State of California
AIR RESOURCES BOARD

Executive Order G-70-36-AD

Modification of Certification
of the OPW Balance Phase II
Vapor Recovery System

WHEREAS, the Air Resources Board (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 motor vehicle fueling operations ("Phase II vapor recovery systems") in its "Certification Procedures for Gasoline Vapor Recovery Systems at Service Stations" as last amended December 4, 1981 (the "Certification Procedures"), incorporated by reference in Section 94001 of Title 17, California Code of Regulations;

WHEREAS, the Board has established, pursuant to Sections 39600, 39601 and 41954 of the Health and Safety Code, test procedures for determining the compliance of Phase II vapor recovery systems with emission standards in its "Test Procedures for Determining the Efficiency of Gasoline Vapor Recovery Systems at Service Stations" as last amended September 1, 1982 (the "Test Procedures"), incorporated by reference in Section 94000 of Title 17, California Code of Regulations;

WHEREAS, Dover Corporation, OPW Division (hereinafter referred to as "OPW"), has requested certification of the following OPW Model 211-V vapor recovery nozzles for use with Phase II vapor recovery systems;

211-V-22 leaded nozzle with Hold-Open Latch (HOL)
211-V-24 leaded nozzle without HOL
211-V-47 unleaded nozzle with HOL, and
211-V-49 unleaded nozzle without HOL;

WHEREAS, I find that the OPW Model 211-V vapor recovery nozzles, when used with balance Phase II vapor recovery systems at new and existing installations, conform with all the requirements set forth in Sections I through VII of the Certification Procedures, and result in vapor recovery systems that are at least 95 percent effective for attendant and/or self-serve use at gasoline service stations when used in conjuction with Phase I vapor recovery systems which have been certified by the Board;

WHEREAS, I find that coaxial vapor recovery hoses, when used with balance Phase II vapor recovery systems, result in an improvement to the performance of the systems;

WHEREAS, the OPW balance system was certified by Executive Order, the most recent modification thereof contained in G-70-36-AC, and the OPW 111-V nozzle was certified in Executive Order G-70-127;

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WHEREAS, the modifications contained in this Order have been reviewed by and are acceptable to OPW;

WHEREAS, Section VIII-A of the Certification Procedures provides that the Executive Officer shall issue an order of certification if he or she determines that the vapor recovery system conforms to all of the requirements set forth in Sections I through VII of the Certification Procedures.

NOW THEREFORE, IT IS HEREBY ORDERED that the certification, Executive Order G-70-36-AC, issued December 24, 1986, is hereby modified to add the OPW Model 211-V coaxial vapor recovery nozzle for use with Balance Phase II vapor recovery systems. The OPW vapor recovery nozzles certified hereby are listed in Attachment A of this Order. This revision supercedes earlier revisions of Executive Order G-70-36.

IT IS FURTHER ORDERED that Executive Order G-70-127 is hereby superceded and the certification contained therein is incorporated into this Order.

IT IS FURTHER ORDERED that the Phase II Balance vapor recovery sytem with the nozzles certified herein for use with the balance system is certified to be at least 95 percent effective in the self-serve and/or attendant use at gasoline service stations when used with a Board-certified Phase I vapor recovery system. Typical piping arrangements for this system may be found in Exhibits 1 and 2. A list of the certified Phase II Balance systems can be found in Exhibit 1 of the latest revision of Executive Order G-70-52. The Phase II system components and configurations shall be installed as specified in the latest revision of Executive Order G-70-52.

IT IS FURTHER ORDERED where balance type vapor recovery nozzles are to be installed at a new installation only the coaxial balance type vapor recovery nozzles and coaxial hose configurations may be used. For existing balance dual-hose systems, the coaxial nozzles may be used with a certified adaptor.

IT IS FURTHER ORDERED that the maximum dispensing rate for balance systems shall be ten gallons per minute unless otherwise specified in the latest revision of Executive Order G-70-52.

IT IS FURTHER ORDERED that OPW vapor recovery nozzles certified hereby must be capable 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.

IT IS FURTHER ORDERED that nozzle bellows covers, sometimes referred to as "boot protectors," may not be used on any nozzle referenced in this Order;

IT IS FURTHER ORDERED that compliance with the certification requirements and rules and regulations of the Division of Measurement Standards of the Department of Food and Agriculture, the State Fire Marshal's Office, and the Division of Occupational Safety and Health of the Department of Industrial Relations is made a condition of this certification.

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IT IS FURTHER ORDERED that the nozzles certified hereby shall perform in actual use with the same effectiveness as the certification test nozzles. Compliance with this performance criterion shall be a condition of this certification, and failure to meet this criterion shall constitute grounds for revocation, suspension or modification of this certification.

IT IS FURTHER ORDERED that any alteration of the equipment, parts, design, or operation of the nozzles certified hereby, is prohibited, and deemed inconsistent with this certification, unless such alteration has been approved by the Executive Officer or his/her designee.

IT IS FURTHER ORDERED that the certified Phase II vapor recovery nozzles shall, at a minimum, be operated in accordance with the manufacturer's recommended maintenance intervals and shall use the manufacturer's recommended operation, installation, and maintenance procedures.

IT IS FURTHER ORDERED that certified OPW vapor recovery nozzles shall be 100 percent performance checked at the factory including checks of proper functioning of all automatic shut-off mechanisms.

Executed at Sacramento, California this 18th day of September, 1992.

James D. Boyd
Executive Officer

Attachments

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Attachment A

Certified OPW Vapor Recovery Nozzles

Balance-type Nozzles (may also be used with Red Jacket* or Hirt system)

211-V Balance coaxial short-spout nozzle (shortened version of 111-V nozzle)
- -22 leaded nozzle with Hold-Open Latch (HOL)
- -24 leaded nozzle without HOL
- -47 unleaded nozzle with HOL
- -49 unleaded nozzle without HOL

111-V Balance coaxial nozzle
- -22 leaded nozzle with HOL
- -24 leaded nozzle without HOL
- -47 unleaded nozzle with HOL
- -49 unleaded nozzle without HOL

11V Model F Balance coaxial nozzle
- -22 leaded nozzle with HOL
- -24 leaded nozzle without HOL
- -47 unleaded nozzle with HOL
- -49 unleaded nozzle without HOL

11VS Model F Balance dual-port nozzle
- -22 leaded nozzle with HOL
- -24 leaded nozzle without HOL
- -47 unleaded nozzle with HOL
- -49 unleaded nozzle without HOL

11V Model C Balance coaxial nozzle *
- -22 leaded nozzle with HOL
- -24 leaded nozzle without HOL
- -47 unleaded nozzle with HOL
- -49 unleaded nozzle without HOL

11VS Model C Balance dual-port nozzle *
- -22 leaded nozzle with HOL
- -24 leaded nozzle without HOL
- -47 unleaded nozzle with HOL
- -49 unleaded nozzle without HOL

* No longer offered for sale by manufacturer (existing equipment certified).

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Attachment A (continued)

The previously listed balance-type nozzles, when equipped with an assist-type spout and bellows assembly, have been approved for use with other systems and are designated with the following model numbers:

11V Model E assist coaxial nozzle
- -34 leaded nozzle with HOL
- -36 leaded nozzle without HOL
- -47 unleaded nozzle with HOL
- -49 unleaded nozzle without HOL

11VS Model E assist dual-port nozzle
- -34 leaded nozzle with HOL
- -36 leaded nozzle without HOL
- -47 unleaded nozzle with HOL
- -49 unleaded nozzle without HOL

7V Model E assist dual-port nozzle *
- -34 leaded nozzle with HOL
- -36 leaded nozzle without HOL
- -47 unleaded nozzle with HOL
- -49 unleaded nozzle without HOL
- -60 leaded nozzle with HOL
- -61 unleaded nozzle with HOL
- -62 leaded nozzle without HOL
- -63 unleaded nozzle without HOL

7V Model H assist dual-port nozzle *

- -34 leaded nozzle with HOL
- -36 leaded nozzle without HOL
- -47 unleaded nozzle with HOL
- -49 unleaded nozzle without HOL
- -60 leaded nozzle with HOL
- -61 unleaded nozzle with HOL
- -62 leaded nozzle without HOL
- -63 unleaded nozzle without HOL

HP-1 dual port nozzle for Hasstech system
(available for leaded or unleaded, with or without HOL)

HP-11 coaxial nozzle for Hasstech system
(available for leaded or unleaded, with or without HOL)

* No longer offered for sale by manufacturer (existing equipment certified).

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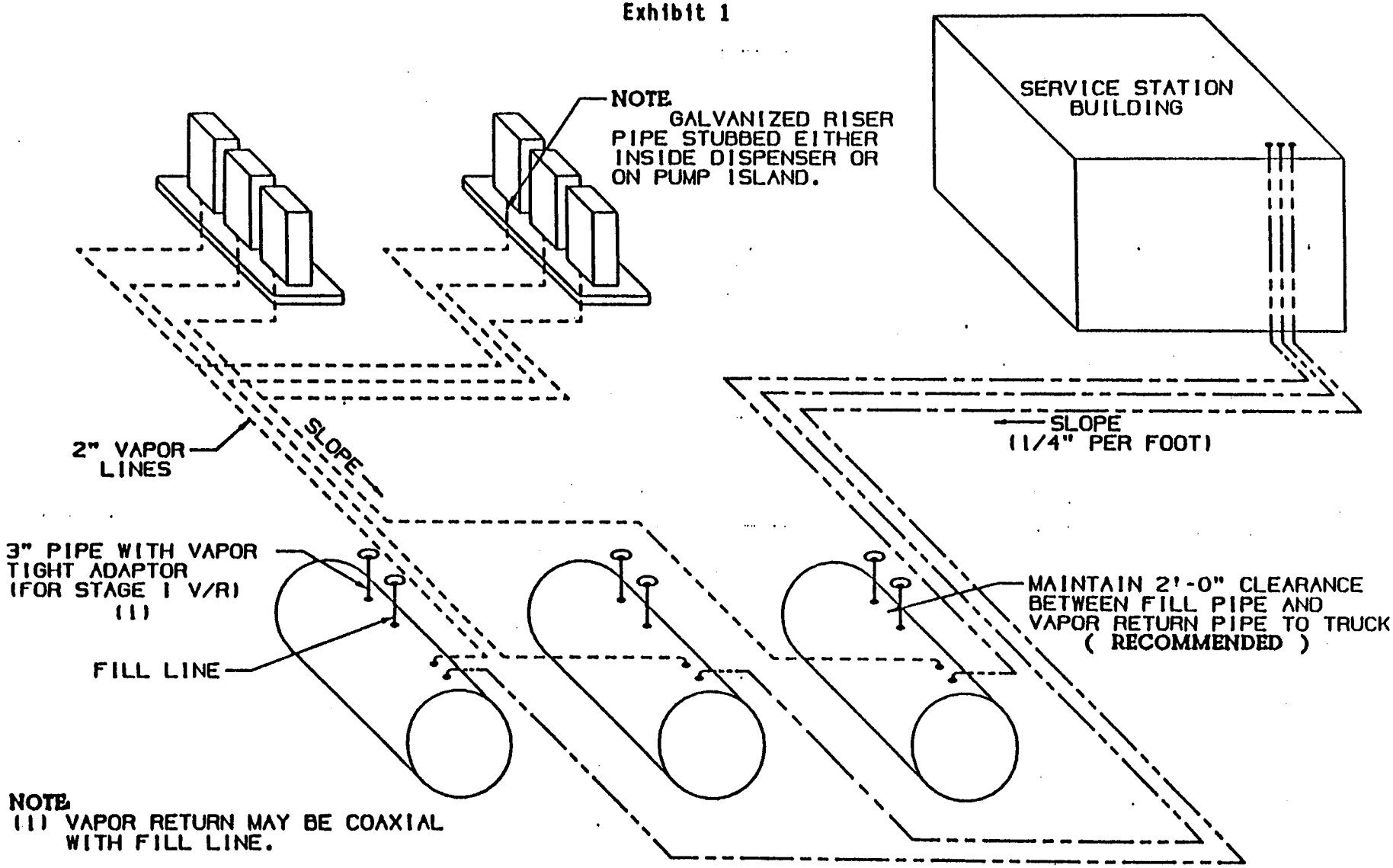
OPW Balance Phase II
Vapor Recovery System

Exhibit 1



NOTE
(1) VAPOR RETURN MAY BE COAXIAL WITH FILL LINE.

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OPW Balance Pha II
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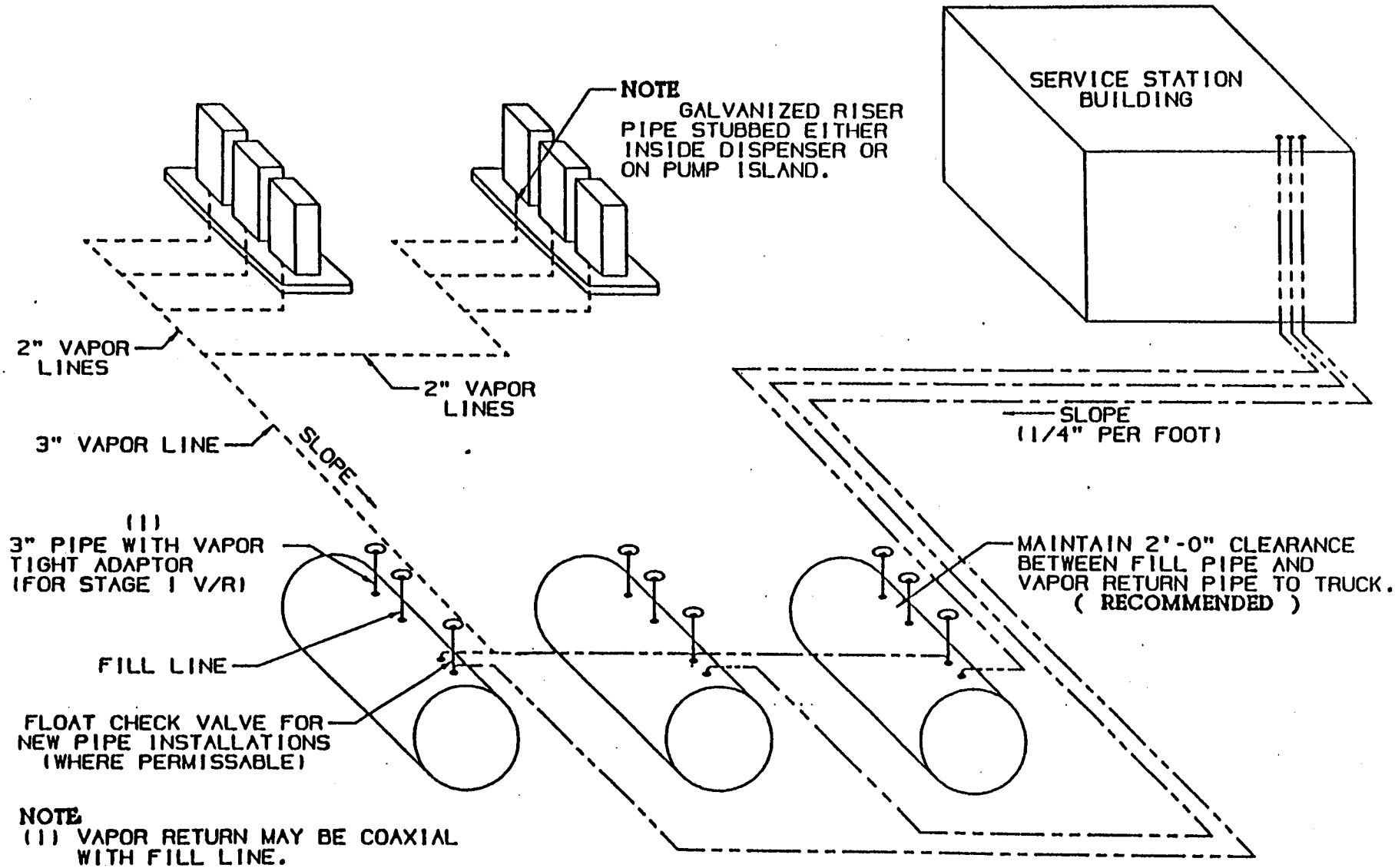
Exhibit 2



NOTE
(1) VAPOR RETURN MAY BE COAXIAL WITH FILL LINE.

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Notes to Accompany Exhibits 1 and 2

1. For non-retail outlets which fuel special vehicles, the installation of vapor recovery hoses longer than specified in the latest version of Executive Order G-70-52 are allowed if the following conditions are met:

   a. The non-retail outlet fuels special vehicles such as large trucks, large skip loaders, off-the-road equipment, etc., where reaching the fill pipe requires longer hoses.

   b. The vapor return hoses are arranged to be self-draining or provisions are made to drain the hoses after each refueling or the system incorporates an approved liquid blockage detection arranged to cease dispensing when a blockage occurs.

   c. The Executive Officer of the Air Resources Board or his/her designee has approved the plans for compliance with condition b.

2. The maximum allowable pressure drop through a system including nozzle, vapor hose, swivels, and underground piping is:

   a. 0.15 inch water at a flow of 20 CFH;
   b. 0.45 inch water at a flow of 60 CFH;
   c. 0.95 inch water at a flow of 100 CFH;

   The poppeted vapor connection to the underground storage tank must be open during the pressure drop test.

3. The vent pipes and vent manifold shall be adequately supported throughout their length and, when they are supporting weights in addition to their own, additional supports may be required such as anchoring to a building or other structure.

4. All vapor return and vent piping shall be equipped with swing joints at the base of the riser to each dispensing unit, at each tank connection and at the base of the vent riser where it fastens to a building or other structure. When a swing joint is used in a riser containing a shear section, the riser must be rigidly supported.

5. Float check valves (or alternative equipment, design, or operating procedures acceptable to the Air Resources Board) are required for all underground manifolded piping systems installed on or after November 13, 1980, to prevent contamination of unleaded gasoline with leaded gasoline, via vapor recovery piping, during underground storage tank loading or overfill.