NAURU
MARITIME ADMINISTRATION

**USAGE OF GASES OR OTHER LOW-FLASHPOINT FUELS ON BOARD**
**(NMA_C60.2025. Rev.0)**

## (a) DEFINITION:

1. "ESD" – Emergency Shutdown, as defined in IGF Code
2. "IGC Code" – International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk, as amended
3. "IGF Code" – International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels, as amended
4. "IMO" – International Maritime Organization
5. "LNG" – Liquefied Natural Gas, as defined in IGF Code
6. "PPE" – Personal Protective Equipment
7. "RO" – Recognized Organization as defined by IMO Resolution A.789(19)
8. "SMS" – Safety Management System
9. "SOLAS" – The International Convention for the Safety of Life at Sea, 1974, as amended
10. "STCW Code" – Seafarers' Training, Certification, and Watchkeeping Code, 2011 Edition, as amended
11. "STCW Convention" – International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers, 2011 Edition, as amended

The term "**Administration**" refers to the Nauru Maritime Administration.

## (b) PURPOSE:

This circular provides guidance on the requirements for operating ships using gases or other low-flashpoint fuels.

## (c) REFERENCES:

1. IMO Resolution MSC.392(95), Amendments to the International Convention for the Safety of Life at Sea, 1974, as amended (Chapters II-1, II-2 and Appendix), adopted 11 June 2015
2. IMO Resolution MSC.396(95), Amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended, adopted 11 June 2015
3. IMO Resolution MSC.397(95), Amendments to Part A of the Seafarers' Training, Certification and Watchkeeping (STCW) Code, adopted 11 June 2015

## (d) APPLICATION:

This circular applies to Nauru-flagged ships to which Part G of SOLAS Chapter II-1 applies; specifically ships using low-flashpoint fuels:

1. For which the building contract was placed on or after 01 January 2017;
2. In the absence of a building contract, the keels of which were laid or which were at a similar stage of construction on or after 01 July 2017; or
3. The delivery of which was on or after 01 January 2021

**(e) REQUIREMENTS:**

1. Design & Construction

    1.1. Ships to which this circular applies shall be designed and constructed in accordance with the applicable requirements of the IGF Code.

    1.2. The design and construction shall be approved and supervised by the RO respectively.

    1.3. Upon completion of construction, the RO shall issue a Safety Construction Certificate indicating that the ship complies with "Part G of chapter II-1 of the Convention using "LNG" as fuel".

2. Operating Requirements

    2.1. Every ship to which this circular applies shall carry a copy of the IGF Code on board. The Administration accepts this in electronic format.

    2.2. Maintenance procedures and information for all gas related installations shall be available on board, and shall include all areas and systems that may be subject to gas leaks and their associated hazards.

    2.3. Each ship shall be provided with a suitably detailed fuel handling manual to ensure that trained personnel can safely operate the fuel bunkering, storage, and transfer systems.

    2.4. Each ship shall be provided with suitable emergency procedures covering all aspects of the fuel handling systems. In addition, emergency procedures shall be in place to provide for the ESD of any equipment that has the potential to become hazardous under certain abnormal conditions.

3. Maintenance Requirements

    3.1. All maintenance and repair procedures shall include considerations for tank locations and adjacent spaces, considering the safe operation and other hazards that may be relevant to the ship.

    3.2. An inspection/survey plan for the liquefied gas fuel containment system shall be developed and approved by the RO. The inspection/survey plan shall identify aspects to be examined and/or validated during surveys throughout the life of the liquefied gas fuel containment system. It shall also identify any necessary in-service survey, maintenance, and testing that was assumed when selecting liquefied gas fuel containment system design parameters. All in-service surveys, maintenance, and testing of the fuel containment system must be carried out in accordance with that plan.

    3.3. The procedures and information shall include maintenance of electrical equipment that is installed in explosion hazardous spaces. The inspection and maintenance of electrical installations in explosion hazardous spaces shall be performed in accordance with a recognized standard.

4. Bunkering Operations

    4.1. Before any bunkering operation commences, the Master of the receiving ship or their designated representative, and the representative of the bunkering source shall:

        4.1.1. agree in writing to the transfer procedure, including cooling down and if necessary, gassing up, the maximum transfer rate at all stages, and volume to be transferred;
        4.1.2. agree in writing action to be taken in an emergency; and

4.1.3. complete and sign the bunkering safety checklist.

4.2. The storage tanks for liquefied gas shall not be filled to more than a volume equivalent to 98% full at the reference temperature during the bunkering operations, in accordance with Part A-1/6.8.1 of the IGF Code.

4.3. Upon completion of the bunkering operations, the ship shall receive and sign a Bunker Delivery Note for the fuel delivered, containing at least the information specified in the Annex of the IGF Code.

4.4. The fuel handing procedures shall be a part of the ship's SMS and shall include, but not limited to, the following details:

4.4.1. overall operation of the ship from dry-dock to dry-dock, including procedures for system cool down and warm up, bunker loading and, where appropriate, discharging, sampling, inerting, and gas freeing;
4.4.2. bunker temperature and pressure control, alarm, and safety systems;
4.4.3. system limitations, cool down rates, and maximum fuel storage tank temperatures prior to bunkering, including minimum fuel temperatures, maximum tank pressures, transfer rates, filling limits, and sloshing limitations;
4.4.4. operation of inert gas systems;
4.4.5. firefighting and emergency procedures, including the operation and maintenance of firefighting systems, and the use of extinguishing agents;
4.4.6. specific fuel properties and special equipment needed for the safe handling of the particular fuel;
4.4.7. fixed and portable gas detection operation and maintenance of equipment;
4.4.8. emergency shutdown and emergency release systems, where fitted;
4.4.9. a proforma bunkering safety checklist, a copy of which is to be reviewed, completed, and signed during each bunkering operation; and
4.4.10. a description of the procedural actions to be taken in an emergency situation, such as leakage, fire or potential fuel stratification resulting in rollover.

4.5. Documentation of successful verification shall be indicated by the mutually agreed and executed bunkering safety checklist signed by both ships.

4.6. Hoses, transfer arms, piping, and fittings provided by the delivery facility used for bunkering shall be electrically continuous, suitably insulated, and shall provide a level of safety compliance with recognized standards, including the use of an insulation flange between bunker manifold and the supply source to electrically isolate the vessel (ref. ISO 20519, para. 5.5.6.)

4.7. Warning signs shall be posted at the access points to the bunkering area listing fire safety precautions during fuel transfer.

4.8. During the transfer operations, personnel in the bunkering manifold area shall be limited to essential staff only. All staff engaged in duties or working in the vicinity of the operations shall wear appropriate PPE. A failure to maintain the required conditions for transfer shall be sufficient reason to stop operations, and transfer shall not be resumed until all required conditions are met.

5. Enclosed Space Entry

5.1. Under normal operational circumstances, personnel shall not enter fuel tanks, fuel storage hold spaces, void spaces, tank connection spaces, or other enclosed spaces where gas or flammable vapors may accumulate. Personnel may enter these enclosed spaces only if the gas content of

the atmosphere in such space is determined by means of fixed or portable equipment to ensure oxygen sufficiency and absence of an explosive atmosphere.

5.2. Personnel entering any space designated as a hazardous area shall not introduce any potential source of ignition into the space unless it has been certified gas-free and maintained in that condition.

6. Inerting and Purging of Fuel Systems

6.1. The primary objective in inerting and purging of fuel systems is to prevent the formation of a combustible atmosphere in, near, or around fuel system piping, tanks, equipment, and adjacent spaces.

6.2. Procedures for inerting and purging of fuel systems shall ensure that air is not introduced into piping or a tank containing gas atmospheres, and that gas is not introduced into air contained in enclosures or spaces adjacent to fuel systems.

7. Hot Work on or near Fuel Systems

Hot work in the vicinity of fuel tanks, fuel piping, and insulation systems that may be flammable, contaminated with hydrocarbons, or that may give off toxic fumes as a product of combustion, shall only be undertaken after the area has been secured and proven safe for hot work and all approvals have been obtained.

8. Training and Certification of Personnel

8.1. Basic Training

Personnel assigned designated fuel duties on ships subject to the IGF Code shall hold either a basic IGF Training Certificate of Proficiency OR a Certificate of basic training for liquefied gas tanker cargo operations in accordance with STCW A-V/1-2 paragraph 1.

8.2. Advanced Training

8.2.1. Masters, engineer officers and all personnel with immediate responsibility for the care and use of fuels and fuel systems on ships subject to the IGF Code should hold a certificate in advanced training for service on ships subject to the IGF Code.
8.2.2. Seafarers who hold a Certificate of Proficiency for advanced training for liquefied gas tanker cargo operations (STCW Regulation V/1-2.4) are considered as satisfying the requirements for IGF advanced training.
8.2.3. Please kindly refer to IMO Resolution MSC. 396 (95) and MSC397.95 respectively.