Standard (LETRU).

¹ "Emergency" means any of the following times:

(A) A failure or loss of normal power service that is not part of an "interruptible service contract" (see definition in section 2477.4);

(B) A failure of a facility's internal power distribution system, provided the failure is beyond the reasonable control of the operator;

(C) When an affected facility is placed under an involuntary "rotating outage" (see definition in section 2477.4).

(D) When the President of the United States or the Governor of the State of California declares a state of emergency related to any type of disaster where TRU-equipped trucks or trailers provide foodservice to incident responders, including but not limited to, forest fires and earthquakes.

(E) When the National Interagency Fire Center dispatches mobile catering service businesses with TRU-equipped trucks or trailers to provide foodservice to incident responders located in California.

Is recordkeeping required to demonstrate compliance with the qualification conditions?

Yes. 13 CCR section 2477.5(d)(4) requires an owner that has elected to comply by using a hybrid cryogenic temperature control system to meet specific automatic monitoring, recordkeeping, and reporting requirements with an electronic tracking system.²

Automated recordkeeping must include data that includes the following for each stationary location lasting more than 300 seconds (5 minutes):

- (A) ARB Identification Number of the unit;
- (B) Date;
- (C) Location: GPS coordinates or coded, with full address in code look-up table;
- (D) Time of arrival and departure, and the elapsed time calculated from those readings to show the duration of the stationary position;
- (E) Engine hour meter readings taken at arrival and departure and the elapsed time calculated from those readings to show the TRU engine run time while the vehicle is stationary;
- (F) Cryogenic system use hour meter readings taken at arrival and departure and the elapsed time calculated from those readings to show the cryogenic system run time while the vehicle is stationary;
- (G) The electronic tracking system must generate a report that lists all stationary locations lasting more than 5 minutes where the TRU engine operated for more than 30 minutes, resulting in a violation;
- (H) Records shall be kept available for a minimum of three (3) years and shall be compiled and made available to ARB upon request; and
- (I) Record submittals shall include the owner's or responsible official's signature after the statement: "I certify under penalty of perjury under the laws of the State of California that the information provided is true, accurate, and complete."

What are the requirements for Electronic Tracking System suppliers?

Suppliers must provide tracking systems to TRU owners that record the following data:

1. ARB Unit Identification Number;
2. Date;
3. Address of each stationary location lasting more than 5 minutes (300 seconds);
 - a. This record may be the GPS coordinates and a location code for each stationary location, provided the owner or operator also provides a cross-reference of location codes with the corresponding physical addresses. The location must also be identified as retail or non-retail to properly identify the time limit at the location;
4. Time of arrival and departure, and elapsed time (the duration of the stationary position);

² "Electronic Tracking System" means a system that meets the following criteria:

- (A) The tracking device must acquire, at a minimum, date, time, TRU engine hour meter reading, and location data at a rate of at least one reading per minute, with no more than 10 minutes data gap.
- (B) The tracking device must be capable of determining if the TRU or TRU gen set location is within California and determining the TRU engine run time in California for each day.
- (C) The tracking records must be collected by an independent entity with no business relationship to the owner or operator of the TRU or TRU gen set being tracked, other than to provide the tracking service. The data shall be stored on a server that is secure from tampering and inaccessible to the TRU or TRU gen set owner or operator, other than to download reports over the Internet. An inspector shall have free access to download reports from this website over the Internet that show the TRU or TRU gen set engine operation in California for each day.

5. Engine-hour meter readings taken at arrival and departure to show the TRU engine-run time while the vehicle is at the stationary location; and,
6. Standby electric motor-hour meter readings taken at arrival and departure to show the standby electric motor-run time while the vehicle is at the stationary location.

The tracking system must also provide:

- A. TRU-fleet owners the ability to create a geo-fence for any delivery or pickup points flagging retail or non-retail delivery or pickup points;
- B. TRU-fleet owners secure-server read-only access to view the above parameters for each TRU using E/S standby as a compliance option;
- C. ARB secure-server access to download the above parameters for each TRU using E/S standby as a compliance option; and,
- D. ARB with a detailed written description of the electronic tracking system's anti-tampering design features and its tamper detection-and-reporting features.

Which companies supply electronic tracking systems?

A list of companies offering electronic tracking for TRU compliance is available at the following link http://www.arb.ca.gov/diesel/tru/documents/ets_supplier_list.pdf. This list does not imply an ARB endorsement or recommendation, and is not screened or ranked in any way. Companies not listed should call the TRU Help Line and request to be added. Users of this list are advised to use due diligence in evaluating offerings from companies on this list. If you have any questions, please contact ARB's TRU Helpline at 888-878-2826 (888-TRU-ATCM).

Is reporting of these records required?

Records must be kept available for a minimum of three (3) years and must be compiled and submitted to ARB upon request.

Do cryogenic and hybrid cryogenic temperature control systems have to be verified?

No. Cryogenic temperature control systems do not require verification.

Do I also have to retrofit my engine exhaust with a Verified Diesel Emission Control Strategy (VDECS) to cut my emissions while operating on the road?

No. Provided the diesel engine emissions are eliminated at all facilities, within the limited exceptions listed above, the diesel engine does not also need to be retrofitted with a VDECS.

If a TRU owner had a hybrid cryogenic temperature control system equipped TRU before the LETRU compliance date, can they count this as early compliance and thus get a delay in the ULETRU compliance date?

Just having a hybrid cryogenic temperature control system on a TRU does not automatically qualify the TRU as being in compliance with the in-use performance standards in the TRU ATCM. To qualify as an Alternative Technology compliance strategy, the owner must be able to show that the hybrid cryogenic temperature control system-equipped TRU is operated in a way that eliminates the TRU diesel engine operation while at a facility. Compliance would begin when a qualifying

recordkeeping system was implemented, as described above. Qualifying Alternative Technologies meet ULETRU, and would therefore also meet the less stringent LETRU. Thus, there would be no need for a delay for ULETRU.

For more information

To obtain a copy of the regulation or other related compliance assistance documents, visit the TRU website at <http://www.arb.ca.gov/diesel/tru/tru.htm>. Additional questions may be addressed by calling the toll-free TRU Help Line at 1-888-878-2826 (1-888-TRU-ATCM).

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.

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