

U.S. Department of
Homeland Security

United States
Coast Guard

Commandant

United States Coast Guard



2703 Martin Luther King Jr Ave, SE
Washington, DC 20593-7509
Staff Symbol: CG-MMC
Phone: (202) 372-1492
Fax: (202) 372-1926

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CG-MMC Policy Letter
No. 02-19
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From: M. Medina 
COMDT (CG-MMC)

To: Distribution

Subj: GUIDELINES FOR TRAINING OF PERSONNEL ON VESSELS USING NATURAL
GAS AND OTHER LOW FLASHPOINT FUELS

1. **Purpose.** This policy letter republishes previous guidance to Coast Guard Captains of the Port (COTP) and Officers in Charge of Marine Inspection (OCMI) regarding vessels that use natural gas and other low flashpoint fuels and engage in fuel transfer operations. It addresses training of personnel working on U.S. and foreign flagged vessels that use natural gas and other low flashpoint fuels and conduct fuel transfer operations in waters subject to U.S. jurisdiction. This policy does not apply to vessels regulated as liquefied natural gas (LNG) carriers that utilize their boil-off gas as fuel.
2. **Action.** Cognizant COTP/OCMI should use this policy as a guide to determine whether personnel on vessels that use natural gas and other low flashpoint fuels have received training in a manner that provides an appropriate level of safety, taking into account the unique characteristics of these vessels.
3. **Directives Affected.** This policy republishes Enclosure (3) to CG-OES Policy Letter No. 01-15 "Guidelines for Liquefied Natural Gas Fuel Transfer Operations and Training of Personnel on Vessels Using Natural Gas as Fuel."
4. **Background.**
 - a. Natural gas and other low flashpoint fuels are considered by the maritime industry to be a prominent future fuel source for commercial vessels. The International Maritime Organization's designation of the North American Emission Control Area under MARPOL Annex VI has imposed stringent emissions limitations on commercial vessels. As more emphasis is placed on the need for cleaner engine emissions natural gas and other low-flashpoint fuels have become increasingly utilized as alternatives to marine diesel.
 - b. Existing regulations cover design, equipment, operations, and training of personnel on vessels that carry LNG as cargo and facilities that handle LNG in bulk. However, the use of natural gas and other low-flashpoint fuels is a relatively new concept in the United States. Although some existing regulations apply to natural gas and other low-flashpoint fuel transfer operations, the

Coast Guard has not established training regulations for vessels that utilize natural gas and other low-flashpoint fuels.

5. Discussion.

- a. In February 2015, the Coast Guard published CG-OES Policy Letter 01-15 “Guidelines for Liquefied Natural Gas Fuel Transfer Operations and Training of Personnel on Vessels Using Natural Gas as Fuel.” As part of this policy the Maritime Personnel Qualifications Division included Enclosure (3) titled “Training Guidance for Mariners on Vessels Using Gases or Other Low Flashpoint Fuels.” That enclosure provided training guidance for personnel who will work aboard vessels using gases or low flashpoint fuels, which includes the use of LNG as fuel.
- b. In 2016, the Merchant Mariner Credentialing Program reorganized as the Office of Merchant Marine Credentialing (CG-MMC) under the Director of Commercial Regulations and Standards. This promoted consistency and efficiency in the services provided to industry. Previously, the Maritime Personnel Qualifications Division operated as part of the Office of Operational and Environmental Standards.
- c. Recognizing the need to provide accurate contact information and to align the policy name with the organizational structure of the Merchant Mariner Credentialing program, Enclosure (3) to OES Policy 01-15 is being republished under Enclosure (1) to this policy. There are no changes to any portion of the enclosure.
- d. The existing regulation at 46 CFR 15.405 requires that each credentialed mariner be familiar with the relevant characteristics of the vessel appropriate to his or her duties and responsibilities prior to assuming those duties and responsibilities. Enclosure (1) provides training guidance for personnel who will work aboard vessels using gases or low flashpoint fuels, which includes the use of LNG as fuel.

6. Disclaimer. While the guidance contained in this document may assist the industry, public, Coast Guard, and other Federal and State regulators in applying statutory and regulatory requirements, the guidance is not a substitute for applicable legal requirements nor is it a regulation itself.

7. Changes. This policy letter will be posted on the web at https://www.dco.uscg.mil/nmc/policy_regulations/ Changes to this policy will be issued as necessary. Suggestions for improvement of this policy should be submitted in writing to Commandant, U.S. Coast Guard Headquarters, Office of Merchant Mariner Credentialing (CG-MMC) at the address listed on the first page.

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Encl: (1) Training Guidance for Mariners on Vessels Using Gases or Other Low Flashpoint Fuels

Dist: CG-ENG
CG-CVC
CG-FAC
CG MSC

CG LGC NCOE
CG OCS NCOE
All Area/District (p) offices
All Sector/MSUs/MSDs
Activities Europe
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TRAINING GUIDANCE FOR MARINERS ON VESSELS USING GASES OR OTHER LOW FLASHPOINT FUELS

This interim guidance is based upon STCW.7/Circ.23, *Interim guidance on training for seafarers on board ships using gases or other low-flashpoint fuels* as amended by STCW.7/Circ.23/Add.1, *Amendments to the interim guidance on training for seafarers on ships using gases or other low-flashpoint fuels*.

1 GENERAL

1.1 This training guidance recommends the level of competence necessary for the safe operation of natural gas fuel systems. This guidance is consistent with the IMO's STCW.7/Circ.23, *Interim guidance on training for seafarers on board ships using gases or other low-flashpoint fuels*. Accordingly, each mariner onboard a natural gas-fueled vessel should meet the training guidance appropriate for the position they fill on the vessel. This applies equally to inspected and uninspected vessels on domestic or international voyages.

1.2 Mariners on U.S. vessels must comply with requirements in 46 CFR 15.405 (Familiarity with vessel characteristics) and 46 CFR 15.1105 (Familiarization and basic training), as appropriate, before assuming their duties and responsibilities. Mariners on non-U.S. vessels should receive familiarity training required by the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, (STCW) Regulations I/14, *Responsibilities of companies*.

1.3 In addition, mariners employed on these vessels should receive appropriate training on the risks and emergency procedures associated with the use of gases or other low flashpoint fuels, in accordance with their duties and responsibilities. On that basis, the following training levels have been identified:

- .1 basic training for mariners responsible for designated safety duties associated with the care, use or in emergency response to gases or other low flashpoint fuels; and
- .2 advanced training for the masters, engineer officers and all personnel with immediate responsibility for the care and use of the fuel and fuel systems onboard vessels using gases or other low flashpoint fuels.

1.4 For the purpose of these guidelines, "*gases or low flashpoint fuels*" means gaseous or liquid fuel having a flashpoint lower than otherwise allowed under 46 CFR 58.01-10(a)(1).

2 TRAINING GUIDANCE

2.1 Prior to being assigned duties on board a vessel using gases or other low flashpoint fuels, all mariners should receive appropriate training in accordance with this section. Mariners trained in accordance with earlier standards should compare those standards with the training provisions in this guidance to determine the need, if any, to update their qualifications.

2.4 Basic and advanced training should be given by qualified personnel experienced in the handling of gases or other low flashpoint fuels and the safety procedures involved.

2.5 It is important to emphasize the value of risk analysis to the mariner. All relevant risk analyses should be made available during training with the intent of improving the student's future decision making so that it results in the mitigation or elimination of any adverse effects during an unplanned event or emergency.

2.6 Reducing training may be appropriate for vessel personnel onboard non-passenger vessels of less than 200 GRT/500 GT using gases or other low flashpoint fuels if there are other appropriate safety precautions in effect. These reductions should be recorded in the documentary evidence listed in Section 5 of this document. These precautions may include, but are not limited to, limiting the quantity of fuel carried to less than 10 cubic meters, the immediate availability of appropriate shore based emergency response, routes limited to within 1 hour of properly trained maintenance personnel, methods of bunkering that include multiple levels of safety under the supervision of someone fully trained in accordance with the advanced standards or a tankerman PIC (LG) and other provisions that adequately allow for safe operations. The company should consider the ability of its shipboard personnel to safely and comprehensively respond to emergency situations and the ability of those personnel to safely operate the equipment, keeping in mind specific hazards associated with using gases or other low flashpoint fuels. Any questions regarding the reduction in training should be directed through a formal request to:

Commandant (CG-OES-1)
Attn: Maritime Personnel Qualifications Division
US Coast Guard Stop 7509
2703 Martin Luther King Jr Ave SE
Washington, DC 20593-7509

CGOES1@uscg.mil

3 STANDARDS OF COMPETENCE

3.1 Standard of competence for basic training

3.1.1 Mariners responsible for designated safety duties associated with the care, use or in emergency response to the fuel on board vessels using gases or other low flashpoint fuels should, before being assigned to shipboard duties:

3.1.1.1 receive basic training or instruction on the use of gases or other low flashpoint fuels so as to:

3.1.1.1.1 contribute to the safe operation of a vessel using gases or other low flashpoint fuels;

3.1.1.1.2 take precautions to prevent hazards on a vessel using gases or other low flashpoint fuels;

3.1.1.1.3 apply occupational health and safety precautions and measures;

3.1.1.1.4 carry out firefighting operations on a vessel using gases or other low flashpoint fuels;

- 3.1.1.1.5 respond to emergencies; and
- 3.1.1.1.6 take precautions to prevent pollution of the environment from the release of gases or other low flashpoint fuels;
- 3.1.1.2 be required to provide documentary evidence of having achieved the required standard of competence to undertake their duties and responsibilities through:
 - 3.1.1.2.1 demonstration of competence in accordance with the methods and criteria for evaluating competence; and
 - 3.1.1.2.2 examination or continuous assessment as part of a training program.
- 3.1.2 Mariners responsible for designated safety duties associated with the care, use or in emergency response to the fuel on board vessels using gases who have been qualified and certified according to the standards of competence as specified in 46 CFR Part 13 for service on liquefied gas tankers, as Tankerman PIC (LG), Tankerman Engineer (LG) or Tankerman Assistant (LG), should be considered as having met the recommendations specified in this subsection, provided they have also met the requirements of 46 CFR 15.405 and 46 CFR 15.1105.

3.2 Standard of competence for advanced training

- 3.2.1 Masters, engineer officers and any person with immediate responsibility for the care and use of gases or other low flashpoint fuels being used as fuel serving on board vessels using this fuel, before being assigned to shipboard duties should:
 - 3.2.1.1 receive advanced training on the use of gases or other low flashpoint fuels so as to:
 - 3.2.1.1.1 be familiar with physical and chemical properties of gases or other low flashpoint fuels;
 - 3.2.1.1.2 operate controls of fuel related to propulsion plant and engineering systems and services and safety devices on vessels using gases or other low flashpoint fuels;
 - 3.2.1.1.3 be able to safely perform and monitor all operations related to the fuels used on board vessels using gases or other low flashpoint fuels;
 - 3.2.1.1.4 plan and monitor safe bunkering, stowage and securing of the fuel on board vessels using gases or other low flashpoint fuels;
 - 3.2.1.1.5 take precautions to prevent pollution of the environment from the release of fuels from vessels using gases or other low flashpoint fuels;
 - 3.2.1.1.6 monitor and control compliance with legislative requirements;
 - 3.2.1.1.7 take precautions to prevent hazards;
 - 3.2.1.1.8 apply occupational health and safety precautions and measures on board vessels using gases or other low flashpoint fuels; and
 - 3.2.1.1.9 have knowledge of the prevention, control, firefighting and extinguishing systems on board vessels using gases or other low flashpoint fuels;

3.2.1.2 be required to provide documentary evidence of having achieved the required standard of competence to undertake their duties and responsibilities through:

3.2.1.2.1 demonstration of competence in accordance with the methods and criteria for evaluating competence; and

3.2.1.2.2 examination or continuous assessment as part of a training program.

3.2.1.3 Masters, engineer officers and any person with immediate responsibility for the care and use of fuels on vessels using gases who have been qualified and certified according to the standards of competence specified in 46 CFR Part 13 for service on liquefied gas tankers as Tankerman PIC (LG) or Tankerman Engineer (LG) should be considered as having met the recommendations specified in this subsection, provided they have also met the requirements of 46 CFR 15.405 and 46 CFR 15.1105, and have completed sea going service of three months in the previous five years on board a tanker carrying gases.

4 DOCUMENTARY EVIDENCE

4.1 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.

4.2 Mariners working on board an inspected natural gas-fueled vessel who have responsibility for bunkering and/or the operation of natural gas fuel systems must hold a Merchant Mariner Credential (MMC) with an appropriate endorsement as required under 46 CFR 15.401 authorizing service on board the vessel and should hold documentary evidence of meeting the advance training contained in paragraph 3.2 above.

4.3 Mariners working on board an uninspected natural gas-fueled vessel who have responsibility for bunkering and/or the operation of natural gas-fuel systems should either comply with paragraph 4.2 above or be issued a letter of designation by the company listing them as a person-in-charge (PIC) of the transfer of natural gas as fuel and/or the operation of the natural gas-fuel system aboard the vessel or class of vessels upon which they are serving. The letter of designation should state that the holder has received formal advance instruction in accordance with paragraph 3.2 above to ensure his or her ability to safely and adequately carry out his or her duties and responsibilities as PIC. Also, mariners working on board uninspected natural gas-fueled vessels who are not required to hold an MMC but who have designated safety duties associated with the care, use or emergency response to the fuel on board should hold documentary evidence that the holder has received sufficient formal basic training in accordance with paragraph 3.1 above, to ensure his or her ability to safely and adequately carry out his or her duties and responsibilities.

4.4 The Coast Guard will review courses submitted on a voluntary basis that are designed to meet the training guidance outlined in paragraphs 3.1 and 3.2. These courses will be issued a letter attesting to the review and its conformance with the training, as appropriate, in this guidance. If training regulations are published, courses that were subject to this review will have to be re-submitted for approval in accordance with the regulations in 46 CFR 10.402. Course providers may submit the course information to the National Maritime Center, either by mail or electronically. The course information should include: the course name, the name of the

organization providing the instruction, a general description of the course and its objective, and the course content/curriculum, and be directed to:

National Maritime Center
Training & Assessment Division (NMC-2)
100 Forbes Drive
Martinsburg, WV 25404
ATTN: NMC Course Approvals

NMCCOURSES@uscg.mil

4.5 The Coast Guard will not be issuing endorsements to seafarers meeting the training in this guidance.

5 FAMILIARIZATION TRAINING AND EMERGENCY EXERCISES

5.1 A training manual should be developed and a training program and exercises should be specially designed for each individual vessel and its gas installations.

5.2 Emergency exercises on board vessels using gases or other low flashpoint fuels should be conducted at regular intervals (e.g. quarterly). Such gas-related exercises could include for example:

- 5.1.1 tabletop exercise;
- 5.1.2 review of fueling procedures based in the fuel handling manual;
- 5.1.3 responses to potential contingences;
- 5.1.4 tests of equipment intended for contingency response; and
- 6.1.5 reviews that assigned seafarers are trained to perform assigned duties during fuelling and contingency response.

5.3 Gas related exercises may be incorporated into periodical drills required by regulation and/or SOLAS. The response and safety system for hazard and accident control should be reviewed and tested.