

DEPARTMENT OF TRANSPORTATION**Coast Guard****33 CFR Parts 126 and 127**

[Docket No. [CGD 78-038]]

Liquefied Natural Gas Waterfront Facilities**AGENCY:** Coast Guard, DOT.**ACTION:** Notice of proposed rulemaking.

SUMMARY: The Coast Guard proposes safety standards for the design and construction, equipment, operations, maintenance, personnel training, firefighting, and security at liquefied natural gas waterfront facilities. These regulations implement the Ports and Waterways Safety Act of 1972, as amended, and are necessary to prevent or mitigate the results of an accidental release of liquefied natural gas (LNG) at a LNG waterfront facility. They would reduce the possibility that such an accident could occur, and would reduce the damage and injury to persons and property should an accident occur.

DATE: Comments must be received on or before August 14, 1986.

ADDRESSES: Comments on the proposal should be submitted to Commandant (G-CMC), U.S. Coast Guard, Washington, DC 20593. Comments may be delivered to and will be available for inspection and copying at the Marine Safety Council (G-CMC), Room 2110, U.S. Coast Guard Headquarters, 2100 Second Street, SW., Washington, DC 20593, (202) 426-1477. Normal office hours are between 7:00 a.m. and 4:00 p.m., Monday through Friday, except Federal holidays. The Draft Evaluation and the Draft Environmental Assessment and Findings of No Significant Impact are also available for inspection and copying at the same address.

FOR FURTHER INFORMATION CONTACT: Lieutenant Michael V. Franchini, Project Manager, Office of Marine Environment and Systems (G-WPE-3), (202) 426-9578, between 7:00 A.M. and 3:30 P.M., Monday through Friday, except Federal holidays.

SUPPLEMENTARY INFORMATION: The public is invited to participate in this proposed rulemaking by submitting written views, data or arguments. Comments should include the name and address of the person making them, identify this notice (CGD 78-038) and the specific section of the proposal to which each comment applies, and give the reason for each comment. If an acknowledgment is desired, a stamped,

self-addressed post card or envelope should be enclosed.

The rules as proposed may be changed in light of the comments received. All comments received before the expiration of the comment period will be considered before final action is taken on this proposal.

No public hearing is planned. However, one may be held at a time and place to be set in a subsequent notice in the *Federal Register* if written requests for a hearing are received from interested persons raising valid issues, and if it is determined that the opportunity to make oral presentations will be beneficial to the rulemaking process.

Drafting Information

The principal persons involved in drafting this proposal are: Lieutenant Michael V. Franchini, Project Manager, Office of Marine Environment and Systems, and Stanley M. Colby, Project Attorney, Office of the Chief Counsel.

Need

A new comprehensive set of safety standards is needed for LNG waterfront facilities. LNG is natural gas (mostly methane) that has been cooled to its normal boiling point of about minus 260 °F, and thereby liquefied. As a liquid, natural gas is 1/600th of its original volume, making it economically feasible to transport by vehicle or vessel and store in large quantities. The hazards of LNG derive from its cold temperature, flammability, and characteristics upon release. LNG can cause severe freeze burns to the skin and also immediate cracking of certain metals, such as carbon steel. Upon exposure to ambient temperatures, LNG vaporizes rapidly and returns to a gaseous state. Since its density at ambient temperatures is less than air, natural gas rises. However, due to the vapor's initially cold temperature after vaporization, it may remain close to the ground and travel in the form of a plume or cloud for long distances before dispersing into the atmosphere. While natural gas is not toxic, it can cause asphyxiation; and it is flammable in air in a concentration between 5 and 15 percent by volume.

Unlike a spill on land, LNG spilled on water would spread very quickly over the flat surface of the water and would not accumulate in low-lying areas or impounding spaces. It would evaporate faster on water than on land because of greater surface area and because it would gain heat from the unlimited supply of heat in the water. These factors make it very difficult to control a release of LNG on water.

This Notice of Proposed Rulemaking (NPRM) would replace older facility regulations in 33 CFR Part 126 for methane and establish a new Part 127 to apply to LNG waterfront facilities. Existing Coast Guard waterfront facility regulations in Part 126 which apply to LNG waterfront facilities, were issued in the 1950's and 1960's under the authority of the Magnuson Act (50 U.S.C. 191). They are still effectively enforced on waterfront facilities handling cargoes other than LNG. However, since they were written before the construction of LNG waterfront facilities began (about 1969) and do not account for the relatively new technology, new regulations for LNG waterfront facilities are needed.

So that LNG waterfront facilities are not regulated in two different parts of Title 33 of the Code of Federal Regulations, this NPRM would also revise §§ 126.05 and 126.10. LNG waterfront facilities would no longer be "designated waterfront facilities" or "facilities of particular hazard" and Part 126 would no longer apply.

The standards proposed by this notice concern design and construction, equipment, operations, maintenance, personnel training, firefighting, and security on that part of an LNG waterfront facility which falls under Coast Guard purview. They would fill a gap in current federal regulations for LNG waterfront facilities. The Materials Transportation Bureau (MTB), Research and Special Programs Administration, DOT, published regulations in 49 CFR Part 193 that apply to the inland side of all LNG waterfront facilities. The regulations in this proposal would apply only to the waterside of LNG waterfront facilities, and are compatible with MTB's regulations. The MTB and the Coast Guard cooperated in developing a format to be used by both agencies in their regulations.

These regulations would make many industry consensus standards and practices mandatory. Conscientious owners and operators of LNG facilities have developed and implemented safety standards and programs that have reduced the potential for accidents and injuries at these waterfront facilities. However, these standards and programs are voluntary. Making these industry standards and practices mandatory would provide new impetus for less conscientious companies, subcontractors, and workers to observe accepted waterfront safety practices and will provide a means to ensure corrective action where necessary.

Finally, these proposed regulations would organize the Coast Guard

requirements for LNG waterfront facilities so that they are easier for industry to understand and meet, and easier for the Coast Guard to enforce. There are concepts being considered in the proposed regulations that are not industry standards or practices. Some are based on Coast Guard requirements that are applied now to LNG waterfront facilities. They are from general sources, such as the existing waterfront facility regulations in 33 CFR Part 126 and the general ports and waterways safety regulations in 33 CFR Part 160. Others parallel the Coast Guard's oil pollution prevention regulations in 33 CFR Parts 154-156. Additional provisions are taken from the MTB's regulations in 49 CFR Parts 193 to provide uniformity. These concepts would be consolidated with up-to-date standards for LNG waterfront facilities into one Part in the Code of Federal Regulations.

Regulatory History

In the July 14, 1978 issue of the *Federal Register* (34 FR 30381), the Department of Transportation published a Memorandum of Understanding (MOU) between the Coast Guard and the MTB concerning each agency's responsibility for regulating LNG waterfront facilities. This MOU became effective on February 7, 1978.

The agencies considered the MOU necessary because they share certain regulatory authority over LNG waterfront facilities and wanted to avoid duplication of regulations. This authority concerned the siting, design, equipment, operations, and maintenance of LNG waterfront facilities.

By the terms of the MOU, the Coast Guard was responsible for establishing, and the MTB would refrain from establishing, regulatory requirements for: (1) The site selection as it relates to management of vessel traffic in and around each LNG waterfront facility; (2) fire prevention and fire protection equipment, systems, and methods for use at LNG waterfront facilities; (3) security of each LNG waterfront facility; and (4) all other matters pertaining to each facility between each vessel moored there and the last manifold or valve immediately before a receiving tank. (This area is referred to as the "marine transfer area" and in the proposed regulations as just the "area".) As a result of the MOU, the Coast Guard issued on August 3, 1978 an Advance Notice of Proposed Rulemaking (ANPRM)(43 FR 34362) proposing preliminary draft safety standards for LNG waterfront facilities.

The Research and Special Programs Administration (RSPA) was reorganized on November 1, 1985. The Office of

Pipeline Safety Regulation in the MTB became the Office of Pipeline Safety in the RSPA.

Since the publication of the original MOU in July 1978, a revised MOU has been developed between the Coast Guard and the RSPA. In this MOU, the agencies agreed to a division of regulatory responsibilities for fire prevention and protection and security at the facility, at the last manifold or valve immediately before a receiving tank. As with all other matters pertaining to each facility, the Coast Guard will promulgate regulations for fire prevention and protection and security for that part of the LNG waterfront facility between each vessel and the last manifold or valve immediately before a receiving tank. The new MOU became effective on (insert date of signing). Because of the MOU and their new jurisdiction over fire prevention and protection and security, the RSPA will revise its regulations in a separate rulemaking, which will be coordinated with this NPRM.

The revised MOU follows:

Memorandum of Understanding Between the United States Coast Guard and the Research and Special Programs Administration for Regulation of Waterfront Liquefied Natural Gas Facilities

I. Introduction

Within the Department of Transportation (DOT), the United States Coast Guard (USCG) and the Research and Special Programs Administration (RSPA) exercise separate and overlapping safety regulatory authority affecting the siting, design, construction, maintenance, and operation of waterfront liquefied natural gas (LNG) facilities adjoining the navigable waters of the United States. The USCG derives its authority over such facilities from the Ports and Waterways Safety Act (33 U.S.C. 1221 *et seq.*) and Executive Order 10173, as amended (3 CFR, 1949-1953 Comp., p. 356), issued by the President under the Magnuson Act (50 U.S.C. 191). The regulatory authority of the RSPA over these same facilities (as well as non-waterfront LNG facilities) is derived from the Natural Gas Pipeline Safety Act of 1968, as amended (49 U.S.C. 1671 *et seq.*). Under 49 U.S.C. 1671(12), the RSPA's authority over LNG facilities does not extend to any structures or equipment (or portions thereof) located in navigable waters.

In recognition of each of the parties' respective regulatory responsibilities, the USCG and the RSPA agree that a memorandum of understanding is needed to avoid duplication of regulatory efforts regarding waterfront LNG facilities and to maximize the exchange of relevant information.

II. Responsibilities of the Parties

For the foregoing reasons, the USCG and the RSPA agree to the following division of

regulatory responsibilities with respect to waterfront LNG facilities and cooperation in carrying out those responsibilities:

USCG Responsibilities

The USCG is responsible for establishing regulatory requirements for—

(1) Facility site selection as it relates to management of vessel traffic in and around a facility; and

(2) All matters pertaining to structures or equipment (or portions thereof) located in the navigable waters and facilities located between the vessel and the last manifold (or valve) immediately before the receiving tank(s), other than the site selection responsibilities of the RSPA set forth below.

RSPA Responsibilities

The RSPA is responsible for establishing regulatory requirements for—

(1) Site selection of facilities other than structures or equipment (or portions thereof) located in the navigable waters and except as provided by paragraph (1) of the "USCG Responsibilities" set forth above; and

(2) All other matters pertaining to the facilities beyond (and including) the last manifold (or valve) immediately before the receiving tank(s) except those structures or equipment (or portions thereof) located in the navigable waters.

Joint Responsibilities

(1) The USCG and the RSPA will cooperate and assist each other in carrying out their respective waterfront LNG facility regulatory enforcement activities; and

(2) The USCG and the RSPA, in an effort to avoid inconsistent regulation of similar safety matters (including as between waterfront and non-waterfront LNG facilities), will consult with each other before issuing each Advance Notice of Proposed Rulemaking, Notice of Proposed Rulemaking, and final regulation affecting waterfront LNG facilities.

III. Effect

This agreement is effective upon being signed by the authorized representatives of both the USCG and the RSPA and supersedes in its entirety the February 7, 1978, Memorandum of Understanding between the USCG and the Materials Transportation Bureau.

For the United States Coast Guard.

ADM James S. Gracey
Commandant.

Dated: May 5, 1986.

For the Research and Special Programs Administration.

M. Cynthia Douglass
Administrator.

Dated: May 9, 1986.

The regulatory authority of the Coast Guard is derived from the Ports and Waterways Safety Act of 1972 (PWSA), as amended by the Port and Tanker Safety Act of 1978 (33 U.S.C. 1221). Under this authority, the Coast Guard published the ANPRM on August 3, 1978. The RSPA published its regulations under the authority of the

Natural Gas Pipeline Safety Act of 1968 (NGPSA) (49 U.S.C. 1671), as amended by the Natural Gas Pipeline Safety Act Amendments of 1976 (NGPSAA) (Pub. L. 94-474, 90 Stat. 2073) and by the Pipeline Safety Act of 1979 (PSA) (Pub. L. 96-129, 93 Stat. 996, 998, 1001); and the Transportation Safety Act of 1974 (TSA) (49 U.S.C. 1801), as amended by the Hazardous Materials Transportation Act Amendments of 1976 (Pub. L. 94-474, 90 Stat. 2068).

These diverse regulatory authorities complicated federal regulation of LNG waterfront facilities. Section 4 of the NGPSA (49 U.S.C. 1672(a)(1)), as amended, allows state agencies to adopt additional or more stringent safety standards for intrastate pipeline transportation if such standards are compatible with the Federal minimum standards. However, this section prohibits those agencies from adopting or continuing in force any such standards applicable to interstate transmission facilities, after the Federal minimum standards become effective. No similar preemptive authority is granted by the PWSA, as amended. Without such preemption, it would be possible for an LNG facility to have to operate under the requirements of two Federal agencies and the State and local governments.

To ensure uniformity in regulating all LNG waterfront facilities, the Secretary of Transportation delegated to the Coast Guard certain functions and responsibilities vested in the Secretary by the NGPSA, as amended by the NGPSAA. This delegation, which appeared in the January 26, 1979 issue of the Federal Register (44 FR 5436) as an amendment to 49 CFR 1.46, allowed the Coast Guard to carry out the Secretary's responsibilities under the NGPSA, as amended, in accordance with the MOU, and, in effect, bestowed the same preemptive authority to the Coast Guard as delegated to the RSPA.

A supplemental ANPRM was issued on March 8, 1979 (44 FR 12693) reflecting the change in authority. However, subsequent legal review and legislative activity resulted in the determination that the Coast Guard does not have authority to regulate LNG waterfront facilities under the NGPSA, as amended by the PSA. The legislative history of the various statutes made it clear that Congress intended that the Coast Guard regulate LNG waterfront facilities exclusively under authority of the PWSA. This is supported by the definition of LNG facilities added by the PSA that excludes "any structure or equipment (or portion thereof) located in the navigable waters . . ." Therefore,

Coast Guard regulations for LNG waterfront facilities will be issued under authority of the PWSA, which does not prohibit State or political subdivisions thereof from prescribing higher safety equipment requirements or safety standards for facilities than those which may be prescribed through this rulemaking process.

The following table shows the correspondence between section numbers in the ANPRM of August 3, 1978 and this NPRM. Due to modifications made to this NPRM, including the incorporation of some of the RSPA's fire and security regulations, not all sections in the ANPRM have corresponding sections in the NPRM. Some sections of the ANPRM have been omitted and some new sections have been added to the NPRM. Because the proposed regulations concern only LNG waterfront facilities and no other dangerous cargoes or facilities, they would not be established in Part 126, as originally proposed, but established in a new Part 127 in Title 33 of the Code of Federal Regulations.

NPRM	ANPRM
Subpart A—General	Application and Enforcement
127.001	126.2002
127.003	126.2050
127.005	126.2003
127.007	126.2011
127.009	126.2110
127.011	126.2015
127.013	126.2016
127.015	126.2036
127.017	126.2031
127.019	126.2810(b)
Subpart B—Design and Construction	Design and Construction
127.101	126.2210
127.103	126.2214
127.105	126.2219
127.107	126.2220
127.109	126.2221
127.111	126.2222
127.113	
Subpart C—Equipment	Detection and Sensor Systems
127.201	126.2310, 126.2315,
	126.2320, 126.2325
127.203	126.2320(d)
127.205	126.2335
127.207	
Subpart D—Operations	Operations
127.301	126.2811
127.303	126.2813
127.305	126.2821
127.307	126.2822
127.309	126.2810
127.311	126.2842
127.313	126.2845
127.315	126.2851
127.317	126.2852
127.319	126.2853
127.321	126.2853(b)
Subpart E—Maintenance	Maintenance and Repair
127.401	126.2410, 126.2420
127.403	126.2430
127.405	126.2460
127.407	126.2440
127.409	126.2907
Subpart F—Personnel Training	Personnel
127.501	126.2722

NPRM	ANPRM
Subpart G—Firefighting	Fire Protection and Safety Equipment
127.601	126.2511
127.603	
127.605	126.2550
127.607	126.2520
127.609	126.2524
127.611	
127.613	126.2841
127.615	126.2852
127.617	126.2853(n)
Subpart H—Security	Security
127.701	
127.703	126.2610
127.705	126.2610
127.707	126.2610
127.709	126.2610
127.711	

The regulatory scheme published in the ANPRM has been reorganized and simplified. Sections in the NPRM have been grouped into subparts and numbered according to the subpart group. The ANPRM consisted of 72 sections, while the NPRM consists of 52 sections. The burden on the industry has been reduced. There would be fewer paperwork requirements; the records of the Letter of intent, inspection, maintenance, and personnel training are no longer proposed in the NPRM. The number of industry specifications incorporated by reference has been reduced from 19 in the ANPRM to 7 in the NPRM. Burden is discussed further in the section titled EVALUATION.

General Comments

Comments were received on the ANPRM from 48 different commenters, the largest group (23) representing gas industry associations of LNG facility operators. Government agencies, non-industry organizations, and individuals also commented. The Coast Guard has reviewed the comments and has adopted those which it deems appropriate.

The comments indicated that there was confusion concerning the applicability of the regulations. Seven comments recommended that the regulation distinguish marine-mode waterfront facilities from peak shaving and satellite facilities adjacent to navigable waterways. Many comments to specific sections of the ANPRM also reflected this confusion. The proposed regulations apply only to waterfront facilities at which LNG transfer operations are conducted. A waterfront facility is defined in 33 CFR 126.01 as "all piers, wharves, docks, and similar structures to which a vessel may be secured; areas of land, water, or land and water under and in immediate proximity to them; buildings on such structures or contiguous to them and

equipment and materials on such structures or in such buildings. . . . if LNG is not transferred between a vessel and the facility, these proposed regulations would not apply.

Comments also indicated confusion over the applicability of the proposed regulations to the whole facility versus the marine transfer area. This confusion was eliminated by the revised MOU, which was signed on (insert date of signing). The MOU splits Coast Guard and RSPA firefighting and security responsibility at the same location on the facility as all other matters, i.e. at the last manifold (or valve) immediately before a receiving tanks.

Other commenters said that it was not clear which proposed regulations applied to existing and new LNG waterfront facilities and which applied only to new LNG waterfront facilities. The proposed definition in this notice for "existing" means constructed or being constructed under a contract awarded before the effective date of the regulations. "New" is proposed to mean constructed or being constructed under a contract awarded on or after the effective date of the regulations. Existing facilities would not have to comply with the requirements in the design and construction, equipment, and security subparts, except § 127.701. New facilities would have to comply with all of the proposed rules. The applicability section was rewritten from that proposed in the ANPRM to eliminate this confusion.

Comments relating to the lack of Federal preemption authority in the PWSA were also received. The Coast Guard ANPRM was issued under the authority of the PWSA, which does not prohibit States or political subdivisions thereof from prescribing higher facility safety equipment requirements that those that may be prescribed through this rulemaking process. The RSPA's regulations, which apply to the inland side of a LNG waterfront facility, were issued under the authority of the NGPSA which allows preemption of state and local regulations. Eleven commenters indicated that different authorities governing different parts of a facility could result in a facility operating under the requirements of several overlapping and potentially conflicting jurisdictions. This is correct, however the limitations in existing statutory authority, as discussed earlier in the section titled REGULATORY HISTORY, dictate this result. The RSPA and Coast Guard regulations are intended to be completely compatible to minimize the burden on industry. Comments are

particularly requested on any perceived areas of conflict or inconsistency.

The following portion of the preamble discusses the section-by-section comments to the ANPRM, as well as important changes to the proposed sections of this notice.

Subpart A—General

Many commenters suggested that §§ 126.2001, 126.2002 and 126.2025 (published as § 126.2205, in error) of the ANPRM be clarified to indicate the applicability of the proposed regulations. Section 126.2001, Purpose, and § 126.2025, Effective dates, have been omitted in the NPRM. These regulations would be effective 30 days after the final rule is published. In those sections in the NPRM where time is needed to comply with the requirements, a separate effective date is included. Clarifications to eliminate the confusion over the definition of waterfront facility, the applicability of the NPRM to the facility, and the applicability to new and existing facilities have been made. Other commenters said that the division of jurisdiction between the RSPA and the Coast Guard was complicated. This division is clearer in the revised MOU.

Many comments suggested changes to definitions found in the ANPRM. Twenty-one definitions in the ANPRM are not included in the NPRM because they are no longer used in the regulations or their meanings are the same as those found in a standard dictionary. Several minor wording changes have been made. Two definitions have been substantially rewritten to agree with the rewritten applicability. The definition of "Marine transfer area" (area) now corresponds to the area of Coast Guard jurisdiction as outlined by the MOU and the definitions of "waterfront facility" and "LNG facility" have been combined to form the definition of "LNG waterfront facility".

Section 126.2011, Letter of intent (now § 127.007), has been changed by excluding requests for information that would not be utilized or which is available to the Coast Guard from other sources. Section 126.2901, which requires the operator to keep a record of the Letter of intent, has been omitted from the NPRM. A paragraph concerning existing structures which have not transferred LNG within 12 months and which intend to transfer LNG, has been added to § 127.007 in the NPRM.

Eighteen commenters made suggestions concerning proposed § 126.2012 and the issuance of a use permit by the COTP to the facility operator for a period of five years. Ten said that the 5-year time period was too

restrictive. This section has been omitted from the NPRM and a new section has been proposed as, § 127.019, *Operations Manual and Emergency Manual: Procedures for examination*. It would require that the *Operations Manual and Emergency Manual* meet §§ 127.305 and 127.307, respectively, and contain the words "examined by the Coast Guard" after review by the COTP. The Coast Guard believes that proposed § 127.019 and § 127.309, *Operations Manual and Emergency Manual: Use*, would be sufficient to regulate LNG transfer operations, and that the Use Permit would not be necessary. Section 126.2013 of the ANPRM, Enforcement, has also been omitted. The authority of the COTP to enforce regulations is clearly stated in Federal law and regulations.

Several comments on §§ 126.2016, 126.2031, 126.2035, and 126.2036 of the ANPRM indicated that a time limit should be set for response by the Coast Guard to any petitions or applications made by facility operators. The Coast Guard plans to issue policy guidance concerning this issue to its District Commanders, indicating that response shall be made in a timely manner. Section 126.2035, Exemptions, has been omitted, while the other sections now appear as 127.013, 127.017, and 127.015 respectively in the NPRM.

Section 126.2050, Reference specifications, standards and codes, (proposed in the NPRM as § 127.003) has been changed to include only those sources mentioned in the NPRM. Citations have been updated to reflect current editions.

Three commenters suggested that § 126.2110, LNG Facility Siting; LNG vessels, was either too general or that it should be deleted altogether. The Coast Guard feels that this requirement must be included. In order to protect the marine environment and prevent damage to or destruction of structures on or adjacent to the navigable waters, the waterway leading to the site from the sea must be suitable for the number and size of vessels contemplated as carriers for LNG. This section has been rewritten as proposed § 127.009, Letter of recommendation. It is very specific as to the proposed criteria used by the COTPs to fulfill the Coast Guard's siting responsibility under the MOU with the RSPA. The Letter of recommendation contains the COTP's recommendations concerning proposed sites. The Coast Guard is authorized by law to establish water or waterfront safety zones, or other measures for limited, controlled, or conditional access and activity, when

necessary for the protection of any vessel, structure, waters, or shore area.

Subpart B—Design and Construction

Section 126.2210 of the ANPRM (now § 127.101) has been retitled "Design and construction: General" and contains updated citations for the 1985 edition of NFPA 59A. Chapters 1, 3, 5 and 9 of NFPA 59A have been eliminated from this proposed section because they relate to areas outside Coast Guard purview.

Several paragraphs in § 126.2214 of the ANPRM (now § 127.103) have been omitted because they are already the minimum standards of industry construction. In accordance with several comments, mooring and breasting dolphins are exempted from the substructure requirements of proposed § 127.103. Comments also indicated confusion over the term "fire endurance rating" contained in § 126.2214 of the ANPRM because the term "flame" endurance rating was defined in § 126.2003 of the ANPRM. The word "flame" was inadvertently used in the definition and has been changed to "fire" in proposed § 127.005. Section 126.2214(m) concerning warning alarms has been moved to the proposed Subpart C, Equipment. It has also been changed to require that alarms be heard and seen from a distance of 1 mile. A recent National Transportation Safety Board investigation of a waterfront facility, involving a ship collision, pointed out the need for both visible and audible alarms to warn facility personnel and vessels of danger.

Several commenters felt that the prohibition, proposed in the ANPRM in § 126.2216, of sewers, open trenches, and drains that would allow LNG vapors to be carried to areas not under the full control of the operator, was too stringent. Because existing LNG waterfront facilities should not be required to rebuild their drainage systems, if they have had no problems, we have moved this requirement to Subpart B, Design and Construction, which applies only to new LNG waterfront facilities. It has been included in § 127.101 of the NPRM by incorporating by reference section 2-1.2 of NFPA 59A. Four commenters felt that the quality assurance plan required in § 126.2217 of the ANPRM was expensive and unnecessary. This section has been omitted from the NPRM.

Section 126.2219, LNG facility layout and systems spacing, has been replaced by a more general requirement (proposed in § 127.105) than the one in the ANPRM. The NPRM is written as a performance standard but retains the concept of the ANPRM.

Many comments to the ANPRM § 126.2221, Lighting systems, indicated that paragraph (b), which proposed that the lighting pattern on the facility be symmetrical, should be changed. The Coast Guard agrees that this is not necessary and has proposed a performance standard in § 127.109. Paragraph (a) of § 126.2222 (now § 127.111) has also been changed. The Coast Guard believes that three separate communications systems for the marine transfer area are not necessary. Therefore, a facility-wide "primary communications system" is not proposed in the NPRM.

Subpart C—Equipment

Sections 126.2310, 126.2315, 126.2320, and 126.2325 in the ANPRM have been condensed into § 127.201 in the NPRM. Section 127.201, Sensing and alarm systems, would incorporate parts of NFPA 59A instead of establishing new requirements for these systems.

As suggested by several comments, the title of § 126.2335 of the ANPRM has been changed from "Automatic shutdown" to the more appropriate "Emergency Shutdown" in proposed § 127.205. The section now includes a proposal for manual actuation. The proposed actuation at "30% or more of the lower flammable limit" in the ANPRM has been changed to "when LNG concentrations . . . exceed 40% of the lower flammable limit" in the NPRM to be consistent with the requirement found in 49 CFR 193.2439(a)(4).

Subpart D—Operations

The proposal in § 126.2810 in the ANPRM, LNG facility operations, has been divided into two sections in the NPRM. Section 127.309, *Operations Manual* and *Emergency Manual*: Use, proposes mandatory use of the *Emergency Manual*, which was not included in paragraph 126.2810(a). Section 127.019, *Operations Manual* and *Emergency Manual*: Procedures for examination, proposes requirements for new and existing facilities to correct the omission of procedures for existing facilities in § 126.2810(b).

Several commenters expressed concern that proprietary security procedures would become public information if they were included in the *Operations Manual*. Omitting § 126.2816 of the ANPRM, Manuals: availability, and, by silence, giving the operator control over the distribution of the manual, should alleviate the concern over this problem. The Coast Guard may withhold from public disclosure any information in the *Operations Manual* or *Emergency Manual*, in accordance with

the requirements of 5 U.S.C. 552a and 49 CFR Part 7.

Commenters noted that the prohibition against motor vehicles in § 126.2842(a) of ANPRM should apply only during marine transfer operations. This paragraph has been omitted from proposed § 127.311. The concept as delineated by the words "when permitted by local ordinances and regulations" has been omitted from § 127.311(b) because, as commenters indicated, it is unnecessary.

Several comments were received on § 126.2852 of the ANPRM, Declaration of Inspection, stating that the responsibility for certain items was misplaced. These comments are no longer relevant because of the rewriting of this section. As now proposed, the person in charge of shoreside transfer operations would be responsible for executing the declaration. The proposal for the Declaration of Inspection to be in a specified format has been omitted. The proposal would allow any form, provided that the required information is included.

The Coast Guard concurs with commenters that operations need not be stopped if a fire occurs anywhere on the facility, as proposed in the ANPRM. Therefore paragraph (c)(2) of § 126.2853 has been rewritten. Proposed § 127.319 of the NPRM would require that transfer operations be discontinued during any fire in the marine transfer area and during uncontrolled fires within 4.8 kilometers (3 miles) of the periphery of the area. Other comments on § 126.2853 concerned paragraph (o) and stated that a requirement for hoses to be charged and laid out was unnecessary. The Coast Guard agrees with these comments and this proposal has been omitted.

Subpart E—Maintenance

Some proposals in this group in the ANPRM were written so that they appeared to apply to the process plant, which is beyond Coast Guard jurisdiction. Corrections to those sections have been made to clarify the applicability.

Commenters made suggestions concerning the time interval between tests proposed in § 126.2440, Testing and calibration. The Coast Guard believes that "at least once every 12 months" is appropriate and has retained the concept in proposed § 127.407.

Some commenters to ANPRM § 126.2460, Repairs, indicated that some safety repairs can be made without taking the transfer system out of service. The Coast Guard agrees that the decision to take the system out of service during repairs, can be made by

the facility operator on a case-by-case basis. This requirement has been omitted.

Subpart F—Personnel Training

Section 126.2710, Emergency response personnel, has been omitted because these proposed requirements would involve the process plant operation and the whole facility, and should only apply to the marine transfer area. As suggested in the comments concerning paragraph (d) of § 126.2722, Training requirements, it is not necessary to repeat all required training at least every two years. The Coast Guard believes that requiring a refresher course for personnel who have already received training, is sufficient, which is proposed in § 127.501(c).

Subpart G—Firefighting

Several commenters thought that § 126.2510 of the ANPRM concerning written approval for the installation of any fire control system was redundant and unnecessary. The Coast Guard agrees that the COTP does not need to approve any additional firefighting equipment beyond the requirements of this subpart. Section 127.601 of this NPRM would require that additional equipment still meet the requirements of the subpart and bear the approval of Underwriters Laboratories, the Factory Mutual Research Corp., or the Coast Guard.

Many comments were received concerning § 126.2512, Automotive fire apparatus. However, because of the new MOU between the USCG and the RSPA, this subpart no longer applies to the whole facility and this section has been omitted.

Another comment indicated that the fire main pressure proposed in § 126.2522(d) of the ANPRM should not be limited by a maximum pressure. While the reaction forces from fire hoses can become dangerous above this maximum pressure, fire monitors operate safely at higher pressures. Therefore this requirement has been changed. The guideline for the fire main pressure in proposed § 127.607 is now a minimum pressure.

Paragraph 126.2550(d) has been omitted because two commenters indicated that no evacuation equipment, meeting the requirements in this paragraph, was available.

A section concerning portable fire extinguishers (§ 127.603) and a section requiring an international shore connection (§ 127.611) have been proposed for this subpart.

Subpart H—Security

Three new proposals have been added to this subpart in the NPRM. Section 127.701 requires that security procedures and arrangements that were in use when LNG transfer operations were last conducted be continued and maintained as long as transfer operations are conducted. Section 127.705, Security systems, requires that security patrols be made unless the facility has a manned television monitoring system. Section 127.711, Communications, requires that security patrols have a means to communicate with other personnel on duty on the facility.

Section 126.2610 in the ANPRM proposes a chain-link fence around the whole facility. This has been rewritten as proposed § 127.703 because, as many commenters pointed out, it is not intended to enclose the dock area of the facility.

Evaluation

The Transportation Systems Center (TSC) prepared a report entitled, *Preliminary Impact Analysis of the U.S. Coast Guard's Proposed LNG Regulations*, which is available through the Project Manager listed under "For Further Information Contact". For the analysis, a composite baseline standard was used by which the types of incremental costs and benefits, as well as their distributional effects, were identified. The baseline consisted of: (1) Current Coast Guard Waterfront Facilities regulations (33 CFR Part 126); (2) USCG facility operations plans which are issued by the Captain of the Port (COTP) for the port in which an LNG facility is located; and (3) National Fire Protection Association (NFPA) standards. The primary LNG standard is NFPA 59A, "Standards for the Production, Storage and Handling of LNG—1985 edition". NFPA standards are considered to be minimum industry standards voluntarily adopted by the LNG industry. The analysis determined the impacts of the ANPRM by identifying where the proposed regulations exceed current practices and, therefore, where costs and benefits would accrue. Although state and local jurisdictions may impose more stringent LNG safety standards, the baseline used in the analysis reflects only those Federal requirements and industry standards common to all waterfront facilities.

Of the 72 sections contained in the ANPRM, 54 were analyzed in the TSC report. Thirty-five or 65% of the 54 analyzed, introduced no change from the current baseline standards. Of the

nineteen sections of the ANPRM that exceeded current requirements and standards, fifteen resulted in administrative costs, mostly for facility operators. Most of these costs would be minimal and not recurring. An example of an administrative cost would be the preparation and submission of an *Operations Manual* and an *Emergency Manual* to the COTP. The impact of this requirement would be minimal because facility operators already submit much of this information to the COTP or maintain it themselves.

The proposed fire protection and security regulations of the ANPRM were not analyzed by TSC because the Coast Guard's proposed regulations are similar to the RSPA's final rules found in 49 CFR Part 193. A telephone survey of all LNG waterfront facilities indicated that the proposed regulations in this notice do not exceed current industry practices.

To ensure the currency and validity of the TSC report, requests for estimates of the compliance costs of this NPRM, were sent to two operating LNG waterfront facilities. The results were the latest cost figures and a confirmation that the TSC report could still be applied to the NPRM. The survey information and the TSC report were both used in the final cost/benefit analysis.

Of the 52 sections contained in the NPRM, 39 or 75% introduced no change from the current baseline requirements and standards. Of the thirteen sections of the NPRM that exceed current requirements, 8 would result in administrative costs. This is a 32% decrease from ANPRM to NPRM in the number of sections in the rulemaking that exceed current requirements.

The proposed safety standards would result in low compliance costs. According to the analysis in the Draft Evaluation, the total initial cost of these regulations to the LNG industry is \$96,000.00 and the annual recurring cost is \$44,000.00. These costs represent such a relatively small amount of money to the industry that it is believed that this regulation will have no perceptible impact on the industry. For further information concerning the economic consequences of these proposed regulations, the availability of the Draft Evaluation is discussed below.

The TSC analysis concluded that due to the low probability of an LNG accident occurring, the expected value of the quantifiable benefits of the ANPRM were low. The benefits would be great if an accident occurred. A "maximum credible accident", as discussed in the Draft Evaluation,

involving a pool fire of 30,000 m³ in an area with a population density of 10 people per km² at the dock site, could result in 21 fatalities with a cost to society of \$21 million in property damage, injury, and loss of life. If the same pool fire occurred in an area with a population 1000 persons per km², the result could be 3,810 fatalities with social costs of \$3.8 billion in property damage, injury, and loss of life.

Accidents involving small amounts of LNG have occurred in the past. The National Transportation Safety Board (NTSB) investigated one such accident that occurred at an LNG waterfront facility on October 6, 1979. According to NTSB report No. NTSB-PAR-80-2, "About 3:35 a.m., e.d.t., an explosion caused by liquefied natural gas vapors destroyed a transformer building at the reception facility of the Columbia LNG Corporation, Cove Point, Maryland. Odorless liquefied natural gas leaked through an inadequately tightened LNG pump seal, vaporized, passed through approximately 210 ft. of underground electrical conduit, and entered the substation building. One person was killed and one person was seriously injured. Damage to the facility was estimated at about \$3 million."

Despite the very large savings that would result from preventing a major LNG accident or mitigating the results of an accident if it occurred at an LNG facility, it is difficult to precisely quantify the benefits that will accrue. Specific comments on costs and benefits are requested. This is because of the extremely low probability of a major LNG accident occurring. The limited number of reported LNG facility accidents requires that probability estimates of accidents be based on the theoretical analysis of factors which might lead to their occurrence. There is large inherent uncertainty associated with such estimates, and hence of the cost/benefit values derived from them. Because of such uncertainties, prudence dictates an extra measure of caution where there is potential for a catastrophic accident. Such caution should be weighed along with other considerations when judging the need for safety standards that can reduce the possibility of a catastrophic LNG accident. This is true even when these measures may not be justified based on a theoretical risk analysis.

The benefits that cannot be quantified are discussed in the section titled NEED in this preamble. They include replacing outdated regulations, filling a gap in federal regulations, making industry standards and practices mandatory, and

consolidating and better organizing the regulations.

These proposed safety standards are considered to be non-major under Executive Order 12291 of February 17, 1981 (3 CFR, 1982 Comp., p. 127) and non-significant under the DOT regulatory policies and procedures (44 FR 11034; February 26, 1979) and the Office of Management and Budget Bulletin No. 85-9 of January 10, 1985. The total cost to the industry of these proposed LNG safety standards does not exceed the \$100 million threshold to qualify as a major rulemaking, and so a Regulatory Impact Analysis is not required.

This proposed rulemaking contains information collection requirements in sections 127.007, 127.015, 127.017, 127.019, 127.301, 127.317, and 127.409. They have been submitted to the Office of Management and Budget for approval under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.). Persons desiring to comment on these information collection requirements should submit their comments to: Office of Regulatory Policy, Office of Management and Budget, 726 Jackson Place, NW., Washington, DC 20503, ATTN: Desk Officer, U.S. Coast Guard. Persons submitting comments to OMB are also requested to submit a copy of their comments to the U.S. Coast Guard as indicated under the section titled ADDRESSES.

The Coast Guard certifies that this proposal will not have a significant economic impact on a substantial number of small entities. This is because few, if any, small entities are involved in the costly and highly technical operations of LNG waterfront facilities. All the existing LNG waterfront facilities are owned and operated by multimillion dollar corporations.

This regulatory project is not anticipated to have an adverse impact on the environment. It is intended to prevent or mitigate the results of a catastrophic accident at a LNG waterfront facility.

The Draft Evaluation and the Environmental Assessment and Finding of No Significant Impact have been prepared and are available for inspection and copying from the Marine Safety Council (G-CMC), U.S. Coast Guard, 2100 Second Street, SW., Washington, DC 20593, (202) 426-1477.

List of Subjects

33 CFR Part 126

Explosives, Harbors, Hazardous materials.

33 CFR Part 127

Harbors, Security measures, Vessels.

In accordance with the preceding, it is proposed to amend Subchapter L, Chapter I of Title 33, Code of Federal Regulations as follows:

PART 126—[AMENDED]

1. The authority citation to Part 126 is revised to read as follows:

Authority: 33 U.S.C. 1231; 49 CFR 1.46 (n)(4).

§ 126.05 [Amended]

2. By amending § 126.05(a) by adding the words ", except methane" after the words "any flammable or combustible liquid in bulk".

§ 126.10 [Amended]

3. By removing the word "methane" from the list in § 126.10(d).

4. By adding a new Part 127 to read as follows:

PART 127—LIQUEFIED NATURAL GAS WATERFRONT FACILITIES

Subpart A—General

Sec.
127.001 Applicability.
127.003 Incorporation by reference.
127.005 Definitions.
127.007 Letter of intent.
127.009 Letter of recommendation.
127.011 LNG waterfront facility inspections.
127.013 Suspension of transfer operations.
127.015 Appeals.
127.017 Alternatives.
127.019 *Operations Manual* and *Emergency Manual: Procedures for examination*.

Subpart B—Design and Construction

127.101 Design and construction: General.
127.103 Piers and wharves.
127.105 Marine transfer area layout and spacing.
127.107 Electrical power systems.
127.109 Lighting systems.
127.111 Communications systems.
127.113 Warnings signs.

Subpart C—Equipment

127.201 Sensing and alarm systems.
127.203 Portable gas detectors.
127.205 Emergency shutdown.
127.207 Warning alarms.

Subpart D—Operations

127.301 Persons in charge of shoreside transfer operations: Qualifications and certification.
127.303 Compliance with suspension order.
127.305 *Operations Manual*.
127.307 *Emergency Manual*.
127.309 *Operations Manual* and *Emergency Manual: Use*.
127.311 Motor vehicles.
127.313 Bulk storage.

- Sec.
 127.315 Preliminary transfer inspection.
 127.317 Declaration of inspection.
 127.319 LNG transfer.
 127.321 Release of LNG.

Subpart E—Maintenance

- 127.401 Maintenance: General.
 127.403 Inspections.
 127.405 Repairs.
 127.407 Testing.
 127.409 Records.

Subpart F—Personnel Training

- 127.501 Training: General.

Subpart G—Firefighting**Fire Equipment**

- 127.601 Fire equipment: General.
 127.603 Portable fire extinguishers.
 127.605 Emergency outfits.
 127.607 Fire main systems.
 127.609 Dry chemical systems.
 127.611 International shore connection.

Fire Protection

- 127.613 Smoking.
 127.615 Fires.
 127.617 Hotwork.

Subpart H—Security

- 127.701 Security on existing facilities.
 127.703 Access to the marine transfer area.
 127.705 Security systems.
 127.707 Security personnel.
 127.709 Protective enclosures.
 127.711 Communications.

Authority: 33 U.S.C. 1231; 49 CFR 1.46(n)(4).

Subpart A—General**§ 127.001 Applicability.**

(a) This part applies to the marine transfer area of new LNG waterfront facilities and to new construction in the marine transfer area of existing LNG waterfront facilities.

(b) Subparts A, D, E, F, and G and § 127.701 apply to the marine transfer area of existing LNG waterfront facilities.

(c) Section 127.007, paragraphs (c), (d), and (e), applies to the marine transfer area of existing structures.

§ 127.003 Incorporation by reference.

(a) Certain materials are incorporated by reference into this part with the approval of the Director of the Federal Register. The Office of the Federal Register publishes a table "Material Approved for Incorporation by Reference," which appears in the Finding Aids section of this volume. In that table is found citations to the particular sections of this part where the material is incorporated and the date of the approval by the Director of the Federal Register. To enforce any edition other than the one listed in paragraph (b) of this section, notice of change must be published in the Federal Register and the material made available. All

approved material is on file at the Office of the Federal Register, Washington, DC 20408, and at the U.S. Coast Guard, Port and Environmental Safety Division, Washington, DC 20593.

(b) The materials approved for incorporation by reference in this part are:

"American National Standards Institute", 1430 Broadway, New York, NY 10018

ANSI B31.3 Chemical Plant and Petroleum Refinery Piping, 1984,
 "National Fire Protection Association", Batterymarch Park, Quincy MA 02269

NFPA 10 Standard for Portable Fire Extinguishers, 1984

NFPA 30 Flammable and Combustible Liquids Code, 1984

NFPA 51B Standard for Fire Prevention in Use of Cutting and Welding Processes, 1984

NFPA 59A Standard for the Production, Storage and Handling of Liquefied Natural Gas (LNG), 1985

NFPA 70 National Electrical Code, 1984

NFPA 251 Standard Methods of Five Tests of Building Construction and Materials, 1985

§ 127.005 Definitions.

As used in this part:

"Captain of the Port" (COTP) means the Coast Guard officer designated by the Commandant to command a Captain of the Port Zone as described in Part 3 of this chapter, or an authorized representative.

"Commandant" means the Commandant of the U.S. Coast Guard or an authorized representative.

"Control room" means a space within the LNG waterfront facility from which facility operations are controlled.

"District Commander" means the Coast Guard officer designated by the Commandant to command a Coast Guard District as described in Part 3 of this chapter, or an authorized representative.

"Environmentally sensitive areas" includes public parks and recreation areas, wildlife and waterfowl refuges, historic sites, fishing grounds, and other protected areas.

"Existing" means constructed or being constructed under a contract awarded before (insert the effective date of these regulations).

"Fire endurance rating" means the duration for which an assembly or structural unit will contain a fire retain structural integrity when exposed to the temperatures specified in the standard time-temperature curve in NFPA 251.

"Impounding space" means a space formed by dikes and floors that confines a spill of LNG.

"Liquefied natural gas" (LNG) means a liquid or semisolid consisting mostly of methane and small quantities of ethane, propane, nitrogen, or other natural gases.

"Liquefied petroleum gas" (LPG) means a liquid consisting mostly of propane or butane or both.

"Loading flange" means the connection or group of connections in the cargo transfer pipeline on the facility that connects the facility pipeline to the vessel pipeline.

"LNG vessel" means a watercraft constructed or converted to carry LNG in bulk.

"LNG waterfront facility" (facility) means a waterfront facility, as defined in §126.01, at which LNG transfer operations are conducted.

"Marine transfer area" (area) means that portion between the vessel or where the vessel moors and the last manifold or valve immediately before the receiving tanks.

"Maximum allowable working pressure" (MAWP) means the maximum gauge pressure permissible at the top of equipment, containers, or pressure vessels while operating at design temperature.

"New" means constructed or being constructed under a contract awarded on or after (insert the effective date of these regulations).

"Persons in charge of transfer operations on the vessel" is the person designated the person in charge of cargo transfer under 46 CFR 154.1831.

"Substructure" means the deck of a pier or wharf and the structural components below that deck.

§ 127.007 Letter of intent.

(a) In order to obtain the Coast Guard's views and comments, an owner who intends to build a new LNG waterfront facility or the operator who plans new construction on an existing LNG waterfront facility, must submit a Letter of intent that meets paragraph (d) of this section to the COTP of the zone in which the facility is or will be located, at least 60 days before construction begins.

(b) The owner or operator of an existing facility shall submit a Letter of intent that meets paragraph (d) of this section to the COTP of the zone in which the facility is located by (insert a date 30 days after effective date).

(c) An owner or operator of an existing structure that has not transferred LNG within 12 consecutive months, shall submit a Letter of intent

that meets paragraph (d) of this section to the COTP of the zone in which the facility is located, at least 60 days before transferring LNG.

(d) Each Letter of intent must contain—

- (1) The name, address, and telephone number of the owner and operator;
- (2) The name, address, and telephone number of the facility;
- (3) The physical location of the facility;
- (4) A description of the facility;
- (5) The LNG vessels' characteristics and the frequency of LNG shipments to or from the facility;
- (6) Maps and charts showing waterway channels and identifying commercial, industrial, environmentally sensitive, and residential areas in and adjacent to the waterway within 40.2 kilometers (25 miles) of the facility; and
- (7) Information on the following, on or adjacent to the facility:
 - (i) Depths of the water.
 - (ii) Tidal range.
 - (iii) Protection from high seas.
 - (iv) Natural hazards, including reefs, rocks, and sandbars.
 - (v) Underwater pipelines and cables.
 - (vi) Distance of berthed vessel from the channel and the width of the channel.

(e) The owner or operator who submits a Letter of intent under paragraphs (a), (b), or (c), shall notify the COTP in writing within 15 days if—

- (1) There is any change in the information submitted under paragraph (d) of this section; or
- (2) No LNG transfer operations are scheduled within the next 12 months.

§ 127.009 Letter of recommendation.

After the COTP receives the Letter of intent, the COTP issues a Letter of recommendation to the owner or operator of the facility and to the state and local government agencies having jurisdiction, as to the suitability of the waterway for LNG marine traffic, based on the following factors:

- (a) The information submitted under § 127.007 (c)(3) through (c)(7).
- (b) Density and character of marine traffic in the waterway.
- (c) Locks, bridges, or other man-made obstructions in waterways.

Note.—The Coast Guard is authorized by law to establish water or waterfront safety zones, or other measures for limited, controlled, or conditional access and activity, when necessary for the protection of any vessel, structure, waters, or shore area.

§ 127.011 LNG waterfront facility inspections.

The operator shall ensure that the COTP or his representative is allowed to

make reasonable examinations and inspections to determine whether the facility meets this part.

§ 127.013 Suspension of transfer operations.

(a) The COTP may issue an order to the operator to suspend LNG transfer operations if the COTP finds any condition requiring immediate action to—

- (1) Prevent damage to, or the destruction of, any bridge or other structure on or in the navigable waters of the United States, or any land structure or shore area immediately adjacent to such waters; and
- (2) Protect the navigable waters and the resources therein from harm resulting from vessel or structure damage, destruction, or loss.

(b) Each order to suspend transfer operations issued under paragraph (a) of this section—

- (1) Is effective immediately;
- (2) Contains a statement of each condition requiring immediate action; and
- (3) Is withdrawn by the COTP whenever each condition is corrected or no longer exists.

§ 127.015 Appeals.

(a) Any person directly affected by an action taken under this part may request reconsideration by the Coast Guard officer responsible for that action.

(b) Except as provided under paragraph (e) of this section, any person not satisfied with a ruling made under the procedure contained in paragraph (a) of this section may—

(1) Appeal that ruling in writing to the Coast Guard District Commander of the district in which the action was taken; and

(2) Supply supporting documentation and evidence that the appellant wishes to have considered.

(c) The District Commander issues a ruling after reviewing the appeal submitted under paragraph (b) of this section. Except as provided under paragraph (e) of this section, any person not satisfied with this ruling may—

(1) Appeal that ruling in writing to the Chief, Office of Marine Environment and Systems, U.S. Coast Guard, Washington, DC 20593; and

(2) Supply supporting documentation and evidence that the appellant wishes to have considered.

(d) The Chief, Office of Marine Environment and Systems issues a ruling after reviewing the appeal submitted under paragraph (c) of this section, which is final agency action.

(e) If the delay in presenting a written appeal has an adverse impact on the

operations of the appellant, the appeal under paragraph (b) or (c) of this section—

- (1) May be presented orally; and
- (2) Must be submitted in writing within five days after the oral presentation—

(i) With the basis for the appeal and a summary of the material presented orally; and

(ii) To the same Coast Guard official who heard the oral presentation.

§ 127.017 Alternatives.

(a) The COTP may allow alternative procedures, methods, or equipment standards to be used by an operator instead of any requirements in this part if—

(1) The operator submits a written request for the alternative at least 30 days before facility operations under the alternative would begin, unless the COTP authorizes a shorter time; and

(2) The alternative provides at least the same degree of safety provided by the regulations in this part.

(b) The COTP approves or disapproves any alternative requested under paragraph (a) of this section—

- (1) In writing; or
- (2) Orally with subsequent written confirmation.

§ 127.019 Operations Manual and Emergency Manual: Procedures for examination.

(a) The owner or operator of an existing facility shall submit two copies of the *Operations Manual* and of the *Emergency Manual* by (insert a date that is 30 days after the effective date of these regulations) to the Captain of the Port of the zone in which the facility is located.

(b) The owner or operator of a new facility shall submit two copies of the *Operations Manual* and of the *Emergency Manual* at least 30 days before the first LNG transfer, to the Captain of the Port of the zone in which the facility is located.

(c) If the COTP finds that the *Operations Manual* meets § 127.305 and the *Emergency Manual* meets § 127.307, the Captain of the Port returns a copy to the owner or operator marked "Examined by the Coast Guard".

(d) If the COTP finds that the *Operations Manual* or the *Emergency Manual* does not meet this part, the Captain of the Port returns the manual with a statement of the reasons why it does not.

Subpart B—Design and Construction**§ 127.101 Design and construction: General.**

The area must meet the following criteria in NFPA 59A:

- (a) Chapter 2, Sections 2-1.2 and 2-3.
- (b) Chapter 6.
- (c) Chapter 7, Sections 7-6 and 7-7.
- (d) Chapter 8, except Sections 8-3, 8-5 and 8-7.2.

§ 127.103 Piers and wharves.

(a) If the facility is in a region subject to earthquakes, the piers and wharves in the area must be designed to resist earthquake forces.

(b) Substructures, except moorings and breasting dolphins, that support or are within 5 meters (16 feet) of any pipe or equipment containing LNG, or are within 15 meters (50 ft) of a loading flange, must—

- (1) Be made of concrete or steel; and
- (2) Have a fire endurance rating of not less than two hours.

(c) Direct combustion heating equipment must be more than 60 meters (200 feet) from any loading flange.

(d) LNG or LPG storage tanks located in the area must have a volume of 1.9 cubic meters (500 gallons) or less and be designed for—

- (1) Surge protection; or
- (2) Pump suction supply.

§ 127.105 Marine transfer area layout and spacing.

(a) LNG impounding spaces must be located so that the heat flux from a fire over the impounding spaces does not cause structural damage to an LNG vessel moored or berthed at the facility.

(b) Each LNG loading flange must be located at least 300 meters (983 feet) from the following which are primarily intended for the use of the general public or railways:

- (1) Each bridge crossing a navigable waterway.
- (2) Each entrance to any tunnel under a navigable waterway.

§ 127.107 Electrical power systems.

(a) The area must have a power system and a separate emergency power system, which function so that failure of one system does not affect the capability of the other system. Each system must meet the National Electrical Code, NFPA 70.

(b) The emergency power system must provide enough power of the operation of the—

- (1) Control room;
- (2) Communications equipment;
- (3) Firefighting equipment; and
- (4) Emergency lighting.

(c) If an auxiliary generator is used as an emergency power source, it must meet Section 700-12 of NFPA 70.

(d) Fixed electrical equipment and wiring within 5 meters (16 feet) of any LNG loading flange must meet the requirements of NFPA 70 for installation in Class I, Division 2, Group D hazardous locations.

(e) Fixed electrical equipment and wiring more than 5 meters (16 feet) from any LNG loading flange must meet Chapter 7 of NFPA 59A.

§ 127.109 Lighting systems.

(a) The area must have a lighting system and a separate emergency lighting system.

(b) All outdoor lighting in the area must be—

- (1) Explosion-proof as described in 46 CFR 111.105-9; and
- (2) Located or shielded so that it is not confused with any aids to navigation and does not interfere with navigation on the adjacent waterways.

(c) The lighting system must provide an average illumination on a horizontal plane one meter (3.3 feet) above the deck that is—

- (1) 54 lux (five foot-candles) at any loading flange; and
- (2) 11 lux (one foot-candle) at each work area.

(d) The emergency lighting system must provide lighting for the operation of the—

- (1) control room;
- (2) communications equipment; and
- (3) firefighting equipment.

§ 127.111 Communications systems.

(a) The area must have a ship-to-shore communication system and a separate emergency ship-to-shore communication system.

(b) Each ship-to-shore communication system must be a dedicated system that—

- (1) is intrinsically safe as described in 46 CFR 111.105-11(a);
- (2) meets the requirements in 46 CFR 111.105-15; and
- (3) allows voice communication

between the person in charge of transfer operations on the vessel, the person in charge of shoreside transfer operations, and personnel in the control room.

§ 127.113 Warning signs.

(a) The area must have warning signs that—

- (1) meet paragraph (b) of this section;
- (2) can be seen from the shore and the water; and
- (3) have the following text:

Warning
Dangerous Cargo
No Visitors

No Smoking
No Open Lights

(b) Each letter in the words on the sign must be—

- (1) Block style;
- (2) Black on a white background; and
- (3) 7.6 centimeters (3 inches) high.

Subpart C—Equipment**§ 127.201 Sensing and alarm systems.**

(a) Fixed sensors must have audio and visual alarms in the control room and audio alarms where the sensors are located.

(b) Fixed sensors that continuously monitor for LNG must—

- (1) Be in each enclosed area where vapor or gas may accumulate; and
- (2) Meet section 9-4 of NFPA 59A.

(c) Fixed sensors that continuously monitor for flame, heat, or products of combustion must—

- (1) Be in each location described in section 500-4 of NFPA 70 and each area in which flammable or combustible material is stored; and
- (2) Meet Section 9-4 of NFPA 59A.

§ 127.203 Portable gas detectors.

The area must have at least two portable gas detectors capable of measuring 0-100% of the lower flammable limit of methane.

§ 127.205 Emergency shutdown.

Each transfer system must have an emergency shutdown system that—

- (a) Can be activated manually; and
- (b) Is activated automatically when LNG concentrations in the area exceed 40% of the lower flammable limit.

§ 127.207 Warning alarms.

(a) The area must have a rotating or flashing amber light with a minimum effective flash intensity, in the horizontal plane, of 5000 candelas. At least 50% of the required effective flash intensity must be maintained in all directions from 1.0 degree above to 1.0 degree below the horizontal plane.

(b) The area must have a siren with a minimum 1/3-octave band sound pressure level at 1 meter of 125 decibels referenced to 0.0002 microbars. The siren must be located in the area so that the sound signal produced is audible over 360 degrees in a horizontal plane.

(c) Each light and siren must be located so that the warning alarm is not obstructed for a distance of 1.6 km (1 mile) in all directions.

Subpart D—Operations**§ 127.301 Persons in charge of shoreside transfer operations: Qualifications and certification.**

(a) No person may serve, and the operator of the facility may not use the services of any person, as a person in charge of shoreside transfer operations, unless that person—

- (1) Has at least 48 hours of LNG transfer experience at any facility;
 - (2) Knows the hazards of LNG;
 - (3) Knows the rules of this subpart; and
 - (4) Knows the procedures in the examined *Operations Manual* and the examined *Emergency Manual*.
- (b) Before a person in charge of shoreside transfer operations supervises a transfer, the operator shall certify in writing that the criteria in paragraph (a) of this section are met. The operator shall maintain a copy of each current certification available for inspection at the facility.

§ 127.303 Compliance with suspension order.

If an order to suspend is given to the operator or owner of the facility, no LNG transfer operations may be conducted at the facility until the order is withdrawn by the COTP.

§ 127.305 Operations Manual.

Each *Operations Manual* must contain—

- (a) A description of the transfer system in the area including mooring areas, transfer connections, control rooms, and diagrams of the piping and electrical systems;
- (b) The duties of each person assigned for transfer operations;
- (c) The maximum relief valve setting or maximum allowable working pressure of the transfer system;
- (d) The facility telephone numbers of facility supervisors, persons in charge of shoreside transfer operations, personnel on watch in the area, and security personnel;
- (e) A description of the security systems for the area;
- (f) The procedures for—
 - (1) Transfer operations including gauging, cool down, pumping, venting, and shutdown;
 - (2) Transfer operations start-up and shutdown;
 - (3) Security violations; and
 - (4) The communications systems; and
- (g) A description of the training programs established under § 127.501.

§ 127.307 Emergency Manual.

Each *Emergency Manual* must contain—

- (a) LNG release response procedures, including contacting local response organizations;
- (b) Emergency shutdown procedures;
- (c) A description of the fire equipment and systems and their operating procedures;
- (d) A description of the emergency lighting and emergency power systems;
- (e) The telephone numbers of local Coast Guard units, hospitals, fire departments, police departments, and other emergency response organizations;
- (f) If the facility has personnel shelters, the location of and provisions in each shelter;
- (g) First aid procedures and if there are first aid stations, the locations of each station; and
- (h) Emergency procedures for mooring and unmooring a vessel.

§ 127.309 Operations Manual and Emergency Manual: Use.

The operator shall ensure that—

- (a) LNG transfer operations are not conducted unless the facility has an examined *Operations Manual* and examined *Emergency Manual*;
- (b) Each transfer operation is conducted in accordance with the examined *Operations Manual*; and
- (c) Each emergency response is in accordance with the examined *Emergency Manual*.

§ 127.311 Motor vehicles.

- (a) The operator shall designate and mark parking spaces that—
- (1) Do not block fire lanes;
 - (2) Do not impede any exits;
 - (3) Are not located in any impounding space; and
 - (4) Are not within 15 meters (50 ft) of any storage tank or loading flange.
- (b) No person may stop or park a motor vehicle in a space in the area unless that space is designated a parking space.
- (c) No person may refuel any motor vehicle in the area.

§ 127.313 Bulk storage.

- (a) The operator shall ensure that only the following is stored in the area:
- (1) LNG.
 - (2) LPG.
 - (3) Vessel fuel.
 - (4) Oily waste from vessels.
 - (5) Solvents, lubricants, paints, and other fuels in the amount used for one day's operations and maintenance.
- (b) Flammable liquids must be stored in accordance with Chapter 4 of NFPA 30.

§ 127.315 Preliminary transfer inspection.

Before transferring LNG, the person in charge of shoreside transfer operations shall—

- (a) Inspect the transfer piping and equipment in the area and replace any worn or inoperable parts;
- (b) For each of the vessel's cargo tanks from which cargo will be transferred, note the pressure, temperature, density, and volume to ensure they are safe for transfer;
- (c) Review and agree with the person in charge of cargo transfer on the vessel to—
 - (1) The sequence of transfer operations;
 - (2) The transfer rate;
 - (3) The duties, location, and watches of each person assigned for transfer operations; and
 - (4) Emergency procedures from the examined *Emergency Manual*;
- (d) Ensure that transfer connections allow the vessel to move to the limits of its moorings without placing strain on the loading arm or transfer piping system;
- (e) Ensure that each part of the transfer system is aligned to allow the flow of LNG to the desired location;
- (f) Ensure that warning signs are displayed that meet § 127.113;
- (g) Eliminate all ignition sources in the area;
- (h) Ensure that personnel are on duty in accordance with the examined *Operations Manual*; and
- (i) Test the following to determine that they are operable:
 - (1) The sensing and alarm systems under § 127.201.
 - (2) The emergency shutdown under § 127.205.
 - (3) The communication systems under § 127.111.

§ 127.317 Declaration of inspection.

- (a) After the preliminary transfer inspection under § 127.315 has been satisfactorily completed, the person in charge of shoreside transfer operations shall ensure that no person transfers LNG until a Declaration of Inspection that meets paragraph (c) of this section is executed and signed in duplicate.
- (b) The person in charge of shoreside transfer operations shall give one signed copy of the Declaration of Inspection to the person in charge of transfer operations on the vessel, and shall retain one signed copy at the facility for 30 days after completion of the transfer.
- (c) Each Declaration of Inspection must contain—
- (1) The name of the vessel and the facility;
 - (2) The date and time that transfer operations began;
 - (3) A list of the requirements in § 127.315 with the initials of the person in charge of shoreside transfer

operations after each requirement, indicating that the requirement is met;

(4) The signature of the person in charge of shoreside transfer operations and the date and time of signing, indicating that he or she is ready to begin transfer operations; and

(5) The signature of each relief person in charge and the date and time of each relief.

§ 127.319 LNG-transfer.

During the LNG transfer operations, the following must be met:

(a) The operator of the facility shall ensure that—

(1) The area is under the supervision of a person in charge, who has no other assigned duties during the transfer operation;

(2) Personnel transferring fuel or oily waste are not involved in LNG transfer; and

(3) No vessels are moored outboard of any LNG vessel.

(b) The person in charge of shoreside transfer operations shall—

(1) Be in continuous communication with the person in charge of transfer operations on the vessel;

(2) Ensure that an inspection of the transfer piping and equipment in the area for leaks, frost, defects, and other symptoms of safety and operational problems is conducted at least once every transfer.

(3) Immediately discontinue transfer operations during—

(i) Electrical storms;

(ii) Fires in the area; and

(iii) Uncontrolled fires within 4.8 kilometers (3 miles) of the periphery of the area; and

(4) Ensure that the lighting systems under § 127.109 are turned on between sunset and sunrise.

Note.—Vessel transfer requirements are published in 46 CFR Part 154.

§ 127.321 Release of LNG.

(a) The operator of the facility shall ensure that—

(1) No person releases LNG into the navigable waters of the United States; and

(2) If there is an accidental release of LNG, vessels near the facility are notified of the release by the sounding of warning alarms.

(b) If there is an accidental release of LNG, the person in charge of shoreside transfer operations shall—

(1) Immediately notify the person in charge of cargo transfer on the vessel of the intent to shutdown;

(2) Shutdown transfer operations;

(3) Notify the COTP of the release; and

(4) Not resume transfer operations until authorized by the COTP.

Subpart E—Maintenance

§ 127.401 Maintenance: General.

The operator of the facility shall ensure that the equipment required under this part is maintained in a safe condition so that it does not cause a release or ignition of LNG.

§ 127.403 Inspections.

The operator shall conduct a visual inspection for defects of each pressure-relief device not capable of being tested, at least once every 12 months, and make all necessary repairs.

§ 127.405 Repairs.

The operator shall ensure that—

(a) Equipment repairs are made so that—

(1) The equipment continues to meet the requirements in subparts B, C, G, and H of this part and in NFPA 59A; and

(2) Safety in the area is not compromised; and

(b) Welding is done in accordance with NFPA 51B and NFPA 59A, Chapter 6, Section 6-3.4.

§ 127.407 Testing.

(a) The operator shall pressure test under paragraph (b) of this section the transfer system, including piping, hoses, and loading arms, and verify the set pressure of the safety and relief valves—

(1) After they are altered;

(2) After they are repaired;

(3) After any increase in the MAWP;

or

(4) At least once every 12 months.

(b) The pressure for the transfer system test under paragraph (a) must be at 1 and ½ times the MAWP and be held for a minimum of 30 minutes.

§ 127.409 Records.

(a) The operator shall keep on file the following information:

(1) A description of the components tested under § 127.407.

(2) The date and results of the test under paragraph (a).

(3) A description of any corrective action taken after the test.

(b) The information required by this section must be retained for 24 months.

Subpart F—Personnel Training

§ 127.501 Training: General

The operator shall ensure that each of the following is met by (insert a date 180 days after effective date) or before the employee begins assigned duties:

(a) All full-time employees have at least the following training:

(1) LNG firefighting procedures.

(2) LNG properties and hazards.

(b) In addition to the training under paragraph (a) of this section, each person assigned for transfer operations has the following training:

(1) Orientation on the examined *Operations Manual* and examined *Emergency Manual*.

(2) LNG firefighting strategies and tactics.

(3) Security procedures.

(4) LNG vessel orientation.

(5) LNG release response procedures.

(6) First aid for—

(i) Treatment of frostbite;

(ii) Treatment of burns;

(iii) Cardio-pulmonary resuscitation; and

(iv) Transportation injured personnel.

(c) The personnel who received training under paragraphs (a) and (b) receive refresher training in the same subjects at least once every five years.

Subpart G—Firefighting

Fire Equipment

§ 127.601 Fire equipment: General.

(a) Fire equipment and systems in the area provided in addition to the requirements in this subpart must meet the requirements of this subpart.

(b) The following must be red or some other conspicuous color and be in locations that are readily accessible:

(1) Hydrants and standpipes.

(2) Hose stations.

(3) Portable fire extinguishers.

(4) Fire monitors.

(c) Fire equipment, if applicable, must bear the approval of Underwriters Laboratories, Inc., the Factory Mutual Research Corp., or the Coast Guard.

§ 127.603 Portable fire extinguishers.

Each area must have—

(a) Portable fire extinguishers that meet 9-6.1 of NFPA 59A and Chapter 3 of NFPA 10; and

(b) At least one portable fire extinguisher in each designated parking area.

§ 127.605 Emergency outfits.

(a) Each area must have an emergency outfit for each person in the area whose duties include fighting fires; but, there must be at least two emergency outfits in the area. Each emergency outfit must include—

(1) One explosion-proof flashlight;

(2) Boots and gloves of rubber or other electrically nonconducting material;

(3) A rigid helmet that protects the head against impact;

(4) Water resistant clothing that also protects the body against fire; and

(5) U.S. Bureau of Mines approved self-contained breathing apparatus.

(b) Emergency outfits under paragraph (a) of this section must be in locations that are readily accessible and marked for easy recognition.

§ 127.607 Fire main systems.

(a) Each area must have a fire main system that provides at least two water streams to each part of the area, one of which must be from a single length of hose or from a fire monitor.

(b) The fire main must have at least one isolation valve at each branch connection and at least one isolation valve downstream of each branch connection to isolate damaged sections.

(c) The fire main system must have the capacity to supply—

(1) Simultaneously all fire hydrants, standpipes, and fire monitors in the system; and

(2) At a Pitot tube pressure of 618 kilonewtons per square meter (75 p.s.i.) the two outlets having the greatest pressure drop between the source of water and the hose or monitor nozzle.

(d) If the source of water for the fire main system is capable of supplying a pressure greater than the system's design working pressure, the system must have at least one pressure relief device.

(e) Each fire hydrant or standpipe must have at least one length of hose of sufficient length to meet paragraph (a) of this section.

(f) Each length of hose must—

(1) Be 1½ inches in diameter and 30.5 meters (100 feet) or less in length;

(2) Be on a hose rack or reel; and

(3) Have a Coast Guard approved combination solid stream and water spray fire hose nozzle.

§ 127.609 Dry chemical systems.

(a) Each area must have a dry chemical system. This system must provide at least two dry chemical discharges to each part of the area from separate hoses or monitors, except one of the dry chemical discharges for the

area surrounding the loading flange must be—

(1) From a monitor; and

(2) Actuated and, except for pre-aimed monitors, controlled from a location other than the monitor location.

(b) The dry chemical system must have the capacity to supply simultaneously or sequentially all hoses or monitors in the system for 45 seconds.

(c) Each dry chemical hose station must have one length of hose that—

(1) Is 30.5 meters (100 feet) or less in length;

(2) Is on a hose rack or reel; and

(3) Has a nozzle with a valve that starts and stops the flow of dry chemical.

§ 127.611 International shore connection.

The area must have a Coast Guard approved international shore connection, a 2½ inch fire hydrant, and sufficient 2½ inch hose to connect the fire hydrant to the international shore connection on the vessel.

Fire Protection

§ 127.613 Smoking.

The operator shall ensure that no person smokes when there is LNG in the area.

§ 127.615 Fires.

The operator shall ensure that there are no fires when there is LNG in the area.

§ 127.617 Hotwork.

The operator shall ensure that no person conducts welding, torch cutting, or other hotwork unless that person has a permit from the COTP.

Subpart H—Security

§ 127.701 Security on existing facilities.

The operator shall ensure that any security procedure and arrangement on existing facilities, that were in use when LNG transfer operations were last conducted, be continued and maintained, or upgraded, whenever LNG transfer operations are conducted.

§ 127.703 Access to the marine transfer area.

The operator shall ensure that—

(a) Access to the area from the shoreside and the waterside is limited to Coast Guard personnel, personnel who work in the area including persons assigned for transfer operations, vessel personnel, and delivery and service personnel in the course of their business; and

(b) No person is allowed into the area unless that person is identified by a facility-issued identification card or other identification card displaying his or her photograph.

§ 127.705 Security systems.

The operator shall ensure that security patrols of the area are conducted once every hour, or that a manned television monitoring system is used, to detect—

(a) Unauthorized personnel;

(b) Fires; and

(c) LNG releases.

§ 127.707 Security personnel.

The operator shall ensure that no person is assigned security patrol duty unless that person has been instructed on security violation procedures.

§ 127.709 Protective enclosures.

The following must be within a fence or wall that prevents trespassing:

(a) Impounding spaces.

(b) Control rooms and stations.

(c) Power sources.

§ 127.711 Communications.

The area must have a means of direct communications between the security patrol and other operating or security personnel on duty on the facility.

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