



Number 393

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Enhanced Vapor Recovery System for Aboveground Storage Tanks

The Air Resources Board (ARB), in 2008, adopted new enhanced vapor recovery (EVR) performance standards and specifications for aboveground storage tanks (AST). These new standards and specifications cover standing loss control, Phase I deliveries into ASTs and Phase II deliveries to motor vehicles. The purpose of this advisory is to explain the applications of these new AST performance standards and specifications.

What is an AST?

An AST is a gasoline storage tank that is intended for fixed installations, without backfill, that is located above or below grade.

STANDING LOSS CONTROL

What is standing loss control?

Standing loss control is the control of gasoline vapor emissions by reducing gasoline temperature which in turn reduces evaporation. Without standing loss controls, natural heating of the tanks by the sun causes the gasoline to volatilize and vent into the atmosphere. Application of certified paints or certified tank is a principal mechanism for standing loss control. A standing loss control system also includes a pressure/vacuum (P/V) vent valve.

Who is subject to standing loss control?

Air District rules determine which ASTs are subject to vapor recovery requirements such as standing loss control. Check with your air district to find out if your tank is affected. A list of district contacts can be found at: <http://www.arb.ca.gov/vapor/distcontapril09.pdf>. Note that ASTs storing diesel are not required to have vapor recovery systems.

What is the compliance date for new installations?

As of April 1, 2009, all new installations of ASTs are subject to standing loss control if vapor recovery control is required by district rule. Existing installations undergoing a major modification are considered new installations. For standing loss control only, a replacement of an existing tank with a tank of equal capacity is not considered a major modification.

What is compliance date for existing installations?

All existing ASTs subject to vapor recovery must comply by April 1, 2013 by retrofitting with one of the systems listed in Executive Order (EO) VR-301.

What systems are certified for existing installations?

For existing installations, application of any paint listed in VR-301 series and the installation of the Husky 5885 P/V valve will comply with the standing loss control requirement.

EO VR-301 series also lists a number of compliant tanks that do not need to be painted. As of April 1, 2010, EO VR-301 lists three tanks, ConVault's protected AST, Modern Custom Fabrication Inc's SuperVault MH series AST, and Steel Tank Institute's Fireguard protected AST, along with the Husky 5885 P/V valve. Existing ConVault, Fireguard and SuperVault MH will need to install the Husky 5885 P/V valve to comply (Note: SuperVault tanks manufactured by Trustco (EO G-70-132-B) are not included in EO VR-301 series). In the future, ARB staff expects to add other tank models, parts, and P/V valves that comply with the standing loss control.

What if my tank is not listed in EO VR-301?

If the tank model is not listed in EO VR-301, compliance with the standing loss control can be achieved by application of any paint listed in EO VR-301 and installing a Husky 5885 P/V valve.

What systems are certified for new installations?

As April 1, 2010, only the ConVault, SuperVault MH Series AST, or a Fireguard protected AST with the Husky 5885 P/V valve are certified for new installations. ARB staff expects to add other tanks and P/V valve in the future.

PHASE I VAPOR RECOVERY

Who is subject to Phase I?

See response to question on who is subject to standing loss control.

What are the Phase I requirements before July 1, 2010?

Before July 1, 2010, the Phase I vapor recovery requirements for the three certified standing loss control tanks, ConVault, Supervault, and Fireguard are found in EOs G-70-116-F, G-70-132-B, and G-70-162-A, respectively. These EOs can be downloaded from the following websites:

1. ConVault <http://www.arb.ca.gov/vapor/above/g70116f.pdf>
2. SuperVault <http://www.arb.ca.gov/vapor/above/g70132b.pdf>
3. Fireguard <http://www.arb.ca.gov/vapor/above/g70162a.htm>

The ConVault, Fireguard, and Supervault tanks are certified (pre-July 1, 2010) with a Phase I two-point vapor recovery components. Until July 1, 2010, these tanks will be certified with the Phase I system specified under the pre-EVR EOs.

What are the Phase I requirements on or after July 1, 2010?

On or after July 1, 2010, new installation must install Phase I equipment that complies with the new EVR performance standards or specifications AST. Existing installations that have undergone modifications on or after July 1, 2010, are considered new installations.

All existing installations will be required to install Phase I EVR equipment for AST by July 1, 2014.

What Phase I EVR systems are certified?

As of April 1, 2010, only OPW has a Phase I system certified under EO VR-401-A for single-wall AST applications. New EOs detailing additional certified Phase I systems will be released in the future.

PHASE II VAPOR RECOVERY

Who is subject to Phase II?

See response to question on who is subject to standing loss control.

What are the Phase II requirements before January 1, 2012?

Before January 1, 2012, the Phase II vapor recovery requirements for the three certified standing loss control tanks, ConVault, Supervault, and Fireguard are found in EOs G-70-116-F, G-70-162-A, and G-40-132-B. These EOs can be downloaded from the websites listed in the response to the previous question, "What are the Phase I requirements before July 1, 2010?"

The ConVault, Supervault, and Fireguard tanks are certified (pre-2012) with pre-EVR Phase II balance vapor recovery components. As additional tanks are certified for standing loss control, the EOs will be added to the ARB website. Until January 1, 2012, these tanks will be certified with the Phase II system specified under the pre-EVR EOs.

What are the Phase II requirements on or after January 1, 2012?

On or after January 1, 2012, Phase II equipment meeting the new EVR performance standards or specifications must be installed on new installations. Existing installations that have undergone modifications on or after January 1, 2012 are considered as new systems.

All existing installations must install Phase II EVR equipment by January 1, 2016.

What Phase II systems are certified?

As of April 1, 2010, there are no Phase II EVR systems certified.

What are the requirements for pre-EVR balance system?

Operators of Phase II pre-EVR balance systems are required to install as replacement parts any hanging hardware components (nozzles, breakaways, hoses, and swivel) that are certified to EVR standards and are determined to be compatible with pre-EVR balance systems. ARB staff determined that Phase II balance EVR hanging hardware components are compatible with Phase II pre-EVR balance system. These determinations were made by issuance of the following approval letters:

1. Approval Letter 07-09 to Vapor System Technologies (VST) for VST hanging hardware
2. Approval Letter 07-03 to Goodyear for Goodyear hoses
3. Approval Letter 09-10 to Emco Wheaton Retail for EMCO hanging hardware

Advisory 408¹ explains the replacement part requirement in more detail and lists the Phase II EVR hanging hardware that are found to be compatible with Pre-EVR balance system. Advisory 408 can be found at <http://www.arb.ca.gov/vapor/advisories/adv408.pdf>.

E85 for ASTs

Does Executive Order VR-301 or VR-302 apply to storage and dispensing of E85?

No

What if I want to dispense E85?

AST operators, subject to vapor recovery requirements, who wish to dispense E85 will need to submit a letter requesting approval as a research and development test site. The letter should include the address of the site and list of uncertified vapor recovery components that would be installed.

QUESTIONS

Who should I call for questions?

1. Questions regarding this advisory, contact the following:
 - Lou Dinkler at (916) 324-9487 or ldinkler@arb.ca.gov

¹ Please note that the Phase I and II AST compliance deadlines listed in Advisory 408 are incorrect. The correct deadlines are stated in this Advisory

- Sam Vogt at (916) 322-8922 or svogt@arb.ca.gov
- Donielle Jackson at (916) 445-9308 or djackso@arb.ca.gov

2. Questions regarding E85, contact the following

- Lou Dinkler at (916) 324-9487 or ldinkler@arb.ca.gov
- Mark Watkins at (916) 650-0594 or mwatkins@arb.ca.gov

3. Questions about ARB's Vapor Recovery program, please visit our website at <http://www.arb.ca.gov/vapor/vapor.htm> or contact ARB's Engineering and Certification Branch at (916) 327-0900.