

FORM FOR PROPOSALS ON NFPA TECHNICAL COMMITTEE DOCUMENTS

Mail to: Secretary, Standards Council
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if you need further information on the standards-making process, please contact the

Standards Administration Department at 617-984-7249.
For technical assistance, please call NFPA at 617-770-3000

Note: All proposals must be received by 5:00 p.m. EST/EDST on the published proposal-closing date.
 Please indicate in which format you wish to receive your ROP/ROC: electronic or paper

Date 6/30/99 Name James C. Belke Tel. No. (202) 260-7314

Company United States Environmental Protection Agency

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Please Indicate Organization Represented (if any) United States Environmental Protection Agency

1. a) NFPA Document Title Liquefied Petroleum Gas Code NFPA No. & Year NFPA-58, 1998 Edition

b) Section/Paragraph Chapter 3 (various sections) and section 1-5

2. Proposal Recommends: (Check one) new text
 revised text
 deleted text

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Log # _____	_____
Date Rec'd _____	_____

3. Proposal (include proposed new or revised wording, or identification of wording to be deleted): (Note: Proposed text should be in legislative format: i.e., use underscore to denote wording to be inserted (inserted wording) and strike-through to denote wording to be deleted (~~deleted wording~~).

See attached pages for proposed new text.

4. Statement of Problem and Substantiation for Proposal: (Note: State the problem that will be resolved by your recommendation; give the specific reason for your proposal including copies of tests, research papers, fire experience, etc. If more than 200 words, it may be abstracted for publication.)

Serious accidents have occurred at LP-gas installations that were required to comply with recent versions of NFPA-58. Examples include the December, 1998 propane fire at Cenex Propane in Des Moines, Iowa, the September, 1996 incident at PNG/Green's Fuel in Sanford, North Carolina, and the April, 1998 BLEVE of an 18,000-gallon propane tank in Albert City, Iowa. According to a recent report by the Chemical Safety and Hazard Investigation Board, the Albert City installation was not maintained in accordance with the code (executive summary attached; full report available at www.csb.gov). These and similar accidents may have been prevented by more rigorous safety practices, particularly in the areas of operations and maintenance. This proposal would incorporate requirements generally regarded as fundamentals of safe operation in hazardous industrial environments. For example, these practices have been adopted in API *Recommended Practices*, and have been endorsed by the Center for Chemical Process Safety of the American Institute of Chemical Engineers. They have also been codified in OSHA's Process Safety Management and EPA's Risk Management Program regulations. Furthermore, DOT has recently enacted similar requirements to those proposed here for written operating procedures to be carried on all cargo tank motor vehicles in liquefied compressed gas service by January 1, 2000. The proposed additions also integrate into a single location, either directly or by reference, operations, maintenance, and testing requirements which are stated in other sections of the existing code. The proposed additions apply only to LP-Gas installations at bulk plants, industrial operations, and industrial plants.

5. This Proposal is original material. (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought, or research and, to the best of his/her knowledge, is not copied from another source.)

This proposal is not original material; its source (if known) is as follows: Sources include API Recommended Practices, CCPS Plant Guidelines for Technical Management of Chemical Process Safety, 40 CFR Part 68 (the EPA Risk Management Program), and 29 CFR Part 1910.119 (the OSHA Process Safety Management Standard).

Note 1: Type or print legibly in black ink.

Note 2: If supplementary material (photographs, diagrams, reports, etc.) is included, you may be required to submit sufficient copies for all members and alternates of the technical committee.

I hereby grant the NFPA all and full rights in copyright, in this proposal, and I understand that I acquire no rights in any publication of NFPA in which this proposal in this or another similar or analogous form is used.

Signature (Required)

PLEASE USE SEPARATE FORM FOR EACH PROPOSAL

3. Proposal - Continued from page 1:

Section 1-5 **Qualification of Personnel.** Persons who transfer liquid LP-Gas, who are employed to transport LP-Gas, or whose primary duties fall within the scope of this code shall be trained in proper handling procedures. Personnel in bulk plants, industrial occupancies and industrial plants (see section 1-6 definitions) whose duties include transfer of LP-Gas shall be trained in proper handling procedures that meet the requirements of section 3-3.3. Refresher training shall be provided at least every three years, and more often if deemed necessary by the owner or operator, in consultation with the employees operating the system. The training shall be documented.

Chapter 3 Title: **Chapter 3 Installation, Operation, and Maintenance of LP-Gas Systems**

3-1.1 This chapter applies to the location and field installation of LP-Gas systems that use components, subassemblies, container assemblies, and container systems that are fabricated in accordance with Chapter 2. It also includes requirements for operations, maintenance, fire safety analyses, compliance audits, and incident investigations for LP-Gas systems at bulk plants, industrial occupancies, and industrial plants.

Renumber existing sections 3-3.3 through 3-3.8

3-3 Bulk Plant, Industrial Occupancy, and Industrial Plant LP-Gas Systems

3-3.1 Application. This section includes provisions for LP-Gas systems installed at bulk plants, industrial occupancies, and industrial plants. It also includes provisions for operations, maintenance, fire safety analyses, audits, and incident investigations to augment the other leak control, ignition source control, and fire protection provisions in this code. The provisions of subsections 3-3.3 through 3-3.7 shall apply to all new LP-gas installations at bulk plants, industrial occupancies and industrial plants and, by (insert date 18 months after effective date) to existing installations at bulk plants, industrial occupancies, and industrial plants.

New sections 3-3.3 through 3-3.7:

3-3.3 Operating Procedures. Persons subject to this section who operate LP-Gas systems, who are employed to transport LP-gas, or whose primary duties fall within the scope of this code shall use written procedures that provide clear instructions or steps for safely conducting activities associated with these duties. The procedures shall address startup, normal operations, shutdown, emergency shutdown and operations, startup following a major change to the system, consequences of deviations and steps required to correct or avoid deviations, and equipment inspections. Equipment owners or operators shall ensure that the operating procedures are updated, if necessary, whenever a major change occurs and prior to startup of a changed system.

A3-3.3 Operating procedures or instructions provided by equipment manufacturers or developed by persons or organizations knowledgeable about the process and equipment may be used as the basis for written operating procedures.

3-3.4 Maintenance. Owners or operators of LP-Gas systems subject to this section shall prepare and implement procedures to maintain the on-going mechanical integrity of LP-Gas containers, hoses, piping, valves, and other equipment. Procedures shall include, but not be limited to, the applicable maintenance and testing requirements of sections 1-1.1, 2-3.2, 3-2.10, 3-2.12, 3-2.14, and 4-2.4 of this code, and any other sections that may apply. Persons who perform maintenance on LP-Gas systems shall be trained in the hazards of the system, in how to avoid or correct unsafe conditions, and in the maintenance and testing procedures applicable to the installation. Any maintenance contractor shall ensure that each contract maintenance employee is trained to perform the maintenance procedures developed under this section prior to performing maintenance. LP-Gas equipment owners or operators shall perform or cause to be performed inspections and tests on LP-Gas equipment. Inspection and testing procedures shall follow recognized and generally accepted good engineering practices. The frequency of inspections and tests of LP-gas containers and equipment shall be consistent with manufacturers' recommendations, other specific requirements of this code (e.g., section 2-3.2.3), other applicable industry standards or codes, good engineering practices, and prior operating experience. Where any of the aforementioned sources differ with regard to inspection or testing frequency, the applicable source that specifies the highest frequency shall be adhered to.

A3-3.4 The owner or operator may use procedures or instructions provided by equipment vendors, procedures found in industrial codes, or procedures prepared by persons or organizations knowledgeable about the process and equipment as the basis for maintenance procedures.

3-3.5 Fire Safety Analysis. Owners or operators of LP-Gas installations subject to this section shall perform a fire safety analysis. The analysis shall entail a review of the hazards associated with the site, equipment, and associated procedures.

(a) At a minimum, the analysis shall consider the following factors:

1. Potential for equipment malfunctions, human errors, or other local conditions of hazard within the container site that could cause an accidental release of LP-Gas
2. Safeguards needed to control hazards or prevent malfunctions or human errors
3. Steps needed to detect or monitor releases
4. Potential for exposure to or from other properties, population density, and congestion within the site
5. Probable effectiveness of plant fire brigades or local fire departments based on adequate water supply, response time and training
6. Adequate application of water by hose stream or other method for effective control of leakage, fire, or other exposures.

(b) The fire safety analysis shall, by inspecting all equipment, determine whether the process is designed, fabricated, and operated in accordance with the applicable requirements of this code and other applicable codes, standards, and regulations. The results of the fire safety analysis shall be documented in writing. Owners or operators of installations shall ensure that problems identified during the analysis are resolved in a timely manner. The analysis shall be repeated at least once every five years, and whenever a major change to the installation occurs. The results of the analysis shall be made available to public emergency management officials and members of the general public upon request. The fire safety analysis specified in this subsection will satisfy the requirements for a fire safety analysis as specified in section 3-10.2.3.

A3-3.5 The owner or operator may use checklists developed by persons or organizations knowledgeable about the process and equipment as a guide to conducting a fire safety analysis.

3-3.6 Compliance Audits. Owners or operators of LP-Gas installations subject to this code shall evaluate, or cause to be evaluated, compliance with all applicable provisions of this code at least every three years to verify that the requirements of the code are being followed. The compliance audit shall be conducted by at least one person knowledgeable in the installation and its operations. The audit shall be documented with a report indicating all audit findings. Owners or operators shall promptly determine and document an appropriate response to each of the findings of the compliance audit, correct any deficiencies identified, and document that deficiencies have been corrected. The owner or operator shall retain the two most recent compliance audit reports. Audit reports shall be made available to public emergency management officials upon request.

3-3.7 Incident Investigation. Owners or operators of LP-Gas installations subject to this section shall investigate, or cause to be investigated, each incident which resulted in, or could reasonably have resulted in, a catastrophic release of LP-Gas. The incident investigation shall be initiated as promptly as possible, but not later than 48 hours following the incident. A summary report shall be prepared at the conclusion of the investigation which includes at a minimum: date of incident, date investigation began, description of the incident, factors that contributed to the incident, and any recommendations resulting from the investigation. Owners or operators shall promptly address and resolve the investigation findings and recommendations. Resolutions and corrective actions shall be documented. Investigation findings shall be reviewed with all personnel whose job tasks are affected by the findings. Investigation reports shall be retained for five years, and shall be provided to public emergency management officials.

A3-3.7 Investigations conducted by external investigatory bodies, including, but not limited to, government agencies such as the US Chemical Safety and Hazard Investigation Board, may be used to meet the requirements of subsection 3-3.7.

3-10.2.3 Fire protection shall be provided for installations having storage containers with an aggregate water

capacity of more than 4000 gal (15.1m³) subject to exposure from a single fire. The mode of such protection shall be determined through a competent fire safety analysis.

The first consideration in any such analysis shall be an evaluation of the total product control system including emergency shutoff and internal valves having remote and thermal shutoff capability and pullaway protection, and the optional requirements of Section 3-11, if used. For bulk plants, industrial occupancies and industrial plants, fire safety analyses shall be conducted in accordance with section 3-3.5.