State of California
AIR RESOURCES BOARD

Executive Order G-70-180

Order Revoking Certification of
Healy Phase II Vapor Recovery Systems
for Gasoline Dispensing Facilities

WHEREAS, Health and Safety Code Section 41954 provides for certification by the California Air Resources Board (the "Board") of systems designed for the control of gasoline vapor emissions during gasoline marketing operations, including storage and transfer operations systems;

WHEREAS, the Board has established, pursuant to Sections 39600, 39601 and 41954 of the Health and Safety Code, certification procedures for systems designed for the control of gasoline vapor emissions during gasoline marketing operations involving a dispensing facility (service station) in its "Certification Procedure for Vapor Recovery Systems of Dispensing Facilities" (the "Certification Procedure") as last amended on April 12, 1996, incorporated by reference in Section 94011 of Title 17, California Code of Regulations;

WHEREAS, Section 1 of the Certification Procedure specifies that vapor recovery systems are complete systems and shall include all necessary piping, nozzles, couplers, processing units, underground tanks and any other equipment necessary for the control of gasoline vapors during fueling operations at service stations;

WHEREAS, Section 3.5 of the Certification Procedure requires that vapor recovery systems demonstrate compatibility, including the capability of fueling, without the use of nozzle spout extenders, any motor vehicle that may be fueled at service stations not equipped with vapor recovery systems;

WHEREAS, Health and Safety Code Section 41954(c) provides that certification of a gasoline vapor control system may be revoked when the system no longer meets the required specifications or standards for certification;

WHEREAS, Health and Safety Code Section 41956.1 provides that whenever the Board revokes a certification, any systems or any system components certified under procedures in effect prior to the revocation of the certification and installed prior to the effective date of the revocation may continue to be used in gasoline marketing operations for a period of four years after the effective date of the revocation of the certification; however, all necessary repair or replacement parts or components shall be certified;

WHEREAS, Health and Safety Code Section 41954(f) prohibits the sale or installation of any new or rebuilt gasoline vapor control system, or any component of the system, not certified by the Board;

WHEREAS, the Board has certified in Executive Order G-70-70-AC, which amended Executive Orders G-70-70, G-70-70-AA, and G-70-70-AB, the Healy Phase II Vapor Recovery System for Gasoline Dispensing Facilities that use Model 200, Model 200(X), and Model 400 nozzles designed and manufactured by Healy Systems, Inc.;

WHEREAS, the Board has received information, detailed in Attachment A, that shows the existence of compatibility problems with the functioning of the Healy Phase II Vapor Recovery System certified for use with the Healy Models 200, 200(X), and 400 nozzles, when fueling automobiles and automobile prototypes that are equipped with Onboard Refueling Vapor Recovery (ORVR);

WHEREAS, ORVR is mandated by federal law in section 202(a) the federal Clean Air Act Amendments of 1990, as implemented in section 86.098-2 et seq. of Part 86, Title 40, Code of Federal Regulations (January 24, 1994), and section 1978 of Title 13, California Code of Regulations (June 19, 1996);

WHEREAS, automobiles with ORVR may be certified for sale beginning January 1, 1997;

WHEREAS, continued sale of the Healy Phase II Vapor Recovery Systems that use Models 200, 200(X), and 400 nozzles will increase the number of service stations with systems that will experience incompatibility problems;

NOW THEREFORE, IT IS ORDERED AND RESOLVED that Executive Orders G-70-70, G-70-70AA, G-70-70AB, and G-70-70AC are revoked and that on and after the date of this order, there shall be no sales or new installations of any Healy Phase II Vapor Recovery System using the Model 200, Model 200(X), or Model 400 nozzles, and replacement or repair of any other nozzle with the Model 200, Model 200(X), or Model 400 nozzles are prohibited.

IT IS FURTHER ORDERED AND RESOLVED that while gasoline marketing operations (service stations) which have installed Healy Phase II Vapor Recovery Systems using Models 200, 200(X), and 400 nozzles prior to the effective date of this revocation order may continue to operate the systems for up to four years after the effective date of this revocation order, all necessary repair or replacement parts or components for the systems shall be certified.

Executed at Sacramento, California, this ____ day of April 1997.

CALIFORNIA AIR RESOURCES BOARD

Signed April 17, 1997

Michael P. Kenny
Executive Officer

Attachment

Attachment A
Statement of Facts

In September of 1996, Volvo and Chrysler Corporation independently informed the California Air Resources Board (ARB) that their prototype Onboard Refueling Vapor Recovery (ORVR) test vehicles experienced premature shut-off while attempting to refuel the vehicles at gasoline-dispensing facilities equipped with Healy Model 400 Phase II Vapor Recovery Systems.

This information was shared with Mr. James Healy, President of Healy Systems, Inc., who explained that the Model 400 nozzle, as well as the older Models 200 and 200X nozzles, would experience premature shut-off while attempting to refuel ORVR vehicles because of the high vacuum levels that would be generated in the fill-neck interfaces of the ORVR vehicles. The nozzles are equipped with a safety feature that automatically shuts the nozzle off if a vacuum level of 10-inches water column or greater is generated at the nozzle–fill-neck interface.

Field testing conducted on ORVR test vehicles in January and February 1997, confirmed that on some ORVR designs, whenever a tight seal is established in Models 200 and 400 nozzles at the nozzle–fill-neck interface, premature shut-off will occur.

Healy Systems, Inc. proposed two solutions for allowing the nozzles to refuel the vehicles. One solution involves punching a single 3/16-inch diameter hole in the nozzle boot. This would prevent a high vacuum from being established in the fill-neck area and would allow refueling to occur. Testing of this modification on the ORVR test-vehicle designs showed that refueling without incident was possible with this modification.

However, an abbreviated efficiency test conducted in February 1997, which compared the efficiencies of a Healy 200 System with and without the hole modification, showed an efficiency drop of close to 40 percent with the nozzle-hole modification. The efficiency loss was attributed to vent-pipe emissions due to the increased volume of air ingested into the system with the 3/16-inch hole. The system efficiency with this modification is less than the system efficiency required in the Executive Orders certifying the Healy Phase II Vapor Recovery Systems using Models 200, 200X, and 400 nozzles.

A second solution proposed by Healy Systems, Inc. involves replacing the internal diaphragm components with new components that recognize the high vacuum generated by an ORVR vehicle and adjust the nozzle accordingly, shutting down the vapor return path while still allowing the vehicle to refuel. On non-ORVR vehicles, the nozzle would perform as did the original designs. Healy Systems, Inc. has stated that they are seeking a station at which the evaluation and certification of this proposed solution can take place. In September 1996, Mr. Healy stated that he would expedite this process. As of April 2, 1997, a test station remains to be identified.

Presently, there is no solution that will allow the Healy Models 200, 200X, and 400 Phase II Vapor Recovery Systems to refuel ORVR designed vehicles when a seal is formed at the nozzle–fill-neck interface without incident or premature shut-off or without efficiency loss below the level required in the Executive Orders.