STANDARDS PRESENTATION
TO
CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD

PROPOSED STATE STANDARD,
TITLE 8, CHAPTER 4

Amend Section 450 to read:

§ 450. Application of the Unfired Pressure Vessel Safety Orders.
(a) These Orders apply to places of employment in California, and establish minimum standards for:
(1) The design, construction, and installation of LP-Gas containers, including the storage and handling of LP-Gas. National Fire Protection Association (NFPA) 58, ~~Standard for the Storage and Handling of Liquefied Petroleum Gases~~ LP-Gas Code, ~~1992~~ 1998 Edition, is hereby incorporated by reference. Supplementing NFPA 58 are these Safety Orders, beginning with Sections 470 through 494, which are determined necessary for the protection of the safety and health of employees.

* * * * *

(6) The design, construction, repair and alteration of LNG, LPG and NH_3 storage tanks for operation at 15 psig or less.
(b) After the date on which these Orders become effective, all installations and equipment shall conform to these Orders, except as noted in Section 451.
EXCEPTION: Existing installations and equipment which were and remain in compliance with the Safety Orders, or variances therefrom, in effect at the time of manufacture or installation.
(c) When any provision of these Safety Orders conflicts with NFPA 58 and is more stringent than the corresponding ~~s~~Section of NFPA 58, the Safety Order shall take precedence.
~~EXCEPTION: Existing installations and equipment which were and remain in compliance with Safety Orders, or variances therefrom, in effect prior to the effective date of these Safety Orders.~~
Note: Authority cited: Section 142.3, Labor Code; and Section 13241, Health and Safety Code.
Reference: Section 142.3, Labor Code.

PROPOSED STATE STANDARD,
TITLE 8, CHAPTER 4

Amend Section 453 to read:

§ 453. Definitions.
The following definitions shall apply in the application and interpretation of these Orders. For definitions directly relevant to LP-Gas, see ~~1992~~ 1998 Edition of NFPA 58, Section~~s 1-7~~ 1-6.

* * * * *

Note: Authority cited: Section 142.3, Labor Code. Reference: Sections 142.3 and 7622, Labor Code; and Section 13241, Health and Safety Code.

PROPOSED STATE STANDARD,
TITLE 8, CHAPTER 4

Amend Section 471 to read:

§ 471. Control of Products in Tanks and Cylinders.

(a) ~~The order requiring that all LP-Gases shall be odorized by the addition of a warning agent may be waived by the Division upon written application when the LP-Gas is to be used exclusively in a process where the presence of an odorant would make the LP-Gas unfit for use in the process and for deliveries between refineries or between producing wells and refineries.~~ No LP-Gas shall be transported or delivered into any vessel covered by these Orders until first odorized using a warning agent of such character that the gases are detectable, by a distinct odor, down to a concentration in air of not over one-fifth the lower limit of flammability.

~~(b) Any tank used to transport or store unodorized LP-Gas shall have a warning sign reading "NOT ODORIZED" on both sides (and rear of transportation tanks), in letters at least 4 inches high.~~

EXCEPTION: When the LP-Gas is to be used exclusively in a process where the presence of an odorant would make the LP-Gas unfit for use in the process and for deliveries between refineries or between producing wells and refineries, a waiver may be obtained from the Division upon written request.

Note: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code; and Section 13241, Health and Safety Code.

PROPOSED STATE STANDARD,
TITLE 8, CHAPTER 4

Amend Section 475 to read:

§ 475. Location of Storage Containers and Regulating Equipment.

* * * * *

(c) Installation of stationary LP-Gas containers on the rooftop shall be prohibited.

Note: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code; and Section 13241, Health and Safety Code.

PROPOSED STATE STANDARD,
TITLE 8, CHAPTER 4

Amend Section 477 to read:

§ 477. Installation of Containers.

(a) Aboveground Containers.

(1) Metallic structural supports, when used, shall be encased in concrete or other material having a fire-resistant rating of at least ~~1~~ 2 hours when the distance between the lower surface of the tank and the top of the concrete or masonry foundation exceeds 18 inches.

(2) Aboveground storage containers shall be protected from impact from vehicles by means of crashposts, curbs, fences, railings or similar barriers. Where crashposts are used, they shall be no less than 5 feet long with 2 feet below ground and encased in concrete. Posts shall be no less than 4 inches in diameter and be filled with concrete if the wall thickness is less than that of standard pipe. Posts shall be 4 feet apart on centers (maximum) and at least 3 feet from the storage container. Other materials may be used and shall provide equivalent protection. Such curbs or fences shall be arranged so they will not hamper free ventilation around the containers.

~~The effective date shall be 12 months after date of filing for new crashpost installations.~~

~~(3) When multi-container installations are manifolder together, the 86 1/2% levels shall be in substantially the same horizontal plane.~~

* * * * *

(b) Mounded Containers.

* * * * *

(1) Construction.

* * * * *

(C) Relief-valve capacity and installation shall be that which is required for aboveground containers and shall comply with NFPA 58, Section ~~3-2.5.3(b)~~ 3-2.6.3, as measured from the tank shell.

* * * * *

Note: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code; and Section 13241, Health and Safety Code.

PROPOSED STATE STANDARD,
TITLE 8, CHAPTER 4

Section 486 is repealed:

§ 486. Regulators.

~~(a) Single-stage regulators shall have a maximum outlet pressure setting of 1 psi and shall be equipped with one of the following:~~

~~(1) An integral pressure-relief device on the outlet-pressure side, having a start-to-discharge pressure setting within the limits specified in the Standard for LP-Gas Regulators, UL 144.~~

~~(2) An integral over-pressure shutoff device that shuts off the flow of LP-Gas vapor when the outlet-pressure of the regulator reaches the over-pressure limits specified in UL 144. Such a device shall not open to permit flow of gas until it is manually reset.~~

~~(b) Second-stage regulators and integral two-stage regulators shall have a maximum outlet-pressure setting of 14 inches, water column, and shall be equipped with one of the following:~~

~~(1) An integral pressure-relief valve on the outlet-pressure side having a start-to-discharge pressure rating within the limits specified in the Standard for LP-Gas Regulators, UL 144. This relief device shall limit the outlet pressure of the second-stage regulator to 2.0 psi when the regulator seat disk is removed and the inlet pressure to the regulator is 100 psi or less as specified in the Standard for LP-Gas Regulators, UL 144.~~

~~(2) An integral over-pressure shutoff device that shuts off the flow of LP-Gas vapor when the outlet pressure of the regulator reaches the over-pressure limits specified in UL 144. Such a device shall not open to permit flow of gas until it has been manually reset.~~

~~Exception: Regulators with a rated capacity of more than 500,000 Btu/hr shall be permitted to have a separate over-pressure protection device complying with Paragraphs 2.9.2 through 2.9.8 of the National Fuel Gas Code, NFPA 54 (ANSI Z223.1). The over-pressure protection device shall limit the outlet pressure of the regulator to 2.1 psi when the regulator seat disk is removed and the inlet pressure of the regulator is 10 psi or less.~~

~~(c) Integral two-stage regulators, except automatic changeover regulators, shall be provided with means to determine the outlet pressure of the high-pressure regulator portion of the integral two-stage regulator.~~

~~(d) Integral two-stage regulators shall incorporate an integral pressure-relief valve in the high-pressure regulator portion of the unit.~~

~~(e) First-stage regulators shall incorporate an integral pressure-relief valve having a start-to-discharge setting within the limits specified in the Standard for LP-Gas Regulators, UL 144.~~

~~Exception: First-stage regulators with a rated capacity of more than 500,000 Btu/hr shall be permitted to have a separate pressure-relief device.~~

~~(f) High-pressure regulators with a rated capacity of more than 500,000Btu/hr, where permitted to be used in two-stage systems, shall incorporate an integral relief valve or shall have a separate relief valve.~~

~~(g) First-stage regulators shall have an outlet-pressure setting up to 10 psi in accordance with the Standard for LP-Gas Regulators, UL 144.~~

~~(h) Regulators shall be designed so as to drain all condensate from the regulator spring case when the vent is directed vertically down.~~

Note: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code; and Section 13241, Health and Safety Code.

PROPOSED STATE STANDARD,
TITLE 8, CHAPTER 4

Section 487 is repealed:

§ 487. Regulator Installation.

~~(a) A two-stage regulator system or an integral two-stage regulator shall be required on all fixed piping systems that serve 1/2 psi appliance systems (normally operated at 11 inches water column pressure). The regulators utilized in these systems shall meet the requirements of Section 486. This requirement includes fixed piping systems for appliances on RVs (recreational vehicles), mobile home installations, manufactured home installations, catering vehicles, and food service vehicle installations. Single-stage regulators shall not be installed in fixed-piping systems after June 30, 1997.~~

~~Exception No. 1: This requirement does not include shall portable appliances and outdoor cooking appliances with input ratings of 100,000 Btu/hr or less.~~

~~Exception No. 2: Gas distribution systems utilizing multiple second-stage regulators are permitted to use a high-pressure regulator installed at the container, provided a first-stage regulator is installed downstream of the high-pressure regulator and ahead of the second-stage regulators.~~

~~Exception No. 3: High-pressure regulators with an over-pressure protection device and a rated capacity of more than 500,000 Btu/hr shall be permitted to be used in two-stage systems where the second-stage regulator incorporates an integral or separate over-pressure protection device. This over-protection device shall limit the outlet pressure of the second-stage regulator to 2 psi when the regulator seat disk is removed and with an inlet pressure equivalent to the maximum outlet pressure setting of the high-pressure regulator.~~

~~Exception No. 4: Systems consisting of listed components that provide an equivalent level of over-pressure protection.~~

~~(b) First-stage or high-pressure regulators shall be directly installed or attached by flexible connectors to the vapor-service valve of a container or to a vaporizer outlet. The regulators shall also be permitted to be installed with flexibility in the inner connecting piping of manifolded containers or vaporizers.~~

~~Exception: First-stage regulators shall be downstream of high-pressure regulators.~~

~~(c) First-stage and high-pressure regulators shall be installed outside of buildings.~~

~~Exception No. 1: Regulators on portable containers installed indoors in accordance with NFPA 58, Section 3-4.~~

~~Exception No. 2: Regulators on containers of less than 125 gallons for the purpose of being filled or in structures complying with NFPA 58, Chapter 7.~~

~~Exception No. 3: Regulators on containers on LP-Gas vehicles complying with and parked or garaged in accordance with NFPA 58, Chapter 8.~~

~~Exception No. 4: Regulators on containers used with LP-Gas stationary or portable engine fuel systems complying with NFPA 58, Chapter 8.~~

~~Exception No. 5: Regulators on containers used with LP-Gas fueled industrial trucks complying with NFPA 58, Section 8-3.~~

~~Exception No. 6: Regulators on containers on LP-Gas fueled vehicles garaged in accordance with NFPA 58, Section 8-6.~~

~~Exception No. 7: Regulators on portable containers awaiting use, resale, or exchange when stored in accordance with NFPA 58, Chapter 5.~~

PROPOSED STATE STANDARD,
TITLE 8, CHAPTER 4

Section 487 repeal continued:

~~(d) All regulators for outdoor installations shall be designed, installed, or protected so their operation will not be affected by the elements (freezing rain, sleet, snow, ice, mud, or debris). This protection shall be permitted to be integral with the regulator.~~
~~Exception: Regulators used for portable industrial applications.~~
~~(e) The point of discharge from the required pressure-relief device on regulating equipment installed outside of buildings in fixed piping systems shall be located not less than three feet horizontally away from any building opening below the level of such discharge, and not beneath any buildings unless the space is well ventilated to the outside and is not enclosed for more than 50% of its perimeter. The point of discharge shall also be located not less than five feet in any direction away from any source of ignition, openings into direct vent (sealed combustion system) appliances, or mechanical ventilation air intakes.~~
~~Exception: This requirement shall not apply to vaporizers.~~
~~(f) The discharge from the required pressure-relief device on regulating equipment installed inside of buildings in fixed systems shall be vented with properly sized and supported piping to the outside air with the discharge outlet located not less than three feet horizontally away from any building opening below the level of such discharge. The discharge outlet shall also be located not less than five feet in any direction away from any source of ignition, opening into direct vent (sealed combustion system) appliances, or mechanical ventilation air intakes.~~
~~Exception No. 1: This provision shall not apply to appliance regulators otherwise protected, or to regulators used in connection with containers in buildings as provided for in NFPA 58, Section 3-2.2.1, Exceptions Nos. 1, 2 ,4 ,5, and 6.~~
~~Exception No. 2: This requirement shall not apply to vaporizers.~~
~~(g) Single-stage regulators shall be permitted to be used only on small portable appliances and outdoor cooking appliances with input ratings of 100,000 Btu/hr maximum.~~
Note: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code; and Section 13241, Health and Safety Code.

PROPOSED STATE STANDARD,
TITLE 8, CHAPTER 4

Amend Section 494 to read:

§ 494. Repairs and Alterations.

* * * * *

(b) No repair or alteration affecting the safety of any container or cylinder shall be made until the contemplated repair or alteration has been authorized by a qualified inspector. The owner or user of the LP-Gas container shall ensure that the repair or alteration is performed by a company with a valid ASME "U" or a National Board "R" Certificate of Authorization. ~~Nothing in this order shall prohibit t~~The exchange or interchange of valves, fittings, and accessories intended for the same purpose shall not be considered a repair or alteration.

(c) No container or cylinder that has been subjected to a fire shall be returned to service until it has been inspected by a qualified inspector and found to be safe.

Any container or cylinder which has suffered mechanical damage causing dents or other deformation exceeding a depth of 1 1/2 times the thickness of the deformed head or shell or two percent of the container diameter, whichever is greater, shall be re-formed to its original shape or otherwise repaired as provided in these Orders.

* * * * *

(e) The owner or user of the LP-Gas container shall ensure that ~~A~~all repairs or alterations affecting the safety of LP-Gas tanks ~~shall be~~ are reported to the Division within 21 days by ~~a qualified inspector authorizing~~ the ASME “U” or National Board “R” certificate holder making such repairs or alterations using the appropriate National Board Form, "R-1", Report of Welded Repair, or "R-2", Report of Alteration, or equivalent (See Appendix D). The owner or user shall ensure that the qualified inspector ~~shall~~ stamps his/her certificate of competency number adjacent to all welded repairs authorized by him/her, except that in the case of repairs to quenched and tempered steels, this number need not be stamped. This exception shall be noted in the inspector's report.

(f) Any welding necessary when making repairs or alterations to containers shall be done by a welder qualified in accordance with Section IX of the ASME Code in the position or positions used in making the repair.

(g) Repairs to DOT cylinders and cargo containers shall be made under DOT regulations and control in accordance with the requirements of 49 CFR Section 173.34.

Note: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code; and Section 13241, Health and Safety Code.

STANDARDS PRESENTATION
TO
CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD

Amend Title 8, Chapter 4, Subchapter 1, of the Unfired Pressure Vessels Safety Orders to include the following Appendix:

Appendix D

Note to publishing editor: This Appendix is proposed new text but is not in standard underline format for clarity purposes.

FORM R-1 REPORT OF WELDED REPAIR

in accordance with provisions of the National Board Inspection Code

1. Work performed by _____ (name of repair organization) _____ (Form R No.)

_____ (address) _____ (P.O. No. Job No. etc.)

2. Owner _____ (name)

_____ (address)

3. Location of installation _____ (name)

_____ (address)

4. Unit identification _____ (boiler, pressure vessel) Name of original manufacturer _____

5. Identifying nos.: _____ (mfg serial no.) _____ (National Board No.) _____ (jurisdiction no.) _____ (other) _____ (year built)

6. NBIC Edition / Addenda: _____ (edition) _____ (addenda)

Original Code of Construction for Item: _____ (name/section/division) _____ (edition/addenda)

Construction Code Used for Repair Performed: _____ (name/section/division) _____ (edition/addenda)

7. Description of work: _____ (use supplemental sheet, Form R-4, if necessary)

_____

_____

_____ Pressure Test, if applied _____ psi. MAWP _____ psi.

8. Replacement Parts. Attached are Manufacturer's Partial Data Reports or Form R-3s properly completed for the following items of this report:

_____

_____

_____

(name of part, item number, data report type, mfr's. name and identifying stamp)

9. Remarks: _____

_____

_____

CERTIFICATE OF COMPLIANCE

I, _____, certify that to the best of my knowledge and belief the statements in this report are correct and that all material, construction, and workmanship on this Repair conforms to the National Board Inspection Code.

National Board "R" Certificate of Authorization No _____ expires on _____, _____

Date _____, _____ _____ (name of repair organization) Signed _____ (authorized representative)

CERTIFICATE OF INSPECTION

I, _____, holding a valid Commission issued by The National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction _____ and employed by _____ of _____ have inspected the work described in this report on _____, _____ and state that to the best of my knowledge and belie this work complies with the applicable requirements of the National Board Inspection Code.

By signing this certificate, neither the undersigned nor my employer makes any warranty expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.

Date _____, _____ Signed _____ (inspector) Commissions _____ (National Board (incl. endorsements), and jurisdiction, and no.)

Amend Title 8, Chapter 4, Subchapter 1, of the Unfired Pressure Vessels Safety Orders to include the following Appendix:

Appendix D (continued)

Note to publishing editor: This Appendix is proposed new text but is not in standard underline format for clarity purposes.

FORM R-2 REPORT OF ALTERATION

in accordance with provisions of the National Board Inspection Code

1. Work performed by _____ (name of alteration organization) _____ (Form R No.)

   _____ (address) _____ (P.O. No. Job No. etc.)

2. Owner _____ (name)

   _____ (address)

3. Location of installation _____ (name)

   _____ (address)

4. Unit identification _____ (boiler, pressure vessel) Name of original manufacturer _____

5. Identifying nos.: _____ (mfg serial no.) _____ (National Board No.) _____ (jurisdiction no.) _____ (other) _____ (year built)

6. NBIC Edition / Addenda: _____ (edition) _____ (addenda)

   Original Code of Construction for Item: _____ (name/section/division) _____ (edition/addenda)

   Construction Code Used for Alteration Performed: _____ (name/section/division) _____ (edition/addenda)

7. Description of work: _____ (use supplemental sheet, Form R-4, if necessary)

   _____

   _____ Pressure Test, if applied _____ psi. MAWP _____ psi.

8. Replacement Parts. Attached are Manufacturer's Partial Data Reports or Form R-3s properly completed for the following items of this report:

   _____

   (name of part, item number, data report type, mfr's. name and identifying stamp)

9. Remarks: _____

Amend Title 8, Chapter 4, Subchapter 1, of the Unfired Pressure Vessels Safety Orders to include the following Appendix:
Appendix D (continued)

Note to publishing editor: This Appendix is proposed new text but is not in standard underline format for clarity purposes.

Form R-2 (back)

_____
(Form R No.)

DESIGN CERTIFICATION

I, _____ , certify that to the best of my knowledge and belief the statements in this report are correct and that the Design Change described in this report conforms to the National Board Inspection Code.
National Board "R" Certificate of Authorization No. _____ expires on_____ , _____

Date _____ , _____ _____ Signed_____
(name of design organization) (authorized representative)

CERTIFICATE OF DESIGN CHANGE REVIEW

I, _____ , holding a valid Commission issued by The National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction o _____ and employed by _____ of _____ have reviewed the design change as described in this report and state that to the best of my knowledge and belief such change complies with the applicable requirements of the National Board Inspection Code.
By signing this certificate, neither the undersigned nor my employer makes any warranty expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.

Date_____, _____ Signed_____ Commissions _____
(inspector) (National Board (incl. endorsements), and jurisdiction, and no.)

CONSTRUCTION CERTIFICATION

I, _____ , certify that to the best of my knowledge and belief the statements in this report are correct and that all material, construction, and workmanship on this Alteration conforms to the National Board Inspection Code.
National Board "R" Certificate of Authorization No. _____ expires on_____ , _____

Date _____ , _____ _____ Signed_____
(name of alteration organization) (authorized representative)

CERTIFICATE OF INSPECTION

I, _____ , holding a valid Commission issued by The National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction o _____ and employed by _____ of _____ have inspected the work described in this report on _____ ,_____ and state that to the best of my knowledge and belief this work complies with the applicable requirements of the National Board Inspection Code.
By signing this certificate, neither the undersigned nor my employer makes any warranty expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.

Date_____, _____ Signed_____ Commissions _____
(inspector) (National Board (incl. endorsements), and jurisdiction, and no.)

Note: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.