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**Category:** 25 – Gasoline Tank Trucks

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Office of Air Quality Planning and Standards  
Research Triangle Park, North Carolina 27711

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SUBJECT: Gasoline Tank Truck Certification Program in California  
Trip Report for 2/24 - 2/25/81

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Representation: Frances Perry, Dean Simeroth, head of vapor recovery source testing at the California Air Resource Board (CARB); Tom Rarick, Morris Goldberg, Region IX, Gary Lavagnino, S & A Region IX; Bill Krimson, N.J.; Phil Florkowski, CT; Brock Nicholson, Bill Polglase, RTP; Cynthia Greene, Region I.

The CA. vapor recovery source testing program is administrated from CARB in Sacramento, and responsibility for the tank truck certification program is delegated to the state fire marshal's office. Certification testing is done once a year by the tank truck owner's service and maintenance team. The state fire marshals enforce this program by 1) certifying 10% of the maintenance certification tests, 2) running random roadside pressure and vacuum tests on the trucks, and 3) checking certification stickers at the loading rack.

All gasoline tank trucks that are loaded in the State of CA are certified during a six month period from January 1, to July 1. Tank trucks that load in another state and unload in the State of CA are governed by local requirements. New tank trucks can not load without being certified, and if the tank truck changes ownership it must be certified.

Tank trucks are certified by state authority through the state fire marshal's office. The state fire marshal's office is made up of 225 staff, 50 at headquarters, and 20 assigned to the tank truck certification and safety programs. These programs include 1) providing a registration number, 2) a biannual certification of safety, 3) visual and or pressure testing, and 4) an annual certification of leak tightness. The tank trucks must display a certification sticker for leak tightness before they can be filled at the loading rack.

The CARB provides a training seminar for the pressure and vacuum testing for leak tightness, and the headquarters staff at the state fire marshal's office give additional certification training to the staff assigned to the tank truck programs. These state fire marshals are qualified to 1) certify the trucks, 2) run spot checks at loading rack with an explosimeter, and 3) perform random roadside pressure and vacuum tests with their own mobile testing unit.

Tank trucks usually come in once a month, or every 21 working days, for routine maintenance. With such frequent service the tank trucks are kept in good shape, and most are able to pass a two inch random roadside test. Leak tightness can also be maintained by not opening the dome (some can not be opened), and thus not damaging the seal. Top loaders have to open the dome, and for that reason have more problems in maintaining leak tightness.

The certification test is performed during these routine service checks by the maintenance staff who are not licensed by the state, but are trained by CARB to verify leak tightness. Some independent tank truck owners may not come in as frequently as once a month for service, but they are serviced at least twice a year which provides adequate time for certification. Therefore, this certification program does not create additional downtime for the truck because the test is performed as part of the routine maintenance on the tank truck.

For testing, the tank must be 1) purged of gasoline vapors which can be accomplished by flushing with diesel fuel, heating fuel or jet fuel, or by purging the tank for two to three hours, and 2) located in an area protected from direct sunlight and wind variables. The tank is then pressurized by a source of air or inert gas to 27.5 inches of water (1 psi) above atmospheric pressure. The pressure is then stabilized to 18 inches and a pressure change of not more than one inch is allowed. The pressure test will identify leaks in the dome. If the tank passes the pressure test it will usually pass the vacuum test. The vacuum test involves evacuating the tank to 10 inches of water on the monometer. The vacuum is then stabilized to six inches of water and is permitted to drop not more than one inch in five minutes. This test will identify any problems with the pv valve. These certification and test procedures are covered in the State of CA. Air Resources Board. Stationary Source Test Methods.

Random roadside tests, carried out by the state fire marshal's office, are performed with a mobile pump unit. In this test a drop of two inches in five minutes is allowed in each the pressure and the vacuum test. The state of CA. may lower this roadside standard drop to two and a half inches in five minutes in an upcoming hearing, but the certification program standard will remain the same.

No damage has ever been done to these tank trucks during the certification tests. The state covers their liability for any damage done to the tank truck during testing by insuring that the tester complies with all safety regulations. Grounding and purging are two such procedures that must be followed to comply with safety requirements.

Three sources were visited in the Sacramento area. At Fredrickson's, a maintenance service station for tank trucks, an air pressure pump, vacuum, and a numerically calibrated monometer were used for the pressure and vacuum tests. At Chevron, where much of the trial work for the certification tests was done, a pressure pump, a home made manometer with roughly painted calibration, and a pick-up truck carburetor with a copper pipe fitting attached for a vacuum were used. The Chevron maintenance station proved that minimal equipment investment is necessary to conduct the certification tests. At the third source, Union 76, tank truck loading using stage I vapor recovery was seen.

Authority for enforcement of the certification program is given in CA. law 41950 Article 5. The law, outlined in Rule C of the State of CA. Air Resources Board Suggested Vapor Recovery Rules, is keyed into the loading facility. Terminal facilities are required to check for the certification sticker before loading the tank, and the state fire marshals conduct random checks at the loading rack for these stickers. EPA's Region IX surveillance and analysis staff also conduct visual spot checks, mostly as an overview effect to assist the state enforcement.

If a violation is discovered, either loading without a certification sticker; or failure to pass a random certification test, the tank truck owner has three to five days to bring the tank truck up to certification standards or else take the truck out of service. A good faith effort is expected by the tank truck owner, but if the infraction continues a notice of violation is issued and a fine of \$500.- for each transfer action is leveled.

The tank truck owners have six months in which to bring their tank trucks up to certification standards. A \$35.- fee is charged by the state in order to cover the Paperwork and the state fire marshals random checks. The CARB sends out a notification stating that a late certification fee, 10% of the certification fee, will be charged if the tank truck is certified after May 31st. This gives tank truck owners enough incentive to certify their trucks early in the six month period.

The cost of the certification program, \$90,000- a year, is covered by the \$35.- certification fee that is charged to the 3,500 tank trucks certified every year in the state. The enforcement program is also self supporting. In 1978 enforcement leveled approximately 1,000 fines, Chevron alone paid \$30,000.- to the state for sticker and leak violations.

There is one exemption to this certification program. If the loading facility handles less than 5 million gallons per year of throughput, and less than 500,000 gallons per year goes to exempt accounts: 1) new tanks with less than 250 gallon capacity, 2) farm accounts, or 3) existing tanks with less than 2,000 gallon capacity, then the tank trucks servicing these accounts are exempt. The exemption comes from the local district where the tank truck is loaded and the tank truck owner must petition annually to maintain the exemption status. Also, if the tank truck comes from an exempt source and it loads at a top loading facility, the tank trucks do not have to be certified (only 6 trucks in CA - fall under this exemption).

The CARB started the groundwork for the tank truck certification program in 1975. They contacted tank truck manufacturers and tank truck associations, and informed them of the program. Information was also distributed through equipment manufacturers newsletters informing readers where to obtain the necessary equipment and specifics on the program. In 1977 a hearing board was setup for variance requests, Executive orders for variances were issued for a week to six months depending on how long the tank truck owner estimated it would take to comply with the program. From this past experience, CARB estimates that to set up a certification program in the east would take about a year and a half from the effective date of the Regulation until the tank trucks will be in compliance.

One of the problems that the east coast will have in setting up a certification program is equipment supplies. New domes with pv valves cost around \$200.- plus the insulation costs. Retrofitting the tank trucks with a vapor recovery system costs between \$300. and \$2,000. per compartment. CARB provided a list of equipment manufacturers, Emco Wheaton and CB both manufacture a good dome, but CB will not sell in the east. Tiona Betts, in Pennsylvania, is developing a dome and may become an east coast supplier. On the other hand, if TTMA and API adjust their tank truck manufacturing specifications to CARB's leak tight specifications the program could be accelerated, CARB is preparing a summary of their experience with this program and a copy of this technical support document will be available in late spring.

Bill Krimson, N.J. and Phil Florkowski, CT, expressed three areas of concern in setting up the certification program:

1) What if the state fire marshals office can not handle the program? CARB estimated if they ran the program, they would need three people to go around the state of CA. to enforce the program, and more clerical help to take care of the paperwork.

2) The question of rail car certification was brought up, but CA. does not move much fuel by rail car. CA rail cars are equipped with State I vapor recovery.

3) Climate problems are an east coast issue, but Emco Wheaton states that their product will hold up in the cold climate as well as the CA. climate.

Overall, Bill Krimson seemed enthusiastic about implementing the tank truck certification program in N.J., although he felt that it could not be done through the state fire marshals office. N.J. has already retrofitted their tank trucks with vapor recovery systems so their program costs will be less than CT, where the compartment vapor recovery systems would have to be installed. Phil Florkowski was more reserved about the success of the program in CT because 1) the vapor recovery system installation cost and 2) CT would have to start a program to determine the number of tank trucks in the state. However, Phil did feel that the CT. fire marshals office could administrate the tank truck certification program.