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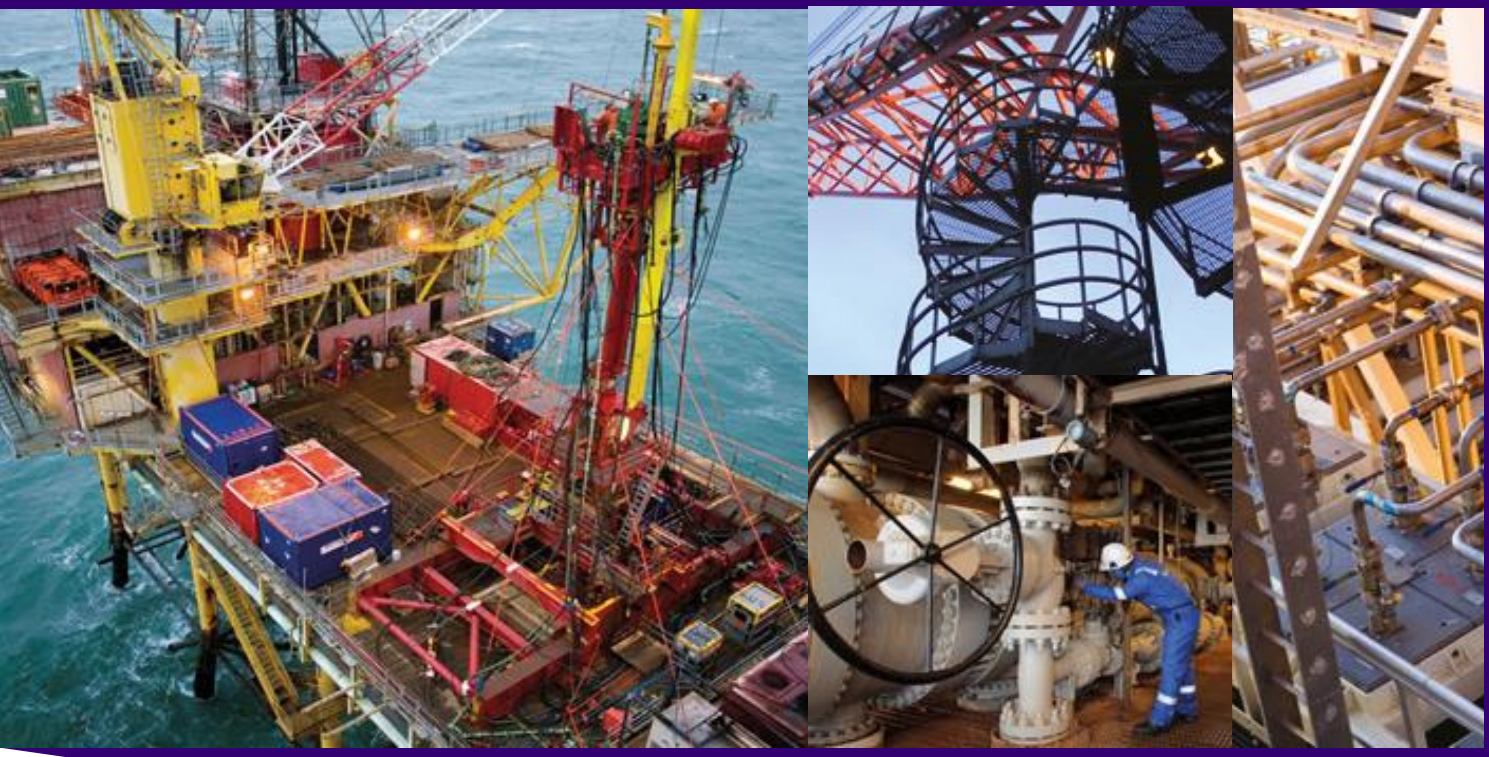
Technical Note



Operations Assessment during Emergency Response and Rescue Vessel Unavailability

HSTN005
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Introduction

In some situations, an installation's ERRV may either be unable to provide effective rescue and recovery arrangements or may have to leave station to ensure the safety of the vessel crew. Adverse weather is the likeliest but not the only circumstance of an event leading to the inability of the ERRV to provide effective rescue and recovery arrangements. Regulation requires duty holders to define these exceptional conditions when the ERRV's normal emergency response arrangements are no longer effective and the measures to be taken during such conditions to reduce the likelihood of an event which requires evacuation, escape and rescue (PFEER R.17 ACOP paragraph 232).

This document outlines the steps to be taken in such circumstances.

1 Legislative Background

Although various legislation regulates this area, the key pieces are the Offshore installations (Prevention of Fire, Explosion, and Emergency Response) Regulations, 1995 as amended on 2005 and 2015 (SI 1995 no. 743) (PFEER), which is the principal legislation governing offshore emergency response, and the Safety Case Regulations 2015 which amongst other things, requires duty holders to manage the risks arising from major accident hazards.

Regulation 17 of PFEER states:

"..the duty holder shall ensure that effective arrangements are made, which include such arrangements with suitable persons beyond the Installation, for:

a) Recovery of persons following their evacuation or escape from the Installation and
b) Rescue of persons near the Installation and
c) Taking such person to a place of safety

For the purpose of this regulation arrangements shall be regarded as being effective if they secure a good prospect of those persons being recovered, rescued and taken to a place of safety…".

The Approved Code of Practice (ACOP) accompanying the PFEER regulations states that suitable and sufficient arrangements should be in place in the event that there is a need for **persons evacuating or escaping** from the installation. This also covers if a person falls overboard or is involved in a **helicopter ditching** near the installation during take-off or landing. If any of these events were to occur, then persons should be recovered and/or rescued and taken to a safe place.

Paragraph 232 of the ACOP states that performance standards should be set to achieve a good prospect of recovery for the weather and sea conditions likely to be encountered. However, it should be recognised that there is a possibility of **exceptional conditions** in which normal emergency response arrangements may no longer be effective. Duty holders should, therefore, define such exceptional conditions and the measures to be taken in them to reduce the likelihood of an event which requires evacuation, escape and rescue.

Under the Safety Case Regulations 2015, the definition of a major accident is

a) an event involving a fire, explosion, loss of well control or the release of a dangerous substance causing, or with a significant potential to cause, death or serious personal injury to persons on the installation or engaged in an activity on or in connection with it;

b) an event involving **major damage to the structure of the installation** or plant affixed to it or any loss in the stability of the installation causing, or with a significant potential to cause, death or serious personal injury to persons on the installation or engaged in an activity on or in connection with it

c) the failure of life support systems for diving operations in connection with the installation, the detachment of a diving bell used for such operations or the trapping of a diver in a diving bell or other subsea chamber used for such operations;

d) any other event arising from a work activity involving death or serious personal injury to five or more persons on the installation or engaged in an activity on or in connection with it.

2 Duties of the Emergency Response and Rescue Vessel

The main requirement of the ERRV is to: -

- Rescue from the water or recover persons and provide them with medical aid;
- Act as a “Place of Safety” in accordance with PFEER;
- Provide on scene co-ordination, as required with relevant Installations’ Emergency Response Plan and assume control in the event the OIM abandons the installation;
- Participate fully in the execution of the installation collision avoidance strategy e.g. to monitor the Safety Zone, warn approaching vessels and the Installation of the risk of collision and prevent same where possible;
- Act as a reserve radio station;
- Assist in the event of an oil spill.

3 Preparing to manage ERRV unavailability

When it becomes clear that the ERRV may no longer be able to carry out its duties in whole or part (for any reason) and that the ability of the recovery and rescue arrangements to meet SECE performance standards will be impaired, a suitable and sufficient risk assessment shall be carried out to determine:

- Whether it is possible to continue normal operations under exceptional circumstances whilst ensuring the risk of such operation remains ALARP, and if so,
- What additional control measures must be implemented to ensure that this is the case.

When looking at these risks, the duty holder should have in mind the potential effect of any expected adverse weather/other defined exceptional conditions on the integrity of HC-containing plant and equipment, including key HC risk control systems;

Under the duty holders' risk management arrangements, this process may be referred to as an operational risk assessment and where relevant, should ideally be carried out and concluded before predicted adverse weather arrives and the ERRV leaving the field.

The operational risk assessment (or equivalent) should review all existing major accident hazards, in addition to those that may arise during the unavailability of an EERV, and their associated risks. It should assess additional major accident risks and escalation events presented by the effects of adverse weather upon the installation. Identified measures must reduce the likelihood of a major incident requiring abandonment from that presented during normal operations.

The following check list can be used by the OIM as an aide-memoir when considering measures that could be taken to reduce the likelihood of an abandonment event. It is not an exhaustive list and other actions, or considerations may be identified when undertaking the assessment.

Actions and Areas for Review during absence/reduction of ERRV cover	✔
OPERATIONAL CONSIDERATIONS 1. Length of time the ERRV will be unavailable 2. Cancel crew change helicopter operations to and from installation 3. Postpone supply vessel operations and ensure any vessel is stationed outside 500m zone and in a 'drift-away' position 4. Planned activities and current permits to be reviewed. Specifically, but not exclusively: • Current hot work activities to cease and planned activities postponed • Current work on F&G system to completed as a priority and planned activities postponed • Current overside working activities to cease and planned activities postponed • Confirm that breaking of containment on hydrocarbon systems has stopped and/or will not commence. • Confirm any well tests have stopped/will be stopped and any planned activities postponed • Drilling ops - entry into reservoir should be not be allowed • Wireline/coil tubing activities should be suspended • Review all lifting operations for suitability and in particular, cease lifts over live plant 5. Workforce involvement – involve safety reps in discussions and risk-based decision making 6. Review SIMOPS activities 7. Jack Ups – delay jacking into the water/preload operations 8. Consider the effect of 'green water' on the stability of the FPSO/MODU 9. Review FPSO/MODU stability/mooring arrangements 10. Consider action(s) to be taken in the event of a collision risk alert 11. Review pre-existing plant integrity issues e.g. defined life repairs 12. Assess plant inspection and maintenance status to gauge 'plant health', including historical evidence of any vulnerability of HC-containing plant and equipment; 13. Where time permits, consider down-man of non-essential personnel **NOTE – No activity should be postponed if in doing so, the safety and/or integrity of the installation is put at risk**	
SECE STATUS 1. Confirm that collision risk monitoring arrangements are available 2. Confirm the availability, reliability and functionality of relevant SECEs relating to major hazard risk control systems and that Performance Standards are being met: – Riser ESDV's (closure and leak rate). – F&G system and operability (challenge any inhibits) – TEMPSC/life rafts/means of escape to sea are available (PMR records checked where necessary). – TR pressurisation (PMR records checked). – Active fire protection is fully available. – Fire protection jackets are in place and suitably secured (high risk areas) – Flare system (fully operational) – Nav aids (PMR records checked) – Communications (test all forms of comms) – UPS (PMR records checked)	
ORA REVIEW 1. Assess active ORA's and reconfirm mitigating actions are in place taking due account of the lack of rescue and recovery capability. 2. Review cumulative risk level with support from relevant technical authorities	

4 REFERENCES

1. The Offshore Installations (Prevention of Fire and Explosion, and Emergency Response) Regulations 1995
2. Offshore Installations (Offshore Safety Directive) (Safety Case etc) Regulations 2015 (SI 2015/398) (SCR 2015)
3. Management of Health and Safety at Work Regulations 1999 (SI 1999/3242) (MHSWR)
4. Oil & Gas UK Industry Guidelines for the Management of Emergency Response for Offshore Installations (Issue 3)
5.

4.1 Related Documents

Oil & Gas UK *Industry Guidelines for the Management of Emergency Response for Offshore Installations (Issue 3)*

These guidelines provide guidance for duty holders and those parties they need to consult and/or co-operate with when developing or assessing their Emergency Response (ER) arrangements. In particular, they address the development and assessment of offshore ER arrangements for dealing with potential major accident events on or near the installation and for rescue and recovery arrangements.

4.2 Terms Used

1. This technical note makes reference to an Operational Risk Assessment as the sole means of assessment, but it is recognised that an operator may have an equivalent process (e.g. safety critical element impairment risk assessment). In any case, the Operator's process should make it clear what level of involvement and operational 'sign-off' from relevant technical authorities/operational managers is required.

2. The term '**green water**' is used to distinguish between the spray (small amounts of water and foam) flying around and the real solid seawater on the deck

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