



Maritime Union of Australia (MUA)

Submission to

**Western Australian Parliament
Legislative Assembly**

Economics & Industry Standing Committee

Inquiry into

***Safety-Related Matters Relating to FLNG
Projects in Australian Waters off the Western
Australian Coast***

31 October, 2014

1. Introduction

- 1.1 To date governments and the broader community are yet to fully grasp the safety implications of Floating Liquefied Natural Gas (FLNG) operations.
- 1.2 For this reason, the MUA welcomes the decision by the Economics & Industry Standing Committee of the Legislative Assembly of the Parliament of Western Australia to inquire into the safety of FLNG operations and the MUA welcomes the opportunity to make a submission to the Inquiry.

2. The MUA

- 2.1 The Maritime Union of Australia (MUA) represents some 16,000 workers in the shipping, offshore oil and gas, stevedoring, port services and diving sectors of the Australian maritime industry.
- 2.2 In the offshore oil and gas industry, MUA members work in a variety of occupations. This involves vessels supporting offshore oil and gas exploration, including drill rigs and seismic vessels. In offshore oil and gas construction projects this includes pipe-layers, cable-layers, rock-dumpers, dredges, accommodation vessels and support vessels. In, and during, offshore oil and gas production this consists of Floating Production Storage and Offloading vessels, Floating Storage and Offloading vessels and other support vessels.
- 2.3 MUA members also work on vessels engaged in international Liquefied Natural Gas transportation.

3. The Context of FLNG Operations

- 3.1 Multinational oil and gas companies have been investigating FLNG for a number of years. There are not, however, any in operation anywhere in the world.
- 3.2 Shell is currently developing the world's first FLNG - the Prelude Project, some 200 kilometres off the far north-eastern tip of the Western Australia coast. According to Shell its proposed FLNG Prelude Project:
 - Will be 488m long and 74m wide and when fully loaded will weigh around 600,000 tonnes - roughly six times as much as the largest aircraft carrier
 - Will be the largest floating structure in the world
 - Once constructed it will be towed to location where it will be permanently moored by four groups of massive mooring chains in 250m-deep water
 - Is expected to stay moored for 25 years and produce at least 3.6 million tonnes of LNG per year, as well as Liquid Petroleum Gas and condensate for export.
- 3.3 Shell's FLNG Prelude Project is currently being constructed in South Korea. This of course has already led to the loss of Australian high-end engineering and construction jobs.

- 3.4 The capital costs for Shell's FLNG Prelude Project are estimated to be in the order of \$12 billion. This money is being spent overseas with no benefit for Western Australia and Australia.
- 3.5 Furthermore, in April 2013, the Woodside-led consortium, which includes Shell, abandoned its plans for an onshore plant for Browse Basin gas at James Price Point, in favour of offshore FLNG. Woodside is planning three FLNG projects off the Western Australian Kimberley coast, with each expected to be similar in scale to Shell's \$12 billion Prelude Project.
- 3.6 It is the position of the MUA that the proposed Shell FLNG Prelude Project, as well as the other proposed FLNGs, will not only fundamentally compromise safety, but will also cut out local workers, cut out local content and cut out Australian employment laws and provide for a lower standard of safety and environmental protection than existing technologies. The MUA strongly opposes these developments.

4. MUA's General Position on FLNG Operations, including Safety

- 4.1 As the Committee would be aware, the MUA made a submission to the 2013 inquiry into the economic impacts of FLNG operations.
- 4.2 In this regard the MUA commends the Committee's finding that the use of FLNG technology, instead of onshore gas processing, would negatively impact upon WA industry, while also undermining the state's domestic gas supply and public revenue base. The Committee also reported that the Commonwealth Government gave inadequate consideration to these implications in so quickly supporting the proposed use of FLNG technology to develop Australian natural gas resources for export. These findings were essentially the same position put to the Committee by the MUA and other offshore unions.
- 4.3 It is the MUA's firm position that untested FLNG operations, as distinct from pipelining gas for land-based production, will have a negative impact on the maritime industry. Not only will FLNG operations impact negatively on the economy, it is inherently less safe compared with land-based operations.
- 4.4 LNG is extremely hazardous. The work being done at sea is complex and risky. FLNG facilities will be located far from emergency response, in an area prone to cyclones. This arrangement will inevitably lead to reduced safety for maritime workers and a higher risk of devastating harm to the marine and coastal environment in the event of a major catastrophe. It is the MUA's position that onshore processing must be the norm to maximise the safety of workers and the marine environment.

5. Safety

- 5.1 It is of considerable concern to the MUA that FLNG technology is to date untested, as there are no such facilities operating anywhere in the world.
- 5.2 Also FLNG, being an untested new technology, is not covered by existing international and national safety regulations, codes and standards. By way of example, existing regulations do not cover cryogenic risk within the process modules of proposed FLNG. On this basis alone the MUA opposes FLNG.

Seafarer Crewing

- 5.3 Despite these FLNG operations being non-self propelled, they are nevertheless a ship like structure that floats and operates on the high seas. The MUA points out that a range of marine functions will be required over the life of the vessel, including vessel-to-vessel cargo transfer, towage, tie-up and let-go, diving and site inspections. To guarantee the safety of all workers and the marine environment, FLNG facilities must be crewed with properly qualified seafarers holding appropriate high-risk licenses who can maintain safety to international and Australian standards.
- 5.4 Mooring, manoeuvrability and stability features require specialist marine skills that derive from the Standards of Training, Certification and Watchkeeping Convention (STCW) – the IMO Convention covering training and professional standards for seafarers. The STCW Convention and all other IMO Conventions must apply to FLNG operations.
- 5.5 The MUA has grave concerns about placing an extremely hazardous activity in the hands of workers who may have not been trained to Australian standards and who do not hold Australian qualifications and high-risk licenses. This is not a safe approach.

Emergency Response Safety Concerns

- 5.6 Additionally, the MUA has grave concerns about the ability of a FLNG facility to respond to an emergency, as well as the ability of onshore emergency services to respond to an emergency, given the remote areas where FLNGs are proposed to be located. The waters off the remote Kimberley region are a difficult maritime environment to say the least and an area susceptible to cyclones. This is a major concern given that the safety of the workforce and the safe evacuation of the workforce is the key consideration in the event of a significant incident that could pose a risk to workers.
- 5.7 Also, in an event of abandonment of an FLNG vessel, there are unanswered questions regarding the operation of lifeboats and other life flotation devices. Further, it is not known how the vessel would respond to a significant hull breach where the vessel is listing and what effect this would have on launching lifeboats.

Design Safety Concerns

- 5.8 There is inherent design safety concerns associated with FLNG.
- 5.9 Unfortunately there is very little independent information available on the safety risks associated with FLNG design.
- 5.10 However, in a paper delivered to the LNG 17 Conference, Houston, USA, April, 2013, Jerome Hocquet raised significant safety risks associated with FLNG design. In his paper Hocquet said FLNG facilities present new challenges in safety from the combination of complex processes, including, hazardous process fluids, the harsh marine environments and a reduced footprint compared to an equivalent onshore installation. He said the main process hazards onboard an FLNG would be gas explosions within the topsides, jet fires and cryogenic spillage.

5.11 Hocquet further said FLNGs will be the largest floating offshore installations in the world, but at the same time they will typically be only one-sixth the size of an onshore plant of same capacity, thereby limiting the space available for layout of process equipment within the topsides, as available space within the substructure is mainly dedicated to storage tanks and marine equipment.

NOPSEMA Safety Concerns

5.12 The MUA and other offshore unions are not alone in having grave doubts about the safety of FLNG operations. Even NOPSEMA, the national offshore safety regulator, in a written submission to the Committee's 2013 inquiry, identified the following FLNG safety issues: loss of hydrocarbon containment; collision with facility; helicopter crash; structural failure; loss of position; dropped objects; and loss of cryogenic fluid containment.

Chevron's Safety Concerns

5.13 The large energy company Chevron also raised significant FLNG safety issues when its Australian Managing Director, Roy Krzywosinski, gave verbal evidence to the Committee's 2013 inquiry. Krzywosinski told the Committee that in Chevron's view, there is still a lot more development work that needs to be done before the company would characterise floating LNG as a proven technology.

5.14 Krzywosinski also told the Committee there were unanswered 'safety case' questions over the use of FLNG to develop remote gas fields, particularly involving cyclones and plant maintenance. He told the Committee:

For us, there are still some unanswered questions, including the safety case for extreme weather locations - those locations, for example, including high or frequent cyclone areas - and questions such as: how is the vessel and the people on the vessel managed during these extreme weather events, and how are annual plant maintenance turnarounds conducted, considering the large number of people required to effectively carry out a turnaround program? With this in mind, it is unclear to us how these issues impact on the continuity of operations on a day-to-day basis - specifically, the availability and reliability of these facilities when compared with landbased plant facilities.

Workplace Health & Safety Legislative Coverage Concerns

5.15 MUA has significant concerns as to the motives of some offshore resource industry companies. By adopting FLNG, operators will escape the more rigorous onshore safety regulation.

5.16 The operation will be at the junction of two separate safety jurisdictions – the maritime jurisdiction covered by AMSA, under the *Occupational Health and Safety (Maritime Industry) Act 1993* (Cth), and the offshore regime contained in Schedule 3 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth) (known as the OPGGS Act). This will create much jurisdictional confusion. As an example, the facility itself would be covered by the offshore regime and adjacent maritime functions such as vessel supply would be covered by a separate set of laws.

- 5.17 By moving the entire operation offshore, the hazardous operation will not be covered by on-shore safety laws, such as the Western Australian (WA) *Occupational Safety and Health Act 1984*, or its successor, the harmonised model WHS Act soon to be enacted in WA following public comment.
- 5.18 The offshore safety regime is based upon a system of self-regulation where operators develop their own 'Safety Case'. The well-known Fisher Report¹ outlined a range of serious shortcomings in the offshore safety regime. In 2012, former Federal Safety Commissioner and CEO of the National Occupational Health and Safety Commission Tom Fisher undertook a comprehensive review of the offshore safety regime in Australia.
- 5.19 The Fisher review found a range of deficiencies within the offshore safety regime compared with compared with the more modern onshore safety laws in Australia. It also found that safety performance in the offshore lags behind comparable jurisdictions. MUA is concerned that operators would go to such lengths to locate a major hazard facility such as a LNG operation offshore where it will be subject to inferior safety regulation.
- 5.20 A key problem in the offshore is the outdated approach to consultation. In modern onshore legislation, consultation is a fundamental feature². There is recognition that safe operation is more easily achieved when everyone involved in the work communicates with each other to identify hazards and risks, talks about any health and safety concerns and works together to find solutions. This includes cooperation between the people who manage or control the work and those who carry out the work or who are affected by the work.³ Currently, in the offshore regime, there is little consultation between industry operators and unions, workers, and elected HSRs in the development and operation of safety cases in the industry.
- 5.21 It is likely that the safety case (safety management system) for this hazardous facility – the largest in the world - will be developed in secrecy, without the input of workers. This is of great concern to the MUA and will not promote safety.
- 5.22 The shortcomings of the offshore safety regime were clearly demonstrated in the aftermath of the double fatality on board the drill rig Stena Clyde in Bass Strait in 2012, where workers on board, who suffered the tragedy, were reaching out to their union and other organisations, but union representatives were blocked by both the operator and the regulator from accessing the facility for many days. Blocking workers from advice and support does nothing to enhance safety, and is inappropriate in the context of a tragic fatality. This example vividly highlights the shortcomings of the offshore safety regime.

¹ *Offshore Safety Report*, Tom Fisher, former Federal Safety Commissioner and CEO of the National Occupational Health and Safety Commission, released Parliament House, Canberra, 2012.

² *Work Health and Safety Consultation, Cooperation and Coordination Code of Practice*, Safe Work Australia, 2011.

³ *Ibid*, 4.

6. Conclusion

- 6.1 For the safety reasons detailed above, the MUA maintains that the untested FLNG technology should be rejected by the Western Australian Government and, indeed, the Australian Government.
- 6.2 FLNG operations, as distinct from onshore processing, will inevitably compromise safety standards, including design risks, emergency response difficulties and inadequate workplace health and safety legislative coverage. In addition as a bare minimum FLNG operations must have proper seafarer crewing.
- 6.3 Furthermore, given the lack of information on potential safety risks for workers on any future FLNG projects, the MUA asks that the Western Australia Government commission an independent study to better understand the proposed safety of FLNG operations.