Australian Government
Australian Maritime Safety Authority

CHIEF EXECUTIVE OFFICER

Mr Ian Blayney, MLA
Chairman
Economics and Industry Standing Committee
Parliament House
PERTH WA 6000

Dear Mr Blayney

I refer to your letter of 14 November 2014 (Your reference: A472968) requesting information on the application of Australian and international maritime laws to ships and to a Floating Liquefied Natural Gas (FLNG) facility such as Shell's Prelude facility.

The Australian Maritime Safety Authority (AMSA) is a statutory authority established under the *Australian Maritime Safety Authority Act 1990*. The Authority's primary role is to minimise the risk of shipping incidents and ship sourced pollution in Australian waters through ship safety and environment protection regulation and services and maximise people saved from maritime and aviation incidents through search and rescue coordination.

AMSA does not have a regulatory role in offshore facilities and installations which is the role of the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). AMSA's safety and marine environment protection regulatory role is clearly limited to vessels or ships used in navigation, and in the case of FLNG facilities, the application of Australian and international maritime laws is a developing matter.

In the Australian context, when a FLNG facility is being constructed or is operating as a ship, AMSA may be involved under the auspices of the *Navigation Act 2012*. When a FLNG facility is operational and is 'connected to a riser' it is not subject to the *Navigation Act 2012.* However it is subject to the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGS Act).

In relation to your request for information on the application of Australian and international maritime laws to ships and not to a FLNG facility, I will address my response to the following four specific areas:

a) Design and construction;
b) Qualifications;
c) Occupational health and safety; and
d) Environmental matters.

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a) Design and construction

Proponents of FLNG facilities have been in communication with AMSA regarding their design and certification. FLNG facilities are a relatively recent innovation and it has been necessary to develop requirements related to the arrangement, equipment and certification.

AMSA is endeavouring to work with proponents to develop standards that address the delivery of FLNG facilities to their destinations and any subsequent voyages from their places of operation, such as for repair, routine maintenance and/or cyclone avoidance in the case of facilities that are not permanently moored. It is reasonable to expect that even facilities that are 'permanently moored'[1] will be required to move from their places of operation at some stage.

International requirements for design and construction of ships have not been developed to fully capture FLNG facilities. This means that AMSA, in consultation with FLNG facility operators, has needed to develop regulatory solutions to design, construction and maintenance requirements.

To determine which standards should apply and where these will be captured, AMSA has maintained a dialogue with the two companies which are building, or are planning to build, large FLNG facilities. As a starting point it has been determined to use existing International Maritime Organization (IMO) Conventions and Codes (for example the IMO International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk) to establish such requirements, even though these may not normally apply.

This allows AMSA and the proponents of the FLNG facilities to apply well understood and technically robust standards in establishing the survey and certification requirements for these ships.

Certification of these ships, for the period they are subject to the *Navigation Act 2012*, is currently managed according to Marine Order 31 (Ship Surveys and Certification). However, it is acknowledged that regulatory arrangements also need to address specific requirements for the design and construction and be appropriate to the ships' operations and purpose.

After consultation with industry, it has been concluded that a review of AMSA's marine orders will occur to set the maritime regulatory standards for FLNG facilities. Marine Order 60 which currently covers four Floating Production Storage and Offloading (FPSO) ships and one Floating Storage Unit (FSU) ship will be included in the review. Two other permanently moored FLNG facilities that AMSA proposes are subject to marine order coverage are currently under construction. At this stage there are plans for up to four large FLNG facilities.

The changes to be captured in AMSA marine orders to address FLNG facility requirements and deal with the increasing use of permanently moored facilities are:

- the application of the Safety of Life at Sea Convention 1974, as amended (SOLAS);

[1] Permanently Moored means a facility that is designed to remain permanently moored for the production life of the related oil field.

- the use of the IMO International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) as the basis of the design of the storage and containment systems. The purpose of the IGC Code is to provide an international standard for the safe transport by sea in bulk of liquefied gases, but it is relevant to FLNG facilities. It prescribes the design and construction standards of ships involved in the carriage of gases and the equipment they should carry so as to minimise the risk to the ship, its crew and to the environment;

- where a FLNG facility is not permanently moored, when operating as a ship it will be required to be certified as a 'Gas Carrier' under the IGC Code. Permanently moored ships should be built to the standards set by the IGC Code; and

- for permanently moored FLNG facilities, consideration is being given to the adoption of requirements related to the life saving and communications equipment contained in the IMO Mobile Offshore Drilling Unit Code (MODU Code). This provides a better fit for permanently moored facilities (given their design and operation) than adaptation of SOLAS.

Australia assisted in the development of the IMO Marine Environment Protection Committee's Guidelines for the application of the Revised MARPOL Annex I (Regulations for the Prevention of Pollution by Oil) Requirements to FPSOs and FSUs and given effect through MEPC.139(53). However, these guidelines are not captured within marine orders. It is anticipated that marine orders will be revised to reflect the provisions of the guidelines.

The structural integrity of a ship is a critical element in its safe operation. This is normally achieved through a series of survey cycles of five years and an enhanced survey regime for Oil Tankers and Bulk Carriers as detailed in the IMO International Code on the Enhanced Programme of Inspection during Surveys of Bulk Carriers and Oil Tankers (ESP Code) which is mandated through SOLAS. This could also be considered to be relevant to FLNG facilities because they produce condensate – essentially a crude oil that condensates out of the gas during the liquefaction process and is stored on board and transferred to offtake tankers as cargo. Such operations are subject to MARPOL Annex I implemented in Australia through the *Protection of the Sea (Prevention of Pollution from Ships) Act 1983*.

However, the enhanced survey regime does not adequately address the operational need for floating offshore units to remain on station for substantially more than the five years. The regime is therefore delivered in part through regular dry dockings or periods where the facility is 'out of service'.

As such, implementation through marine orders will need to consider how it can provide for equivalent survey outcomes to those detailed in the ESP Code. Discussions with a prominent offshore facility operator in this regard have centred on a "risk-based integrity" regime under which all spaces would be subject to thickness gauging and close-up survey at least once during the five-year survey cycle. More frequent gauging/survey may be initiated by the system if warranted by the accumulated data for the space.

When operating under the *Navigation Act 2012,* FLNG facilities are also subject to the *Maritime Labour Convention 2006* (MLC 2006). While FLNG facility proponents are seeking certification under MLC 2006, accommodation on floating facilities that are not designed to disconnect poses some challenges because the safety and operational requirement (driven by the design) impact on the ability to comply with MLC 2006 as written. The designs provided to date appear to be very good quality with good sized accommodation which exceeds MLC 2006 requirements in many areas. AMSA will therefore look at the potential to provide some flexibility to accept equivalent arrangements within marine orders.

b) Qualifications

For an FLNG operating under the OPGGS Act, NOPSEMA would require the operator to submit a safety case under that Act and associated regulations for each petroleum activity. Any requirements that AMSA may have under the *Navigation Act 2012* only apply to the extent permitted by section 640 of the OPGGS Act.

c) Occupational Health and Safety

Under section 640 of the OPGGS Act, the *Occupational Health and Safety (Maritime Industry) Act 199*3 (OHS(MI) Act) and subordinate legislation also do not apply generally in relation to a facility or a person at such a facility or activities that take place at such a facility.

FLNG is taken to be a 'facility' under Schedule 3 – Occupational health and safety of the OPGGS Act. In the Act, a ship is defined as a facility when the ship (located in Commonwealth waters) is being used, or prepared for use, at that site for offshore petroleum operations or offshore greenhouse gas storage operations. NOPSEMA would therefore have jurisdiction on health and safety matters on the FLNG.

AMSA is the Inspectorate under the OHS(MI) Act and has occupational health and safety jurisdiction on 'prescribed ships' or 'prescribed units' engaged in trade or commerce on interstate or overseas voyages. A prescribed ship or unit is, in general terms:

(i) a ship or unit registered in Australia; or

(ii) a ship engaged in coastal trading under a general licence within the meaning of the *Coastal Trading (Revitalised Australian Shipping) Act 2012*; or

(iii) a ship (other than the above) on which the majority of crew are residents of Australia and which is operated by persons or firms with a principal place of business in Australia; or

(iv) a ship or unit declared by the Minister to be a prescribed ship or unit.

As a result, a FLNG facility falls under the OHS(MI) Act if the ship is no longer subject to section 640 of the OPGGS Act, and if it satisfies the above OHS(MI) Act application requirements.

It is possible that a FLNG facility may not be covered by the OHS(MI) Act when disconnecting for short durations.

d) Environmental matters

The National Plan for Maritime Environmental Emergencies, managed by AMSA, sets out arrangements for the management of maritime environmental emergencies within Australian waters. Consistent with these arrangements, the OPGGS Act, administered by NOPSEMA, sets out requirements for FLNG facility operators in Commonwealth waters in relation to the management of safety and environmental incidents. Specifically, the operator is responsible for preparing and managing the response to emergencies of all scales. Comparable legislation and regulations are in place for offshore petroleum activities in State and Territory waters.

AMSA will, upon request, support an offshore petroleum operator in responding to an incident. AMSA has regular engagement with operators with regard to emergency response planning activities to ensure this support can be provided in an effective manner.

AMSA has a number of memorandums of understanding (MOUs) with offshore petroleum operators in relation to oil spill preparedness and response. It is anticipated new MOUs will be agreed with any new upstream operations, for example FLNG facility activities.

I trust that this information assists the Committee with its deliberations. Should any additional or clarifying information be required please do not hesitate to contact me.

Yours sincerely

BRAD GROVES
Acting Chief Executive Officer

5 December 2014