

Assurance of TEMPSC and Associated Systems

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1. Purpose

The purpose of this guideline is to describe NOPSEMA's expectations of operators' inspection, maintenance, testing and assurance activities, and competency management as they relate to totally enclosed motor propelled survival craft (TEMPSC) and associated systems, components and procedures.

2. Scope

The scope of this guideline includes:

- a) All facilities defined by Clause 4 of Schedule 3, *Offshore Petroleum and Greenhouse Gas Storage Act 2006*
- b) All TEMPSC implemented at such facilities
- c) Implementation of the IMO circular MSC.1/Circ.1206/Rev. 1 (Measures to Prevent Accidents with Lifeboats) on all types of facilities
- d) Implementation of the IMO circular MSC.1/Circ.1486 (Guidelines on Alternative Methods for Lifeboat Drills on MODUs) on MODU facilities.

3. Abbreviations

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| ALARP | As low as reasonably practicable |
| FPSO | Floating production, storage and offtake |
| FSO | Floating storage and offtake |
| IMO | International maritime organisation |
| MAE | Major accident event |
| MODU | Mobile offshore drilling unit |
| MSC | Maritime safety committee (of the IMO) |
| OEM | Original equipment manufacturer |
| OPGGGS Act | Offshore Petroleum and Greenhouse Gas Storage Act 2006 |
| PIC | Person in charge |
| Safety Regulations | Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2006 |
| TEMPSC | Totally enclosed motor propelled survival craft, used interchangeably with "lifeboat" in this document |

4. Background

Schedule 3 to the OPGGS Act and the associated Safety Regulations are an example of a proactive, goal-setting regime, as opposed to a prescriptive rule-based system. In this regime, the general expectations for health and safety performance are set, however the detailed interpretation of the performance benchmarks and how to achieve them are the responsibility of the facility operator. One of the objectives of the Safety Regulations is to ensure that the risks to health and safety of persons at the facilities are reduced to a level that is as low as reasonably practicable (ALARP) [Regulation 1.4(3)].

Clause 9(2)(e) of Schedule 3 to the OPGGS Act requires that operators are to take all reasonably practicable steps to implement and maintain appropriate procedures and equipment for responding to emergencies. TEMPSC are generally identified in facility safety cases as major accident event (MAE) technical control measures for normally attended facilities. To comply with the OPGGS Act, appropriate maintenance and inspection procedures must be implemented to provide assurance of TEMPSC functionality, i.e. to verify that the capability to safely evacuate the facility by way of TEMPSC is available at all times.

NOPSEMA expectations with respect to TEMPSC competency management, functionality and assurance are the same for all facility types, including production platforms, vessel facilities, FPSO/FSO and MODU facilities.

IMO circular MSC.1/Circ.1206/Rev.1 (Measures to Prevent Accidents with Lifeboats) was issued in 2009. This circular contains:

- guidelines for periodic servicing and maintenance of lifeboats, launching appliances and on-load release gear
- specific procedures for maintenance and servicing
- guidelines on safety during abandon ship drills using lifeboats
- guidelines for simulated launching of free-fall lifeboats.

The IMO subsequently issued MSC.1/Circ.1486, dated 12 January 2015 to provide MODU operators with an alternative method of addressing the current MODU code requirement for 'launching and manoeuvring of the lifeboat at least once every three months with the assigned operating crew on board' (MODU Code 2009, paragraph 14.13.4.2).

NOPSEMA acknowledges that IMO circulars MSC.1/Circ.1206/Rev.1 and MSC.1/Circ.1486 are important documents and are reflective of global industry practice. However, compliance with these circulars alone will not necessarily result in management of facility risk to a level that is ALARP.

5. Inspection, maintenance, testing and assurance

TEMPSC are the primary means of facility emergency abandonment on almost all facilities in the offshore petroleum industry and facility operators are expected to provide assurance through planned inspection, testing, training and practice drills that TEMPSC are ready for safe evacuation of the facility at all times. This assurance extends to testing the water-tight integrity of the craft's hull, buoyancy, the performance of its water deluge system and the performance of the propulsion and steering systems under load. The assurance program must credibly test these elements with an adequate frequency taking into account degradation caused by harsh environmental conditions such as ultraviolet radiation, humidity, salt water,

etc. The operator's safety management system must specify how such assurance will be achieved. NOPSEMA inspectors will require evidence of assurance activities from the facility's maintenance management system during most inspections.

IMO circular MSC.1/Circ.1486 provides an alternative path to complying with the existing MODU code requirement that stipulates three-monthly launching and manoeuvring of the TEMPSC in the water. MSC.1/Circ.1486 (paragraph 7) 'encourages' the person in charge (PIC) to place the TEMPSC in the water and exercise them when 'conditions allow'. However, there is no limiting time frame specified in the IMO circular (MSC.1/Circ.1486) and an operator could conceivably (and perhaps inappropriately) adopt the 2015 IMO guideline for the duration of its operations in offshore waters. Consequently, there may be no waterborne testing of the TEMPSC (or assurance of hull, buoyancy, propulsion and deluge under load) completed until the unit is next in sheltered waters. Standard application of flag state regulations may result in an extended period, up to five years, between visits to sheltered waters. NOPSEMA considers that such lengthy periods between testing could result in safety-critical TEMPSC structure and equipment deteriorating to a point where it may not be possible to safely evacuate the facility by way of TEMPSC. Without an adequate assurance process, the facility workforce may be unaware of deterioration to the TEMPSC and associated systems and components.

Examples

A 2014 notification to NOPSEMA related to a TEMPSC that was launched and manoeuvred away from the facility under power as part of a drill. It was quickly recognised that the TEMPSC was taking in sea water through a failed deluge pump fitting on the engine and the craft was subsequently safely recovered. This failure may not have been detected if the TEMPSC had not been tested in the water.

In 2015 a TEMPSC on a MODU operating in Australia suffered a stern tube bearing failure, resulting in the propeller shaft seizing. This occurred during a routine water-borne test. It is probable that this failure was only detected as a result of the TEMPSC being launched and exercised under power.

NOPSEMA expects that all facilities, including MODUs, will undertake sufficient assurance activities such that all TEMPSC components and systems are tested with an adequate frequency to provide assurance of a continuous readiness to safely evacuate the facility, and to demonstrate that evacuation risks are reduced to a level that is ALARP. When designing an assurance plan for TEMPSC and associated equipment, facility operators should ensure their assurance activities align with original equipment manufacturers' (OEM) recommendations.

NOPSEMA considers that annual testing of watertight integrity of the lifeboat's hull, buoyancy, the performance of its water deluge system and the performance of the propulsion and steering systems under load is adequate, based on IMO's (MSC.1/Circ.1206/Rev.1) requirement of an annual thorough examination of lifeboats, launching gear and associated equipment.

NOPSEMA acknowledges that environmental conditions do not always permit the safe launching and recovery of TEMPSC. However, it is NOPSEMA's expectation that operators schedule the launching of TEMPSC and testing of their watertight integrity and systems with appropriate regard to environmental conditions and any attendant risk to members of the workforce. Consequently, operators are strongly

encouraged to develop and implement methodologies for conducting assurance activities that can be performed even in environmental conditions that limit launching and recovery opportunities.

6. Competency

Clause 9(2)(f) of Schedule 3 to the OPGGS Act requires that operators are to take all reasonably practicable steps to provide all members of the workforce with the information, instructions, training and supervision necessary for them to carry out their activities in a manner that does not adversely affect health and safety. This clause applies equally to routine and emergency activities.

NOPSEMA expects that facility operators will provide all members of the workforce with the information, instructions, training and supervision necessary to enable safe emergency abandonment of their facility at all times. To verify the continuing implementation of this capability, NOPSEMA inspectors may request evidence including, but not limited to:

- training records for lifeboat coxswains and other designated crew
- records for drills and exercises held at the facility, including records to show that all members of the facility workforce receive regular TEMPSC familiarisation
- adequate procedures for emergency drills, including abandonment drills, to ensure that risks inherent in conducting drills are reduced to a level that is ALARP
- documented passenger-loading plans for free-fall TEMPSC, where appropriate
- adequate procedures for the management of TEMPSC loading, taking into account individual passenger weights
- adequate procedures to ensure that risks inherent in performing inspection, maintenance and repair are reduced to a level that is ALARP
- records to show that the TEMPSC, associated equipment and associated procedures and systems are subject to regular independent review.

7. Related documents

N-02100-PL0025 – OHS Planned Inspection