

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

[Docket No. USCG-2013-1084]

Policy Letters: Guidance for the Use of Liquefied Natural Gas as a Marine Fuel.

AGENCY: Coast Guard, DHS.

ACTION: Notice of availability.

SUMMARY: On February 7, 2014, the Coast Guard announced the availability, in the docket, of two draft policy letters for which it sought public comment. This notice announces the availability of the finalized Coast Guard policy letters, including explanations of changes made to the policy letters and enclosures based on the public comments received. The first policy letter provides voluntary guidance for liquefied natural gas (LNG) fuel transfer operations on vessels using natural gas as fuel in U.S. waters, and training of personnel on those vessels. It recommends transfer and personnel training measures that we believe will achieve a level of safety that is at least equivalent to that provided for traditional fueled vessels. It applies to vessels equipped to receive LNG for use as fuel, but not to vessels regulated as LNG carriers that utilize boil-off gas as fuel. The second policy letter discusses voluntary

guidance and existing regulations applicable to vessels and waterfront facilities conducting LNG marine fuel transfer (bunkering) operations. The second policy letter provides voluntary guidance on safety, security, and risk assessment measures we believe will enhance safe LNG bunkering operations. Both policy letters are available on the public docket. They have been updated to reflect publication numbers of the current year. Accordingly, as discussed in this notice, Policy Letter 01-14 became Policy Letter 01-15 and Policy Letter 02-14 became Policy Letter 02-15.

FOR FURTHER INFORMATION CONTACT: If you have questions on this notice, call or e-mail Ken Smith, Vessel and Facility Operating Standards Division (CG-OES-2), U.S. Coast Guard; telephone 202-372-1413, e-mail Ken.A.Smith@uscg.mil. If you have questions on viewing or submitting material to the docket, call Cheryl Collins, Program Manager, Docket Operations, telephone 202-366-9826.

SUPPLEMENTARY INFORMATION:

Viewing material in the docket: To view the policy letters and related material, go to <http://www.regulations.gov>, type the docket number (USCG-2013-1084) in the "SEARCH" box and click "SEARCH." Click on "Open Docket Folder" on the line associated with this notice. If you do not have access to the internet, you may view the docket online by visiting the Docket Management

facility in Room W12-140 on the ground floor of the Department of Transportation West Building, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. We have an agreement with the Department of Transportation to use the Docket Management Facility.

Privacy Act: Anyone can search the electronic form of comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review a Privacy Act, system of records notice regarding our public dockets in the January 17, 2008, issue of the Federal Register (73 FR 3316).

Background and Purpose

The shipping industry is exploring conversion from oil-based fuel to cleaner burning natural gas, because the use of natural gas as fuel would substantially reduce carbon emissions, sulfur emissions, and nitrogen oxide emissions. This natural gas fuel would be stored on and transferred to vessels in the form of liquefied natural gas (LNG). Existing regulations cover design, equipment, operations, and training of personnel on vessels that carry LNG as cargo and at waterfront facilities

that handle LNG in bulk. They also cover conventional oil fuel transfer operations, but do not address LNG transferred as fuel.¹

On February 7, 2014, the Coast Guard published two draft policy letters (CG-OES 01-14 and CG-OES 02-14), requesting comments, that recommended the transfer procedures and other operating guidelines for vessels and waterfront facilities providing LNG to vessels for use as fuel and for vessels operating in U.S. waters that will be fueled with natural gas that will be stored onboard as LNG. The Coast Guard has revised these policy letters based on comments received and now makes the final policy letters available to the public.

The policy letters and voluntary guidance do not apply to vessels regulated as LNG carriers that utilize their boil-off gas as fuel. They also do not provide guidance on vessel design criteria for natural gas fuel systems or design of vessels providing LNG for use as fuel. If you have questions about the design of these systems, please contact the Coast Guard's Office of Design and Engineering Standards (CG-ENG, formerly CG-521). See "For Further Information Contact" section for contact information.

Discussion

The Coast Guard received 27 letters from the public containing a combined total of 185 individual comments which are

¹ 33 CFR Parts 127, 155 and 156; 46 CFR Parts 10-15, 30-39, and 154.

discussed below. We discuss more fully the changes we made to the policy letters in response to comments.

All letters received were generally supportive of the Coast Guard's effort to provide guidance on the use and transfer of LNG as a marine fuel and the Coast Guard appreciates this important feedback.

We also received various comments recommending changes that cannot be made in a policy document because the Coast Guard would need to undergo rulemaking to make these recommended changes enforceable. For example, one submitter suggested that we provide specific details concerning the information that risk assessments should contain. Another submitter suggested that we provide common checklists for industry to follow when conducting bunkering operations. The Coast Guard will consider these comments and determine whether any further action is necessary. Additionally, the Coast Guard received comments on matters unrelated to the two policy letters discussed in this notice. Those comments have been reviewed but did not effect any changes to these policy letters. Examples of some of the comments we received pertaining to design were related to venting arrangements, LNG tank design, and gas detection.

Vessel design issues relating to the technical aspects and problems inherent in vessel design are not discussed in Policy Letters 01-15 and 02-15. We do not intend to include

vessel design recommendations or equivalencies in either policy letter and thus comments requesting design related revisions cannot be incorporated. Information concerning design criteria for natural gas fuel systems can be found in CG-521 Policy Letter 01-12, "Equivalency Determination - Design Criteria For Natural Gas Fuel Systems," which can be viewed at the following location: <http://www.uscg.mil/hq/cg5/cg521/docs/CG-521.PolicyLetter.01-12.pdf>

The Coast Guard also identified certain non-substantive recommendations in comments. Many of these are useful and have been incorporated where appropriate.

Six comments were submitted recommending that Compressed Natural Gas (CNG) and other alternative fuels be addressed in our policy letters. The Coast Guard believes it is better at this time to evaluate other alternative fuels on a case-by-case basis and will continue to gather information on how these alternative fuels are used to determine whether guidance is necessary and appropriate. One submitter suggested that it would be useful if we added language indicating how LNG differs from other "conventional" liquid hydrocarbon fuels. The Coast Guard agrees and added additional information in Policy Letter 01-15, Enclosure (1).

Five comments were submitted on the topic of hot work. Based on the comments received, the Coast Guard revised its

discussion on hot work in Policy Letter 01-15, Enclosure (1) to further clarify that hot work must be conducted in accordance with the existing regulations to which vessels are inspected. Where no regulations are specified, we recommend that the regulations in 46 CFR 91.50-1 be followed.

Six comments were received on the Coast Guard's use of the term "in bulk." Three comments asked whether LNG packaged in ISO tanktainers, and loaded on a vessel, is not "in bulk" and therefore not subject to 33 CFR Part 127. The Coast Guard confirms that LNG in packaged form such as LNG in ISO tanktainers is not considered an "in bulk" shipment and the facility where those packages are loaded does not need to comply with 33 CFR Part 127. The Coast Guard further clarifies that LNG in ISO tanktainers is a hazardous material in packaged form and as such must be loaded from a facility that complies with 33 CFR Part 126. Three additional comments requested clarification on the Coast Guard's definition of the term "bulk." In response to these requests, the Coast Guard clarifies in Policy Letter 01-15, Enclosure (1) that "bulk" has the meaning defined in the Marine Safety Manual as a material that is transported on board a vessel without mark or count and which is directly loaded into a hold or tank on a vessel without containers or wrappers.

Six comments were received on LNG tank truck operations. Three spoke to matters involving the driving and transfer of LNG from tank trucks directly on a vessel, and one wanted to know why the Coast Guard doesn't discuss the activity. The Coast Guard does not discuss this type of operation because the operation is not considered as safe as other forms of transfer operations available. Driving LNG tank trucks aboard a vessel and conducting LNG transfer operations while aboard is considered to be a transfer involving a greater risk than other forms of LNG transfers because vessels and LNG tank trucks cannot remove themselves from the area in the event of an emergency. The Coast Guard does not wish to promote the operation in general, but remains open to evaluating requests on a case-by-case basis. One submitter requested to know if all of 33 CFR Part 127 would apply to LNG tank truck and rail car transfers. As discussed in Enclosure 1 of Policy Letter 02-15, existing regulatory standards may not be appropriate for small scale (e.g. LNG fuel transfer) operations and the Coast Guard Captain of the Port (COTP) may consider alternatives under 33 CFR 127.017.

Five comments were received concerning ISO type tanks. One submitter noted that ISO tanks need to be properly approved and designed and are not as robust as type "C" tanks. The Coast Guard notes that LNG in portable tanks must meet specifications

outlined by the Department of Transportation for transport and carriage of hazardous materials in accordance with the Hazardous Material Regulations contained in Title 49 of the US Code of Federal Regulations. The Coast Guard Office of Design and Engineering (CG-ENG) and/or the Marine Safety Center will evaluate as part of their plan review and approval process the design and construction of tanks used to store LNG as fuel on board U.S. vessels.

Four comments were received concerning guidance to the COTP for considering alternatives to the requirements in 33 CFR Part 127. Of those comments received, two comments also recommended Coast Guard Headquarters oversight so as to ensure greater consistency from port to port. The Coast Guard recognizes the need and desire for consistency from port to port and throughout the Coast Guard. To help COTPs understand alternatives which may be considered for the requirements in 33 CFR Part 127, we have added a new enclosure. Enclosure (4) to Policy letter 02-15 has been added to provide COTPs with guidance as to alternatives which may be considered in lieu of the requirements of 33 CFR Part 127 for LNG fuel facilities. Through publication of these policy letters and continued work within the Coast Guard, we hope to provide consistent application of regulations and policies for LNG operations throughout the country.

Ten comments were received on the topic of conducting Risk Assessments. One of the submitters recommended we add more wording concerning identification of hazards (HAZID's), operational hazards (HAZOP's) and quantitative risk assessments (QRA's). The Coast Guard agrees and added additional guidance and information concerning the need to conduct risk assessments. We have revised Enclosure 1 of Policy Letter 01-15 and Enclosures 1 and 2 of Policy Letter 02-15 to include more information on recommendations for risk assessments established by recognized industry organizations. Finally, one submitter stated that there is no clearly defined or broadly accepted standard for evaluating risk assessments and noted that NFPA standard 551 has some guidance which should be considered. For the purpose of harmonizing with the international community, we recommend and reference in the policy letters the publications of the classification society Det Norske Veritas - Germanischer Lloyd (DNV-GL) and the International Organization for Standardization (ISO) as guides which should be used to conduct risk assessments.

The Coast Guard received twelve comments on training and drills. One submitter indicated that the Coast Guard should establish and specify definite training intervals in order to avoid differing interpretations. The Coast Guard agrees that guidance on appropriate intervals would be helpful and suggests

as an example that the drills be conducted quarterly. One submitter indicated that they strongly support having defined training requirements and believe this will significantly contribute to a safer industry. The Coast Guard agrees. The amendments to this policy include recommended training provisions. This guidance identifies a two-tier system - basic and advanced training that companies may use to structure their training. In addition, the company is also responsible for the vessel familiarization of the crew members which is ship and fuel specific and tailored to the each mariner's onboard duties. The recommendations are consistent with the proposed International Maritime Organization (IMO) "Interim guidance on training for seafarers on board ships using gases or other low-flashpoint fuels", STCW.7/Circ.23, the draft amendments to the STCW Convention, and the MERPAC recommendations on this issue. The Coast Guard has added a new Enclosure (3) to Policy Letter 01-15 which is based upon "Interim guidance on training for seafarers on board ships using gases or other low-flashpoint fuels", STCW.7/Circ.23. STCW.7/Circ.23 is the final version of HTW 1/WP.3, Annex 5 that is referenced by the submitters. Another submitter also indicated they believed the Coast Guard should ensure the transitional provisions are followed as an interim measure until relevant STCW requirements come into force to allow for initial personnel training for the new technology.

The Coast Guard agrees and is recommending interim steps as part of this policy letter to help ensure an orderly transition to future mandatory requirements. One submitter suggested that Enclosure (2) of Policy Letter 01-14 be deleted in its entirety because the guidelines contained in Resolution MSC.285(86) are expected to be superseded by new interim guidance recommended in HTW 1/WP.3, Annex 5 once the guidance is adopted by MSC. The Coast Guard agrees in part. Enclosure 2 repeats Chapter 8 of IMO Resolution MSC.285(86), "Interim guidelines on safety for natural gas-fuelled engine installations in ships," which contains both training and operational components. We've retained the operational components from Enclosure 2 and replaced the training components with the product from STCW.7/Circ.23, "Interim guidance on training for seafarers on board ships using gases or other low-flashpoint fuels" as Enclosure (3). STCW.7/Circ.23 is the current IMO circular which is based upon the HTW 1/WP.3, Annex 5 that is being referenced by the submitters. One submitter recommended that the Coast Guard work towards approving training courses that meet the proposed requirements of part A (Annex 4) of HTW 1/WP.3 and look to begin issuing endorsements as quickly as possible. The Coast Guard agrees in principle but is unable to approve courses or issue endorsements until enabling regulations are in place. However, the Coast Guard is endeavoring to provide within CG-OES

Policy Letter 01-15, interim guidance that can be used by maritime training providers, maritime companies and mariners to develop training courses and will review courses submitted on a voluntary basis that are designed to meet the training guidance outlined in Enclosure (3). The Coast Guard will issue a letter to maritime training providers attesting to the Coast Guard's review and conformance of these courses with the training recommended in this guidance. One submitter additionally noted that the various means of transfer would require various levels of qualification and training specific to transfers. The Coast Guard agrees that training guidelines would be helpful to companies involved in transfers. The Coast Guard has expanded the training guidelines in line with work currently ongoing at IMO and MERPAC recommendations. MERPAC provided recommendations on the content of the training, transitional provisions, and the proof of training. Their recommendations are included in the revised policy letter. As for mariners holding tankerman PIC (LG), tankerman-engineer (LG) and tankerman assistant (LG) endorsements, transition requirements have also been addressed.

One submitter presumed that the Coast Guard will not require a special endorsement on a license or Merchant Mariner Document (MMD) for mariners serving aboard an LNG powered vessel other than the PIC, who must hold a proper endorsement in order to conduct the transfer operation. The submitter also stated

that the policy letter was silent as to the level of competency that each company must provide for other shipboard personnel involved in LNG bunkering operations. In response, the Coast Guard has expanded the training section of the policy letter to include recommended training for members of the vessel's crew who have safety responsibilities in regard to the gases or low flashpoint fuels being used and that documentary evidence such as course completion certificates, company letters, etc., should be issued indicating that the holder has successfully completed the basic or advanced training, as appropriate - See Enclosure 3 of Policy Letter 01-15. One submitter indicated that care should be taken to assure that training for personnel on board vessels using gas fuels are differentiated from a full tankerman (LG endorsement) as appropriate and that referencing the parts of 46 CFR that are for Tankerman should be eliminated. The Coast Guard agrees that vessel personnel on vessels using gases and low flashpoint fuels should be differentiated from full tankerman. As a result, recommendations specific to their training have been provided in Enclosure (3) accordingly.

The Coast Guard received three comments concerning PICs. One submitter indicated that the Coast Guard needs to clarify the meaning of the word "enough" where it is stated that, "...there must be enough Tankerman-PICs on duty..." noting that the word "enough" is too vague. The Coast Guard notes the

submitters concern, and understands that the term may be ambiguous. However, the term is carried forth from the existing regulations for cargo handling operations in 46 CFR 35.35-1 allowing flexibility to owners, managing operators, masters, and PICs in determining the number of qualified personnel needed to safely transfer liquid cargo based on the details of a specific transfer operation. Enclosure 2 of Policy Letter 02-15, pertaining to tank vessels transferring LNG, remains unchanged in this regard and points to the regulations in 46 CFR 35.35-1 and 154.1831 outlining the qualifications for personnel involved in liquid cargo transfer. However, aboard the receiving vessel that uses gases or low flashpoint fuels, the Coast Guard recommends in Enclosure (1) of Policy Letter 01-15, that the Master of a vessel using LNG as fuel should ensure that all personnel involved with LNG fuel use, transfer, or emergency response meet the standards of competence or advanced standards of competence outlined in Enclosure (3) of Policy Letter 01-15 for the duties to which they are assigned. One submitter noted that both the receiving vessel and supplier of LNG have PICs but our policy letters did not discuss an overall PIC, and requested to know who the overall PIC is. The Coast Guard does not discuss designation of an overall PIC, because the Coast Guard does not believe an overall PIC is necessary. Similar to conventional fuel transfer operations, no one individual is

designated as having overall control and responsibility for the transfer. Each PIC is responsible for their part of the transfer operation (supplier and receiver) and each side of the transfer should have a means to stop the transfer in the event of an emergency (See 33 CFR 127.205 and 155.780). Both supplier and receiver must have a means for dedicated voice communication with each other in order to maintain oversight and control of LNG tanks and transfer lines (See 33 CFR 127.111 and 155.785). Given that personnel on either side of the transfer may not be familiar or experienced with equipment on the other side, it would be improper to assign one entity as being in charge overall. For this reason, the transfer operation should be an event highly coordinated by both PICs. One submitter suggested the Coast Guard add three additional points covering PIC responsibilities - "Establishment of safety zone encompassing both supplier and receiving vessel," "Emergency response personnel defined and readiness," and "Monitoring of climatic conditions prior to and during transfer operations." The Coast Guard agrees in part and has modified the section in Enclosure (1) of Policy Letter 01-15 discussing PIC responsibilities to include checking for climatic conditions and setting safety and security areas around the LNG transfer area. Information related to emergency response is covered in item 2 of the same section.

Two comments were submitted on portable gas detectors. Both expressed a belief that it was unnecessary for all personnel involved in an LNG transfer to have a portable gas detector and suggested that the policy letter align with existing regulations (See 33 CFR 127.203 and 46 CFR 154.1345) which require at least 2 portable gas detectors in the marine transfer area. The Coast Guard agrees and has modified the policy letters to align with existing regulations.

Eight comments were received concerning simultaneous operations. All but one supported the need to conduct simultaneous operations. The one comment submitted against simultaneous operations stated that simultaneous operations create a significant risk factor, dramatically increasing the likelihood of a casualty while fueling. The Coast Guard agrees that simultaneous operations may introduce increased risk, but believes that performance of a risk analysis and incorporation of risk mitigation measures can be useful toward decreasing the likelihood of a casualty occurring while fueling. One comment stated that simultaneous operations should not be treated any differently than current fueling operations. One comment indicated that simultaneous operations should only be allowed after a detailed risk analysis and dispersion analysis are completed. Two comments indicated the need to have a definitive statement that the Coast Guard recognizes the need to allow

simultaneous operations. The Coast Guard agrees with the majority of commenters and has modified the discussion of simultaneous operations in Policy Letter 01-15, Enclosure (1) to include a more definitive statement concerning the need for considering simultaneous operations and identifies recommended industry standards which may be used by facility owners to conduct risk assessments. The Coast Guard does not wish to specify what operations may or may not be conducted simultaneously while LNG transfer operations are in progress and the COTP will evaluate each proposal on a case-by-case basis based on the specific hazards involved.

Three comments were submitted on emergency shutdown devices (ESD). One submitter said all ESD components are to be tested no more than 24 hours before commencement of the actual bunkering operation and that the tests should be documented in accordance with the bunkering procedure. The Coast Guard agrees. In accordance with 33 CFR 127.315(i), and 156.120(r), the ESD system is currently required to be tested by the PIC prior to transfer which should be well within the 24 hour period suggested. One submitter suggested that there could be an exemption for testing bunker tanker ESD equipment, provided evidence of regular testing is available or alternative requirements are deemed as an acceptable equivalence. The Coast Guard disagrees. As noted previously, testing of the ESD system

must be conducted by the PIC prior to the transfer as required by existing regulations 33 CFR 127.315(i), and 156.120(r). One submitter suggested that automatic activation of the ESD system due to a gas detection alarm should be reconsidered noting that gas detection systems have been prone to false alarms, particularly if located in humid areas, and repeated shutdowns due to erroneous alarms could create an unanticipated hazard. The Coast Guard is unaware of this being a widespread problem attributed to the performance of all gas detection systems available on the market. However, we have amended Policy Letter 01-15, Enclosure (1) such that gas detection is one of eight items that can be considered as a means to activate the ESD system.

Two comments were received on checklists. One commenter indicated that compatibility between the LNG supplier and the vessel receiving LNG must be ensured in terms of LNG transfer system design, operational manuals, emergency response procedures and a common checklist for the LNG transfer operation. Another comment requested that we consider adopting a professional industry organization's bunker checklists into our policy letters. The Coast Guard agrees that the use of checklists is valuable. We have provided a hyperlink in our policy letters recommending that owners and operators involved

in LNG transfer operations consider using checklists in order to help globally standardize LNG transfer operations.

Five comments were submitted concerning hazard zones, safety distances, and transfer areas. One submitter questioned whether or not the transfer area is considered to be a hazardous area and asserted that no ignition sources should exist in the transfer area. The Coast Guard agrees and confirms that the transfer area is considered to be a hazardous area. Details concerning removal of ignition sources associated with LNG supply are addressed in Policy Letter 02-15 which focuses on vessels and facilities providing LNG as fuel. One submitter noted that we refer to transfer area and hazardous area, but believed that consideration on 'Determination of safety and security zones' should be given. They also pointed out a key aspect with regard to the responsibility of the PIC is to establish the exchange of sufficient information to allow completion of a Declaration of Security (if required), agreement on how and between whom, communications regarding security that are to be made and actions to be taken in the event of a breach of security. Another submitter commented that there should be a discussion about hazardous areas and safety and security areas around the LNG transfer area. The Coast Guard agrees and has added a new paragraph discussing the items in Enclosure (1) of Policy Letter 01-15. One additional submitter stated that

advice needs to be given regarding safety distances at different transfer rates, due to increasing "largest credible spills" and that dispersion analysis needs to be included. The Coast Guard agrees with the need to provide additional information concerning safety and security areas and has added information in Policy Letter 01-15, Enclosure (1) indicating they should be established in accordance with industry standards established by the International Organization for Standardization (ISO) which is a recognized organization that has published information related to determining the size of safety and security areas around LNG transfer points. The Coast Guard doesn't agree with the need to require a declaration of security at this time, and notes that existing regulations concerning the declaration of inspection (33 CFR 127.317, and 33 CFR 156.150) require PICs to conduct a series of checks before transfer operations, including ensuring that communications are operable between PICs involved in the transfer. The Coast Guard agrees that breaches in safety and security areas should be evaluated and has included a recommendation that a contingency plan be developed concerning how to handle and respond to them. One submitter stated that consideration should be given to include the scope for interaction of a vessel's hazardous areas, emergency response equipment (firefighting, mechanical ventilation, etc.) emergency response procedures and linked ESD systems. The Coast Guard

agrees. These items should be considered as part of the compatibility assessment we recommend to be conducted between suppliers and receivers of LNG. We also recommend that emergency response manuals be developed and provide a list of recommended information they should contain.

Four comments were submitted concerning pipelines. One comment suggested that we delete references to bonding of pipelines in Policy Letter 01-14, Enclosure (1) in the section discussing detailed diagrams of the transfer area. The submitter indicated it was not clear how this would be shown on a diagram. The Coast Guard agrees and has removed the item as suggested. One submitter addressed the discussion on, "Conduct before a LNG Fuel Transfer" under Regulations and Recommendations for Vessels Bunkering LNG, of Enclosure (2) to CG-OES Policy Letter No. 02-14. The submitter noted the policy letter states that before transferring LNG to a vessel for use of gas as fuel, the PIC for transferring LNG should inspect the accessible portions of the transfer piping system and equipment to be used during the transfer and ensure that any worn or inoperable parts are replaced and any leaks are identified. The Coast Guard agrees and has added an item recommending that the transfer piping be tested for leaks prior to the transfer of LNG. Finally, one comment was received concerning Policy Letter 02-14, Enclosure (2) section discussing, "Conduct after a

LNG Fuel Transfer." The submitter requested adding a requirement to ensure that transfer hoses, manifolds, and associated piping are purged so that natural gas levels are below the lower flammability level. The Coast Guard has amended the section to recommend these types of safety measures.

We received one comment on loading flanges. The submitter indicated the existing regulations contain seemingly contradictory provisions which could complicate the siting, permitting and operation of such facilities. The submitter noted that Part 127 and Part 193 contain differing requirements in terms of the location of LNG loading flanges in relation to nearby bridges. The Coast Guard understands the concerns, but notes that any correction to these regulations would need to go through the Department of Transportation or USCG rulemaking process. Therefore, the noted discrepancies cannot be rectified through these policy letters.

We received one comment concerning transfer hoses. The submitter referenced an early draft version of our policy letter suggesting that the transfer hose should include provisions to prevent electrical flow during connection or disconnection of the transfer hose string through the hose string or loading arm. The insertion of one short length of non-conducting hose without internal bonding in each hose string, or installation of an insulating flange, should be addressed. In addition, the

submitter suggested that each transfer hose string should contain only one electrically discontinuous length of hose or insulating flange, to prevent electrostatic build-up in the hose string. The Coast Guard agrees and has amended Policy Letter 02-15, Enclosure (2) to include these recommendations.

One comment was received on lighting whereby the submitter suggested that the intensity levels should not be specified. The Coast Guard disagrees as the lighting intensity levels specified in the policy letters simply mirror existing federal regulations already imposed for transfer operations. See 33 CFR 127.109 and 155.790.

One comment was submitted concerning operations manuals whereby the submitter said there should be a provision to demonstrate that all relevant personnel are familiar with the operations manual. The Coast Guard agrees and has modified the opening paragraph discussing operation, emergency, and maintenance manuals in policy letter 01-15, enclosure (1) indicating that the master of a vessel using LNG as fuel should ensure that all personnel involved with LNG fuel use, transfer, or emergency response are familiar with the contents of the LNG fuel transfer system operations manual.

We received three comments concerning emergency procedures. One commenter stated that simultaneous operations imposes the need for more requirements, especially where passengers, public

or non - qualified / briefed personnel are in proximity of the bunkering operation. At a minimum, the submitter stated a need to consider emergency procedures for handling of passengers in the event of an incident during bunkering. The Coast Guard agrees and has modified Policy Letter 01-15, Enclosure (1) to include a provision in the emergency manual for removing or relocating passengers in the event of an LNG incident during bunkering. One commenter suggested that the LNG bunkering and emergency response procedures take into account the LNG bunkering system in place and that the results of the risk assessment studies are adequately managed. The Coast Guard agrees and has included reference to recognized standards for conducting risk assessments which are identified in Enclosure 1 of Policy Letter 01-15 and Enclosures 1 and 2 of Policy Letter 02-15. The risk assessment we recommend should be based on specific details of the operation intended and identify associated risks and hazards and the means to mitigate those risks. The risk assessment is expected to be used as a guide to assist owners and operators in developing their bunkering and emergency response procedures. One commenter asked for guidance on what security requirements, if any, will be required for the vessel arriving at the facility to receive LNG for fuel. If applicable, the security requirements for vessels may be based on the requirements of 33 CFR Part 104 - Maritime

Security: Vessels. Additionally, a safety or security zone may be established around a vessel by the COTP if it is determined necessary based on the results of a risk assessment.

Six comments were received concerning the topic of LNG bunkering. One commenter suggested that LNG bunkering procedures should ensure that unauthorized and non-essential personnel cannot enter the bunkering area. The Coast Guard agrees and has amended Policy Letter 01-15, Enclosure (1) to include a recommendation that procedures be established for setting, securing, and clearing safety and security areas around the LNG transfer point. Two commenters recommended that the operator define the operational envelope under which transfer can take place noting that this should be indicated as a "permissible range of motion where transfer operations can proceed (to be defined for the operation as well as the transfer equipment)", and be included in the Operations manual. The Coast Guard agrees and has amended Policy Letter 01-15, Enclosure (1) recommending that the operations manual define the operating envelope for which safe transfer operations can and cannot occur. One submitter suggested that paragraph 5b. of Policy Letter No. 01-14 be modified to impose a mutual obligation on both the transferring vessel operator and the receiving vessel operator to ensure that both parties have the personnel and equipment to safely conduct LNG bunkering

operations. The Coast Guard agrees and has added recommended information related to the declaration of inspection which must be signed and completed by both persons in charge of the transfer in accordance with 33 CFR 156.150 signifying a mutual obligation on the part of both parties. One commenter stated that it is critical to have a common set of regulatory procedures for all LNG bunkering operations in all ports in the United States (as exists today under 33 CFR Part 127 and elsewhere) which companies could incorporate into their operational plans and crew training. The Coast Guard agrees that standardized procedures help ensure safe transfer operations and believes the policy letters will help establish guidelines for standardized industry procedures.

Eight comments were submitted concerning referenced standards. The Coast Guard received one comment pointing out that the reference to SIGTTO's LNG Ship to Ship Transfer Guidelines, 1st Edition, 2011, was outdated and should be replaced with SIGTTO's "Ship to Ship Transfer Guide - Petroleum, Chemicals, & Liquefied Gases," 1st Edition, 2013, whenever referenced. The Coast Guard agrees and has modified the policy letters as suggested to reflect the updated industry standard. One comment requested referencing NFPA 59A, the "Standard for the Production, Storage, and Handling of Liquefied Natural Gas" and SIGTTO's "Liquid Gas Fire Hazard Management" in our

discussion of firefighting equipment in Policy Letter 02-14, Enclosure (2). The Coast Guard agrees in part and has added a reference to the SIGTTO publication, but does not reference NFPA 59A because the standard refers to shore based LNG storage and production facilities and Enclosure (2) of Policy Letter 02-15 is focused on vessels providing LNG as fuel. We received a comment suggesting that we add a reference to SIGTTO 2009 publication, "ESD Arrangements & Linked Ship/Shore Systems for Liquefied Gas Carriers" in the discussion of emergency shutdown devices in Enclosure (1) of Policy Letter 01-14. The Coast Guard agrees and has modified the section as requested. Two comments suggested full incorporation of International Maritime Organization (IMO) standards and guidelines. Policy letter 01-15 outlines these operational items in great detail but we have added a recommendation to better align with IMO guidance noting that procedures for confined space entry should be included in the operations manual. One submitter provided a list of industry standards and guides which the Coast Guard should consider recognizing. The Coast Guard has provided a hyperlink to a free publication provided by the LNG Ship Fuel Advisory Group, titled, "Standards and Guidelines for Natural Gas Fuelled Ship Projects" which identifies many of these standards and recommends that owners and operators become familiar with its contents. This change can be found in Policy Letter 01-15,

Enclosure (1), and Policy Letter 02-15, Enclosures (1) and (2) under the section labeled Job Aides.

One submitter suggested Policy Letter 01-14, Enclosure (1) not recommend installation of firefighting equipment on unmanned barges because potential operating scenarios of a barge may include operations away from the LNG facility and firefighting capabilities of a towing vessel during vessel-to-vessel operations could be difficult to ensure. The Coast Guard disagrees and believes operators should consider all firefighting equipment available in the vicinity of an LNG transfer operation whether the transfer is off port or at shore. When conducting a safety assessment for a particular operation, all available firefighting equipment and emergency response equipment should be considered.

One comment suggested that due to the cryogenic properties of LNG, personal protective equipment should be listed with more specificity, including such items as leather working boots (no canvas sneakers should be worn during fueling or transfer operations), loose fitting fire resistant gloves, full face shields, and fit-for purpose multi-layer clothing. The Coast Guard agrees and has modified the sections in Policy Letter 01-15, Enclosure (1) and Policy Letter 02-15, Enclosure (2) discussing recommended personal protective equipment.

The Coast Guard received comments about how the policy letters will be enforced. One commenter raised concerns regarding the notice and comment process of the Administrative Procedure Act (APA), 5 U.S.C. 551, et seq., with regard to the guidance document process and Due Process concerns of appealing a Coast Guard decision. The Coast Guard notes that guidance documents are by their nature non-binding as they are created to assist the industry in absence of other sources or in explaining existing regulatory requirements. These policy letters provide clarification to industry of existing requirements and how to apply them in this quickly changing environment. These policy letters do not impose legally binding requirements and a company can choose not to adopt the recommendations in the policy letter if it desires. There is no enforcement action associated with these recommendations and thus no appeal process is necessary. However, it is important to note that anyone affected by a direct decision of an OCMI/COTP can appeal that decision to the District Commander as provided for in 46 CFR 1.03-20 and 33 CFR 127.015. Finally, the Coast Guard received one comment requesting clarification on the statement in Policy Letter 01-14 indicating that it is the responsibility of the operator of the facility and/or the transferring vessel to ensure that the receiving vessel has the necessary personnel and equipment to safely and securely participate in the conduct of an LNG

transfer operation. While the regulations in 33 CFR Part 127, Subpart B, indicate the primary responsibility for ensuring appropriate LNG transfer protocols are followed lies with the facility operator, the receiving vessel is required by 33 CFR 156.120 and 156.150 to identify a PIC of transfer operations on the vessel who will assist the PIC of shoreside transfer operations in conducting the preliminary transfer inspection required and completing the declaration of inspections required by 33 CFR 127.317 and 156.150. The qualifications set forth at 33 CFR 127.301 and 33 CFR 155.710 (Qualifications of person in charge) are good guidance for assigning a PIC. Additionally, this policy sets forth recommended personnel training guidelines for those personnel who will participate in the transfer operation.

We received one comment asking for guidance on the topic of roll over. As a result of this comment, the Coast Guard added roll over to the list of items in Policy Letter 01-15, Enclosure (1) for which emergency actions and response measures should be described in the emergency manual.

One comment suggested that the word, "if used" be deleted in enclosure (1) to CG-OES Policy Letter No. 01-14, on page 2, under the heading, "Operations, Emergency, and Maintenance Manuals," noting that inert gas must be used to prevent

potentially explosive conditions. The Coast Guard agrees and has amended the policy letter as suggested.

Finally, one comment was submitted requesting that the Coast Guard elaborate what is meant by the boundary of a facility conducting bunkering. In response, the Coast Guard provides that the boundaries of an LNG facility handling LNG should be based on the requirements for design and spacing in NFPA 59A as outlined in 33 CFR Part 127 and any risk or fire safety assessments that may be prepared for the specific operation. The boundary of each facility conducting bunkering should be based on details of the specific bunkering operation.

Voluntary Policy

The Coast Guard's intent in issuing these policy letters is to assist the industry, public, Coast Guard, and other Federal and State regulators in applying existing statutory and regulatory requirements. Following the policy and guidance recommended in these policy letters is voluntary. The policy letters are not a substitute for applicable legal requirements nor are they regulations themselves. The policy letters, however, do contain references to existing regulations which may require certain action where applicable. The Coast Guard notes those instances where it discusses requirements under existing regulations instead of policy or guidance. Nothing in the policy letters and guidance they contain are meant to override

or subvert the discretion of the COTP when addressing the unique safety and security concerns of an LNG operation.

This notice is issued under authority of 5 U.S.C. 552(a).

Dated: 19 February 2015

J.G. LANTZ,
Director of Commercial Regulations and Standards,
U.S. Coast Guard

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