Your Ref:
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Economics and Industry Standing Committee
Legislative Assembly Committee Office
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WEST PERTH WA 6005

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Dear Committee members

**RE: Submission to Inquiry into Safety-related Matters: FLNG Projects in Australian Waters off the Western Australian Coast**

Kimberley Ports Authority (KPA) is pleased to have opportunity to respond to the Government Economics and Industry Standing Committee invitation to provide comment on safety aspects of FLNG projects in offshore Kimberley regional waters.

KPA is a recently renamed government business agency managing the governance and operations of the Port of Broome and, with the passage of enabling legislation through Parliament, the port authority will take up governance and oversight functions over the other regional ports at Wyndham, Derby and Yampi Sound.

KPA is governed by a Board of Directors whose Chairman is responsible to the Minister for Transport. KPA works closely with the state government (and where regulatory applicable, the national government) in ensuring the provision of efficient port operations and in supporting port stakeholders in terms of maritime logistics and transportation support. This support includes safety and emergency response capabilities and planning roles.

The Committee of Inquiry interests on safety-related matters for offshore Kimberley coast FLNG projects are noted as including 1) safety of workers on FLNG facilities, particularly during adverse weather events, 2) WA's emergency capacities and preparedness towards emergency and environmental response in support of FLNG disruptive events, and 3) roles and responsibilities of state and federal governments in relation to FLNG emergency situations.

## Kimberley Ports Authority Position

### Contextual Aspects of Regional FLNG Operations

Regional companies that are considering use of FLNG technology are supported by KPA at Broome for their offshore Kimberley exploration and development works. The first FLNG maritime facility is expected to be employed in Shell's Prelude gas field, approximately 250 nautical miles NNW of Broome. Woodside is expected to begin Browse development with the construction of a similar FLNG barge.

Shell FLNG construction began in 2012 in a South Korean shipyard and the barge hull has been launched. It is the world's largest floating offshore facility with a design life of 50 years.

The barge has no motive power. Specifications include: 488m length, 74m beam, and full displacement of 600,000 tonnes. The unit is designed to remain on station in category five cyclone seas and wind conditions.

Shell's FLNG barge is expected to be towed from South Korea to station in early 2016, utilising four tugs each with 220 tonnes bollard pull. March 2016 is expected to the starting point for any dedicated safety and emergency response capabilities to come on standby, and of note the north-western Australia cyclone activity sometimes extends into April.

When the FLNG barge secures to its mooring at Prelude, the towing tugs will be replaced by three standby/support tugs of 100 tonnes bollard pull and 42 metres length, and these will operate out of Broome. This means that two tugs at any one time will remain on station offshore, augmented in their support functions by up to two platform supply vessels. The tugs will provide tanker berthing services and offshore operational support, including emergency response. These standby tugs will be unable to replicate the barge towing capabilities of the four 220 tonne bollard pull vessels originally employed to tow the FLNG barge into Australian waters, however the platform supply vessels operating in the vicinity each typically possess a 220 tonne bollard pull capacity.

In addition to safety-related matters involving the FLNG barge itself, the field development fleet inclusive of pipelaying barges and supply vessels will also be subject to the preparation of safety management and emergency response plans, particularly in relation to the paucity of shelter from cyclones along this stretch of coastline. Similarly, the FLNG standby tugs themselves will require through-life safety and emergency response consideration, for example to manage the possibility of crew injuries or illness.

**Regional Weather Hazards**

Global maritime risk and safety assessments (for example those of the US Department of Homeland Security) are paying increased attention to low probability high consequences severe weather events, following the impact of hurricanes Katrina and Sandy along the east US coast - see Wakeman and Miller[1] (2013) for 'lessons learned'.

The most challenging super-storm safety task that might confront Kimberley region emergency authorities and responders is the possibility of an FLNG barge breaking adrift from its moorings, with no motive power and vessels unable to pick up a tow under prevailing sea conditions.

A worst case scenario for offshore safety planning might also take into account that severe Cyclone Olivia created a world-record wind gust of 408 km/h (253 mph) that was recorded at the Barrow Island airport on 10 April 1996. TC Olivia's severe weather conditions led to a reassessment of metocean design criteria for the region.[2]

**Regional Stakeholder Safety Preparedness**

The lead national agency for offshore oil and gas safety and environmental matters is the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). Approximately 160 safety audits of offshore facilities are performed annually by NOPSEMA

[1] Wakeman, T. H. & Miller, J. 2013. 'Lessons from Hurricane Sandy for Port Resilience', available online at http://www.utrc2.org/publications/hurricane-sandy-port-resilience

[2] Buchan, Black & Cohen, 1999. 'The Impact of Tropical Cyclone Olivia on Australia's Northwest Shelf', 1999 Offshore Technology Conference, Houston, Texas, 3–6 May 1999.

managers[3]. Another national authority with offshore safety and environmental responsibilities is the Australian Maritime Safety Authority (AMSA), which manages marine environmental protection, sea search and rescue, shipping safety and marine pollution response training. KPA collaborates in maritime safety matters with state and regional AMSA managers.

The WA Department of Transport Marine Safety section is the prescribed Hazard Management Agency for safety arrangements relating to the prevention of, preparation for, response to and recovery from Marine Transport Emergencies that occur in WA waters. Under the State emergency management plan (Westplan-MTE) the Department is able to draw upon the emergency management support of all State Government departments, Port Authorities, private port operators and other agencies and organisations that have combat responsibilities or provide support pertaining to marine transport emergency response and recovery operations[4].

KPA is required under various regulations and plans including Westplan-MTE to prepare and maintain local emergency management and safety plans and capabilities. A memorandum of understanding between the Department of Transport and KPA establishes arrangements for KPA responses to regional Marine Transport Emergencies that occur outside of regional port boundaries.

Industry and government agency training and response for offshore oil spills is assisted by the Australian Marine Oil Spill Centre (AMOSC) and the WA Department of Transport. The AMOSC organisation provides rapid response to a major oil spill anywhere around the Australian coast with a central stockpile of road and air-transportable oil spill response equipment in Geelong, Victoria. A large regional oil spill response stockpile is held in the Port of Dampier, augmented by Department of Transport equipment and stores.

The Port of Broome is utilised as a base port for vessels under Border Protection Command (Navy, Customs and Fisheries patrol vessels) all of which operate in the waters surrounding the planned FLNG locations. As well, maritime patrol aircraft operate out of the Broome and other regional airstrips. These maritime surveillance and response aviation assets have safety and security roles and response capabilities.

**Emergency Management Capacities, Mitigation and Preparedness**

In general safety terms, the multiple offshore operators who operate along the north western coastline have safety cases for their individual operations that involve assessments of risk, the mitigating and countermeasure processes for managing disruptive events, and the implementation of their safety management systems. Port of Broome operations and work methodologies have reflected and supported regional offshore industry safety measures since the 1960's.

From time to time because the port constitutes the landward end of the localised oil and gas supply chain, port authority managers are invited to participate in offshore operators' safety training, drills and exercises. Major safety incident exercises are generally conducted from individual company crisis management centres, and KPA has contributed to several of these

[3] Office of Transport Security 2012. 'Offshore Oil and Gas Resources Sector Security Inquiry", Commonwealth of Australia.

[4] Available online at: http://www.transport.wa.gov.au/mediaFiles/marine/MAC_EP_StateEmergencyManagementPlanForMarineTransportEmergencies.pdf.

exercises by both physically deploying equipment on platform supply vessels, and participating by telephone with the crisis management centre.

With the annual high level of shipping traffic passing through NW Australian waters there is safety value perceived in ensuring that recommended routes for these shipping lanes are amended to minimise the possibility of vessel collision with the FLNG facility. Precedent exists for shipping fairways in the form of designated shipping routes located off the Pilbara Ports (AMSA Marine Notice 15/2012). Longer term, an Australian Maritime Safety Authority review recommendation is that a coastal Vessel Traffic Service (VTS) should be established for the north-west coast waters[5].

In July 2014 Shell based an EC225 SAR helicopter at the Broome International Airport in safety and emergency response support of the FLNG project along with pilots, paramedics, engineers and crew. The service is on standby 24-hours a day and able to respond within 15 minutes during daylight hours and 30 minutes at night. The aircraft has a range of 300 nautical miles from the Broome airport. When the service is not required for oil and gas activities, Shell advises that it may be tasked by authorities such as WAPOL to assist with medevac and search and rescue needs in the region.

KPA has a regional ship Automated Identification System (AIS) that can locate and track vessels well offshore, thereby providing AMSA and WAPOL incident commanders with the position of a ship casualty and a suggested initial course heading for the emergency response helicopter to take. The port is also capable of operating as a local maritime emergency response centre with the usual command centre accessories inclusive of whiteboards, tabards, forms, plans and communication systems.

Additionally, the Port of Broome emergency response plans incorporate the ability to transfer injured personnel from vessels. To enhance this capability the port has on order a specific stretcher-capable man cage that enables crane lifts of an injured person on a stretcher, together with emergency medical apparatus plus a carer from vessel to wharf.

In general emergency response terms, KPA is a Nominated Regional First Response Agency under the State Emergency Management Plan (2011) with emergency response obligations along the coastline northwards from Wallal to the NT border. Figure one refers.

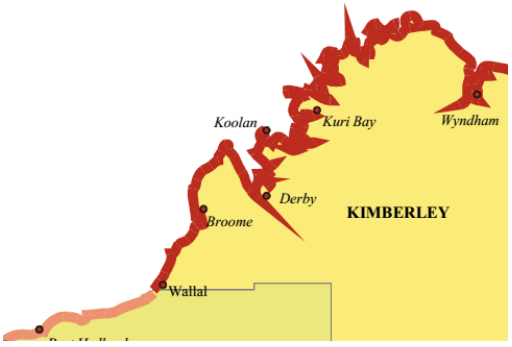


Figure 1: KPA Coastline Emergency Responsibility (WestPlan-MTE 2011).

In accordance with State Emergency Management Committee (SEMC) requirements, KPA prepares and trains personnel in oil spill response. KPA also fulfils supporting roles towards

[5] See https://www.amsa.gov.au/navigation/shipping-management/nwsm/

other agencies, as with incidents involving man overboard, missing or damaged vessels, downed aircraft, and medivac operations involving boat transfers of casualties to shore. KPA is also responsible for 1) reporting adverse events to the applicable state and federal authorities, 2) safety and maritime security in freight operations supporting offshore operations, and 3) for environmental and navigation responsibilities associated with post-disruption remediation in localities under port authority jurisdiction.

KPA holds a stockpile of oil spill response equipment which, when coupled with commercial entity stockpiles in Broome, can provide a ready source of equipment that can be sent offshore as a quick response to an oil spill, pending arrival of national stockpile equipment.

KPA has 20 personnel trained in oil spill response and remediation, and these personnel participate in regular drills and exercises. Drills and exercises take the form of waterborne activities where equipment is deployed, and desk top exercises involving multiple agencies. KPA assigns personnel to regional port state oil spill exercises, a biennial event hosted in turn by each of the port authorities. Two KPA managers are trained to national level in managing an incident control centre.

In summary, Broome as a holistic support centre is well placed to assist in safety support arrangements for the offshore FLNG operations, with two tugs that can be deployed offshore in emergencies, one of which has a firefighting capability (water and foam). The Broome airport is well equipped for fixed wing and helicopter operations, and the town hospital is large and modern. The Defence force has an Army Reserve facility in town. The road network along the coast connects with the alternate Curtin airport to the north where heavy lift aircraft might bring in equipment, field hospitals, or perform medevac rescues.

Thank you for the opportunity to comment.

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