



Title	Considerations for Walk to Work and Multi Operation Vessels – Regulatory Guidance		
Publication Date	February 2019	Document Identification	Offshore Information Sheet 1/2019
Review Due	February 2022	Internal Reference	2019/35078
Target Audience	All stakeholders	Document Owner	HSE ED3.3
		Open Government Status	Fully Open

Introduction

This information sheet provides guidance on compliance with the UK regulations relating to walk to work (W2W) activities in connection with the offshore oil and gas sector. The scope of this document relates solely to W2W activities. Section 1 focuses on W2W activities at installations that are structurally vulnerable to large vessel impact, and section 2 focuses on W2W activities where additional emergency rescue and recovery (ERR) services are being proposed. Section 3 provides a description of the content and management of the safety case.

This document does not relate in any way to vessel collision issues associated with errant vessels. When considering any of the activities covered by this note duty holders should ensure they have given adequate consideration to the relevant technical, human factor and safety management issues which may be relevant to the management of major accident hazards associated with their operations.

This guidance only covers the marine aspects of W2W operations at structurally vulnerable installations and combined emergency response and rescue vessel (ERRV) / W2W operations. The primary purpose of this document is to provide operational information which may support a walk-to-work safety case submission.

Within this document there is an assumption that ALARP (as low as reasonably practicable) will be considered where appropriate, and industry has an understanding of the principles of ALARP. For this reason it has not been referenced throughout the document.

Background

Industry is increasingly using W2W as a means of access to their offshore installations in the United Kingdom Continental Shelf (UKCS) and are exploring additional activities which can be undertaken by W2W vessels. As a result of these developments, including increasing vessel size and additional work scopes, HSE (as part of the Offshore Safety Directive Regulator (OSDR)) has undertaken a review of regulation and compliance expectations for these activities.

The purpose of this sheet is to provide clear guidance to duty holders on the matters to be considered when assessing the suitability of W2W / multi role operations. Duty holders can



use this guidance when preparing their demonstration that risks associated with W2W activities have been reduced so far as is reasonably practicable. As a result, this note crosses a breadth of technical specialisms and should be read in the context of the expectations of all relevant disciplines including Emergency Response, Structures and Inspection Management Teams (IMT).

Section 1

Walk to Work Activities

Offshore major accident legislation requires duty holders to consider their operations and implement adequate management arrangements to enable safe operations. To this end, HSE considers that W2W activities should be managed in line with similar special marine activities which evaluate risk and implement sufficient mitigation. HSE considers W2W operations to present different and possibly higher risks when compared with other marine operations, such as supply vessel activities. This is due, for example, to the size of W2W vessels, the fact that most systems involve personnel transferring across a moving gangway, and the constraints imposed on vessel manoeuvrability due to the limited movement of some gangway systems. Duty holders are expected to implement robust and reliable measures to control the specific risks associated with W2W activities.

To enable delivery of safe, compliant operations, duty holders should consider W2W activities in their entirety, identifying key areas which may impact on standards. In the context of W2W, this is likely to extend beyond direct marine operations to other areas that may include but are not limited to:

- procurement
- contract management
- vessel and gangway selection and compatibility
- contractor competency
- management of change (MOC)
- emergency response

It is essential that duty holders ensure those with key roles are made aware of factors which may influence operations.

Organisations should recognise within their marine policy documents that W2W activities are a special marine activity and may present higher risks to personnel. This could be included in existing marine operations manuals or may be in a standalone document, but it should clearly describe the manner in which W2W operations are to be planned, managed and performed, just as duty holders currently do for rig moving operations or diving operations.

As with all operations it is essential that all risk evaluations are suitable and sufficient, and that control measures implemented are commensurate with the risk. When considering W2W activities, duty holders should consider a range of factors when deciding on the suitability of the operations being proposed, described in more detail throughout this sheet. Duty holders should also recognise that in addition to the application of overarching marine principles, there may be local factors specific to an asset and / or location which may influence that consideration, such as availability of suitable gangway landing points, whether the installation has a helideck, proximity of other installations, etc.



Structural Considerations in Vessel Selection

Very early in the planning process, duty holders should consider if the installation is designed to withstand a collision with the vessel. In particular the following issues should be considered:

- Global failure of the structure. This may include direct impact on a key structural element such as a leg
- Local failure leading to global failure. This could be impact with a brace element that will consequently result in overall failure of the structure
- Failure of a system or safety and environmental critical element (SECE) which will lead to a more significant consequence for the structure. This could include direct impact on exposed risers or even failure of a brace which could then dislodge risers within the footprint of the jacket.

For duty holders, it may appear advantageous to select larger W2W vessels to perform marine tasks. This is in part due to large deck space, sufficient accommodation areas, and greater gangway “up time” for W2W operations. However, duty holders must consider there may be an increase in risk to an installation by using a larger vessel, in particular the possible collision energy imparted by a larger vessel against the ability of the installation to withstand the collision. This is particularly relevant in combined W2W / ERRV roles where the vessel involved in the collision is also considered to be the means of rescue and recovery for those people on the installation and may be the means of evacuation.

Duty holders must consider vessel displacement during the vessel selection process. British Standards BS EN ISO 19902:2007 and BS EN ISO 19903:2006 provide a formula for calculating the energy of a vessel striking an installation at 2m/s. The 2m/s value is commonly used as it represents a vessel drifting in a sea state with significant wave height of approximately 4m. It is recommended that duty holders use this formula as a benchmark to determine whether the kinetic energy of the vessel exceeds the installation accidental collision energy value. Duty holders may wish to use an alternative standard or calculation in addition to and comparable with BS EN ISO19902:2007 or BS EN ISO19903:2006 as part of their case for safety.

Duty holders must also consider the possibility that low energy collisions could result in a major accident, such as collisions with exposed risers.

If the vessel has a displacement that imposes accidental collision energy in excess of the calculated values, it is reasonably foreseeable that, in the event of a collision, the vessel could cause substantial or catastrophic damage to the installation requiring immediate evacuation and subsequent rescue and recovery. HSE considers these installations to be structurally vulnerable to large vessel impact and as a result the use of W2W may pose a significant threat to the installation. This would not prevent a duty holder performing W2W at these installations but as the initial level of risk under consideration is greater, the greater the degree of rigour required to demonstrate the risks have been reduced as far as is reasonably practicable. This sheet provides guidance on the range of mitigation measures that may be utilised.

When considering vessel selection, duty holders must be aware of the requirements of the principles of risk management as laid down in the Management of Health and Safety at Work Regulations 1999. Where the potential for exceeding the installation accidental collision value can be reduced via vessel selection, then this option should be pursued i.e. where appropriate avoid risk at source by procuring smaller vessels.

If it is not possible or appropriate to procure smaller vessels duty holders may elect to use a vessel the size of which, in the event of a collision, increases the possibility of severe damage or structural collapse of the installation. HSE expects this risk to be managed by means in addition to the typical control measures such as dynamic positioning, marine procedures or bridge competence. There are documented incidents of vessels losing position or colliding with an installation despite having these control systems in place. Duty holders must consider additional control measures, for example a sufficient number of gangway landing points in optimal positions taking into account emergency response arrangements, proximity to hazards, and allowing the vessel to operate in a drift off position.

It is not the intention of this guidance to direct duty holders towards selecting smaller vessels if the smaller vessel is deemed inappropriate or inadequate. Vessels must be selected on their ability to maintain an adequate station keeping footprint and provide sufficient power management redundancy, as well as other vessel selection criteria. However, where more than one vessel is available that provides a comparable degree of station keeping and redundancy the duty holder should consider possible collision impact energy, as well as considering the wider benefits and operability range of a larger vessel.

Management Arrangements and Controls

Marine procedures: Before undertaking W2W activities, duty holders should review the suitability of their marine procedures to determine if they are sufficient to deliver management of the specific activities being proposed. Procedures should be task specific and targeted at either asset level or class of installation as appropriate.

Procedures should capture relevant local factors which may influence the choice of mitigation measure(s) i.e. evaluation of structural response in the context of W2W. It is essential that arrangements are robust enough to deal with specific issues which may arise from W2W activities and any associated risk this type of operation may introduce. Duty holders should consider the potential hazards to the vessel from the installation, such as gas flaring, installation exhausts etc, and the hazards to the installation from the vessel, such as collision risk. Where existing marine controls are not sufficient then these should be reviewed and improved to enable compliance to be achieved.

Where management and procedural controls play a significant part of the risk reduction measures, duty holders must ensure that a human factors approach has been taken to understanding the task (task analysis) and the factors affecting its successful outcome (human error analysis). Any procedures, instructions and training must incorporate the outcomes of the task analysis and human error analysis.

More information on expected marine controls can be found in the submission guide on pages 15 and 16 of this document.

Management of Change: Duty holders should be aware of the possibility of change at various stages of the process and understand any implications of this change on the management of health and safety.

Emergency Response: Duty holders should review and, if necessary, revise their emergency response plans to take into account W2W operations.

Communication: Duty holders should consider the legal duty to co-operate and communicate information which may be relevant to the management of major accident hazards. Management arrangements should adequately document how this will be achieved, and make it clear how information will be shared and communicated with all relevant parties. This is typically done via bridging documents (or equivalent) outlining how the different parties safety management systems will be integrated, the emergency procedures to be followed and roles and responsibilities of individuals / organisations during general running of the project and in an emergency.

Work Force Engagement: The work force should be engaged at the earliest opportunity.

Competence: Duty holders should ensure that they have access to an adequate level of competent advice in relation to offshore marine operations and management of health and safety. For example, in the case of W2W marine operations, the competency would be based around the control and operation of vessels in close proximity to offshore structures, knowledge of the specific W2W gangway, its limitations and any constraints it imposes on the vessel, and knowledge of the specific challenges of vessel operations in North Sea conditions. Where this competency is not available in-house then the duty holder must ensure they have a robust system to identify and source the requisite skills. When considering competency requirements, duty holders must also ensure they have arrangements to evaluate the variety of skills across the breadth of activities being proposed i.e. different people / skills may be needed at different stages of the job. It is also essential that competencies are specific to the proposed activities. During the W2W planning process duty holders should identify key areas where specific competencies are required, such as marine operations, failure modes and effects analysis (FMEA) review, regulatory compliance and structural integrity. Consideration should also be given to the necessary numbers of personnel to deliver the marine activity to standard with an adequate level of supervision.

Where 3rd party contractors are appointed then the duty holder should have management arrangements to ensure the suitability and competence of the 3rd party. Duty holders must recognise that they can sub contract the activity but not their responsibility for health and safety under law; and must demonstrate that duty holder accountability is embedded in the contract and bridging documents etc.

Monitoring and Assurance: Duty holders should consider how to achieve effective monitoring throughout W2W activities, both high level and day-to-day. It is essential that detailed planning and preparation of W2W activities are implemented both offshore and onshore and that their efficacy is routinely monitored.

Monitoring management arrangements



Duty holders should determine the need for monitoring their management arrangements to gain a level of assurance regarding W2W operations. Such monitoring may take place on a periodic basis and consider, among other things:

- compliance with management arrangements
- bridging document arrangements
- specialist contractor performance
- compliance with competency matrix etc.
- compliance with industry guidelines (such as 500m zone management)

To gain the maximum value from these monitoring activities it is likely these will be undertaken by a person of suitable seniority with activity specific competence.

Monitoring the operation

Duty holders should implement a system to regularly monitor the marine operation. This level of monitoring will likely focus on adherence to localised procedures and will utilise one or more appointed persons with this procedural knowledge.

Duty holders may decide to appoint a marine representative to sail on the vessel to monitor the activities, or duty holders may decide to perform more frequent marine assurance visits during the early stages of the campaign, particularly if they have less experience of W2W campaigns. The most effective means of monitoring may involve a combination of these, thereby removing the responsibility for monitoring from a single person.

Marine assurance visits should include a focus on adherence to the marine procedures, including the W2W vessel operators' procedures. Duty holders should also assess the effectiveness of the procedures against the lessons learned from the crew during the early stages of the project, and where necessary revise the procedures to reflect any limitations or improvements identified.

If a duty holder decides to appoint marine representatives during the initial period, or throughout the W2W campaign, they should be aware marine representatives operate more effectively and have a greater impact on the project when they are engaged before vessel mobilisation and sailing. Ideally they should attend hazard identification risk assessment (HIRA) and other project meetings. This will ensure they have a good understanding of the project, the risks, the company procedures and the expectations upon them.

Audit / Review: The duty holder must ensure they implement adequate audit and review arrangements.

Hierarchy of Controls

To enable adequate management of W2W activities consideration must be given to the combination of structural, marine and safety management factors. Duty holders must be



compliant with the Hierarchy of Control as laid down in the Management of Health and Safety at Work Regulations 1999, Schedule 1: General Principles of Prevention.

Progression through the Hierarchy of Control when selecting mitigation measures is a **legal obligation**. Progression through the stages is not acceptable until the requirements of the preceding step are proven not to be reasonably practicable.

In the context of W2W the stages of the Hierarchy may look like the following:

- | | |
|---|--|
| Eliminate the risk: | <p><i>Re-design the job or substitute so that hazard is removed or eliminated</i></p> <p>Replacement of W2W with a lower risk transfer method (HSE recognises that, in practice, this may not be available)</p> |
| Substitute: | <p><i>Replace the activity / process with a less hazardous one</i></p> <p>Selection of a suitably sized vessel to reduce or remove the potential hazard associated with structural vulnerability</p> |
| Engineering Controls: | <p><i>Use work equipment or other measures to reduce hazard potential</i></p> <p>Selection of a suitably designed vessel / dynamic positioning (DP) system / marine equipment / gangway system with proven ability to perform to required standards.</p> |
| Management Arrangements: | <p>Implementation of adequate management arrangements to enable sufficient control of risks associated with activities.</p> |
| Personal Protective Equipment (PPE): | <p>Introduction of protection at an individual level</p> |

As part of a demonstration associated with undertaking W2W activities HSE would expect to see evidence of compliance with the above process. It is not acceptable to skip stages.



Section 2

Combined ERRV / W2W Vessels

This section describes the factors to be considered when determining if ERRV responsibilities can be met by vessels that combine W2W activities with evacuation, rescue and recovery duties. The requirements of this section should be considered **in addition** to those outlined in section 1.

The purpose of this guidance is to ensure a consistent approach is taken when evaluating if the proposed combined W2W / ERR arrangements meet all the requirements of The Offshore Installations (Prevention of Fire and Explosion, and Emergency Response) Regulations 1995 (PFEER) (in particular regulations 15 and 17).

At the end of this section there is a simple flow diagram that can be used as a tool to determine whether HSE can consider accepting a case for a combined ERRV / W2W vessel.

Means of Evacuation

Where the W2W vessel becomes the normal means of getting people to and from the installation duty holders may consider the vessel as the preferred means of evacuation. For PFEER regulation 15 the approved code of practice (ACoP) <http://www.hse.gov.uk/pUbns/priced/l65.pdf> requires duty holders to consider any constraints on the use of the preferred means of evacuation by weather conditions, the nature and location of the emergency, and the time available to evacuate. Duty holders must develop evacuation procedures to ensure the evacuation can be completed safely and within a realistic timeframe.

Determination of a realistic timescale should include the time required to set-up in dynamic positioning (DP) mode and approach the installation in a safe and controlled manner. Duty holders may wish to utilise an evacuation procedure which differs from the normal DP set-up procedure in order to reduce the time required to evacuate personnel, in which case duty holders must be able to demonstrate that any changes to the normal DP set-up procedure have been properly assessed including, where necessary, discussion with system manufacturers, and DP operators made aware of any implications or limitations to the DP system during evacuation.

Where the W2W gangway is the sole means of evacuation it must remain available while personnel are on the installation. This does not mean it must remain connected at all times personnel are on the installation, but it should be capable of reconnecting within a period commensurate with the temporary refuge (TR) endurance period.

Structural Considerations

As referenced in section 1, duty holders should consider structural vulnerabilities which may arise from combined W2W / ERRV activities. Duty holders must consider the possible collision energy imparted by a larger vessel against the ability of the installation to withstand the collision. In particular specific consideration should be given to the fact the vessel involved in the collision is also the means of rescue and recovery for those people on the installation, and may also be the means of evacuation.

If the kinetic energy of the vessel is in excess of the installation accidental collision energy value it is reasonably foreseeable that the vessel could cause substantial or catastrophic damage to the installation requiring immediate evacuation and subsequent rescue and recovery.

In these circumstances it is doubtful the duty holder would be able to demonstrate the W2W vessel would be able to act as the means of rescue and recovery due to the likelihood that the vessel could become entangled with the installation, or sustain damage which impaired its rescue and recovery capability. If this was to occur, the vessel could no longer be considered a place of safety and therefore the duty holder could not demonstrate a good prospect of recovery. On this basis HSE will only accept cases where it is demonstrated that alternative arrangements for rescue and recovery, and place of safety, are available that meet the relevant performance standard.

Adherence to Performance Standards

Duty holders should ensure that any submission for combined W2W / ERRV operations includes a description of the method used by the duty holder to demonstrate compliance with rescue and recovery performance standards. If the method involves mathematical extrapolation of data, the duty holder must be able to demonstrate the mathematical method is suitable for the proposed operation, in particular, vessel size, manoeuvrability, and equipment. Mathematical extrapolation that relies on existing data compiled from across the industry, or mathematical formula based on typical ERRV characteristics, may not be suitable for vessels which do not fit with typical ERRV characteristics. The same may apply to rescue and recovery equipment that is non-standard and may not have a sufficient amount of supporting historical data from which to enable accurate extrapolation.

Where necessary, HSE may request the duty holder and the provider of trials extrapolation services to provide a description of the extrapolation calculations. Also, in accordance with Oil and Gas UK (OGUK) / Emergency Response and Rescue Vessel Association (ERRVA) ERRV Management Guidelines <https://oilandgasuk.co.uk/product/emergency-response-rescue-vessel-management-guidelines-issue-6/>, duty holders should note that a demonstration of ability to meet performance standards should include both extrapolated modelling results and continuous in-field exercises.

In selecting a vessel for combined W2W / ERRV operations, the duty holder should consider if the vessel is able to provide the same degree of rescue and recovery provision as a fully certified ERRV suitable for the particular location, including the resources available on the vessel to be able to consider it a Place of Safety. The best case is to have a vessel which is ERRV certified; however, HSE will consider submissions for non-certified vessels providing the duty holder can provide a detailed demonstration that the arrangements are equivalent to or better than existing industry good practice (OGUK / ERRVA ERRV Vessel Survey Guidelines <https://oilandgasuk.co.uk/product/emergency-response-rescue-vessel-survey-guidelines-issue-7/> and OGUK / ERRVA ERRV Vessel Management Guidelines <https://oilandgasuk.co.uk/product/emergency-response-rescue-vessel-management-guidelines-issue-6/>).

In the case of W2W vessels covering some, but not all, rescue and recovery provision the duty holder need only demonstrate equivalency for those particular operations. An example would be a W2W vessel that also provides overside work cover, but does not



provide helicopter or abandonment cover. In this case it would be necessary to demonstrate equivalency for overside cover only. Vessels that provide limited cover are less likely to have Maritime and Coastguard Agency (MCA) ERRV certification so the requirement for a detailed demonstration of equivalent standards as described above would have to be met for the equipment and systems used to respond to an overside cover incident.

Availability of rescue and recovery arrangements

The rescue and recovery provisions on the combined ERRV / W2W vessel must remain fully available throughout the operation. The primary role of the vessel must be rescue and recovery and the secondary role W2W. HSE considers this to mean there must be sufficient resources assigned to rescue and recovery that are not involved in any other operation that would prevent them from immediately undertaking rescue and recovery duties. This includes personnel required to man, launch, operate and recover any daughter craft or fast rescue craft (FRC), and in particular includes personnel on the bridge who are needed to coordinate rescue and recovery without also being responsible for the W2W activity. Duty holders must be able to demonstrate to HSE that W2W operations do not interfere with or impinge on the primary role of rescue and recovery.

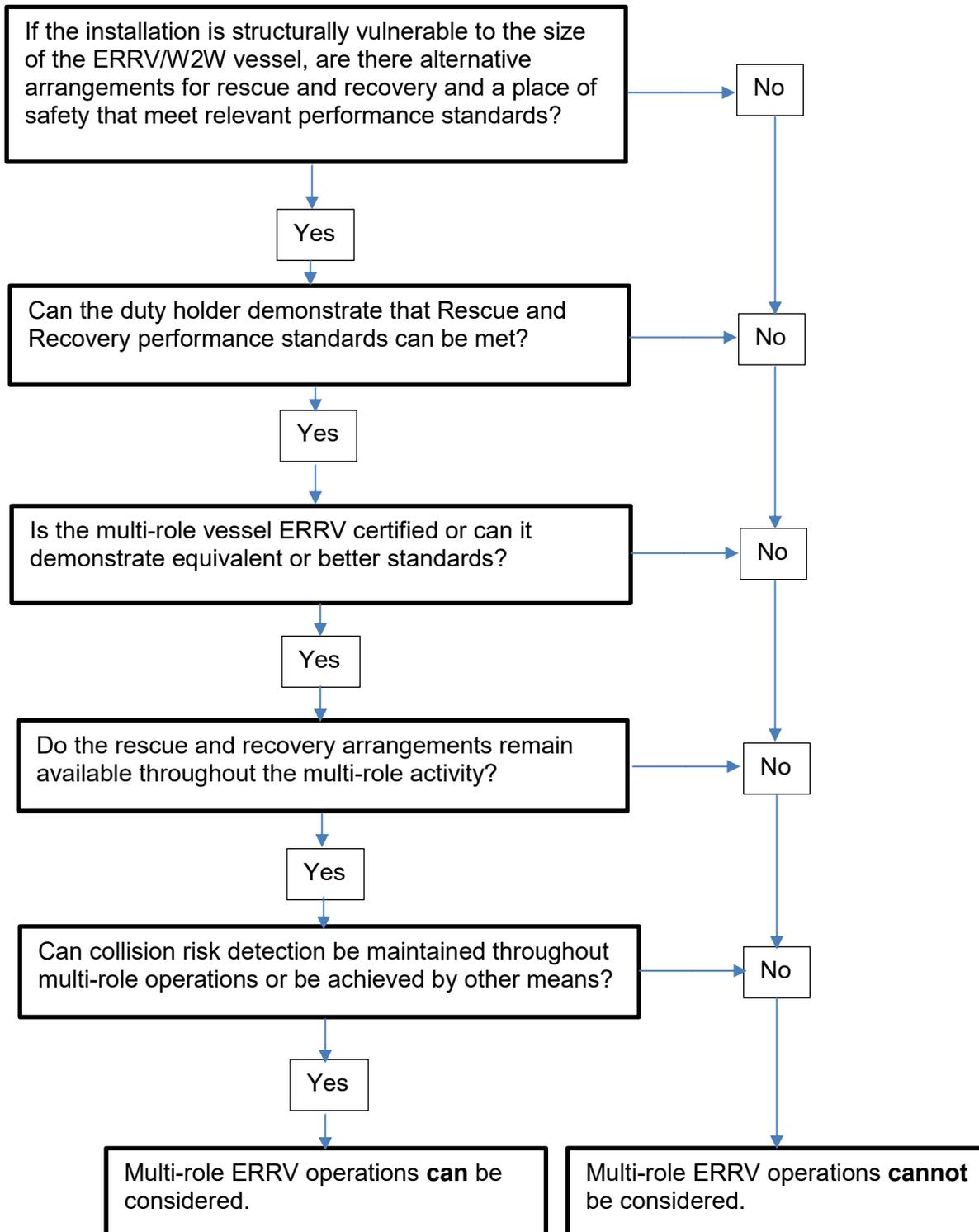
Duty holders must also consider any additional equipment on the vessel, such as W2W gangway systems, and ensure the location of such equipment does not impinge on rescue and recovery equipment.

Collision Risk Detection

Where multi-role vessel RADAR or other equipment, such as RADAR supplemented by automatic identification system (AIS), is used to detect potential collision risk with an installation, the operation must be planned to ensure the required level of collision detection can be maintained throughout the operation, so far as is reasonably practicable. Duty holders must ensure there are arrangements to monitor collision detection that are not impaired by the additional activity by, for example, lack of bridge resources or personnel engaged in other activities other than collision detection. Collision detection coverage may be partially interrupted by blind spots during operations in close proximity to an installation. Duty holders must be able to demonstrate that the period of time required to perform close proximity operations does not affect collision detection effectiveness.



The following flow diagram can be used as a tool to determine whether HSE can consider accepting a case for a combined ERRV/W2W vessel.





Section 3

Safety Case Management and Content

The safety case is the means for duty holders to make an adequate demonstration of safety as required by offshore major accident legislation and also any relevant statutory provisions (RSP's). The safety case must provide 'sufficient particulars' (i.e. enough information to show that the required demonstrations have been made). This requirement applies both to new safety cases and to revisions submitted under various regulations.

Management of Material Changes: Duty holders should familiarise themselves with factors which may trigger a material change of their asset's safety case. The Guidance documents L154 <http://www.hse.gov.uk/pubns/books/l154.htm> and L30 <http://www.hse.gov.uk/pubns/books/l30.htm> provide the details of what triggers a material change and what will be assessed during the process. If the duty holder is unsure of any aspect of safety case management they should approach their Focal Point Inspector for clarification.

The Offshore Installations (Offshore Safety Directive) (Safety Case etc) Regulations 2015 (SCR 2015), Guidance Document L154 Paras 292 and 293.

Duty holders should recognise that where a current safety case does not make reference to W2W activities being undertaken then the expectation is this would trigger a material change to the safety case if proposed. Similarly, if proposed multi role operations were significantly different to the arrangements in the current accepted safety case then this may also meet the criteria for a material change. It is worth noting that anything which significantly impacts on standards of health and safety, even if the change is considered to be an improvement, then this may meet the criteria for a material change. Additionally, anything which materially changes the basis on which the current safety case was accepted would constitute a material change to the safety case. Finally, duty holders should also recognise that all material changes should be referred to their verifier for comment.

Management of Major Accident Hazards: The safety case should demonstrate that all major accident risks have been considered and adequately evaluated. Therefore, HSE would expect to see the potential for a major accident from vessel collision being considered in the safety case as part of the SCR 2015 Regulation 16 / PFEER Regulation 5 requirements. Additionally, duty holders should recognise that major accident scenarios will often exist even in circumstances where the asset has been made hydrocarbon free.

SCR 2015: Regulation 16 Management and Control of Major Accident Hazards PFEER: Regulation 5 Assessment

Arrangements for Evacuation, Rescue and Recovery: PFEER Regulation 15 places duties to consider the equipment, systems and arrangements necessary for the provision of adequate evacuation arrangements. This provision will encompass both plant / equipment and management arrangements which cumulatively will allow for effective evacuation of personnel.



Evacuation arrangements should be commensurate with the risk and there should be a clear line of sight between the findings of the PFEER Regulation 5 assessment and the arrangements provided. Additionally, duty holders should recognise the close association between Regulation 15: Arrangements for evacuation and Regulation 17: Arrangements for Recovery and Rescue.

Where the findings of the PFEER assessment change then consideration should be given to any impact on arrangements for evacuation, rescue and recovery.

Availability, functionality and reliability of ERR arrangements: Following the PFEER Regulation 5 assessment and as part of the development of adequate arrangements, the duty holder should determine adequate performance standards for SECEs and, where appropriate, specified plant relevant to EER activities. In the development of performance standards, duty holders should consider functionality, availability, reliability, survivability and any relevant interactions to enable an adequate determination of suitability to be made. Drills, exercises etc would be used to test assumptions, prove accuracy and demonstrate effectiveness of controls if called upon in a demand event. Therefore, it is essential that performance standards used, and assurance activities undertaken, are relevant to the specific circumstances of that asset including consideration of influencing factors such as environmental and / or weather operating conditions.

HSE will then consider the suitability of the performance standards and supporting data and methodology as part of the safety case assessment.

PFEER: Regulation 19, Suitability and Condition of Plant, Para 258

Adequate Demonstration of Arrangements: The safety case should contain sufficient particulars to demonstrate the hazards from W2W activities have been considered for the specific asset the safety case covers. A safety case submission for W2W activities should cover, as a minimum, the matters referenced in this document. In certain circumstances parts of this guidance may not be applicable to the operations being proposed. In these circumstances duty holders should include information to demonstrate that all areas have been considered. The submission guide may help duty holders to understand HSE's expectation for an adequate demonstration.

Submission Guide

The following submission guide provides a summary of the items discussed in this paper. It is not a definitive list of items that need to be considered and should not be treated as such.

Planning and Preparation

1. Calculate installation impact energy and determine if vessel displacement would exceed the structural capacity in a 2 m/s collision.
2. Risk assess intended operation to identify particular vessel specification
3. Procure vessel that can be operated at displacements lower than the installation structural capacity, if possible.
4. Audit of 3rd party providers prior to contract award or, in the case of existing contracts, a review of 3rd party competence with regard to W2W operations.
5. Workforce engagement as part of the planning process.
6. Sufficient number of gangway landing positions on structurally vulnerable installations to ensure vessel can always work in drift-off conditions.
7. Ensure compliance with current industry guidance.

Vessel Assurance

8. Perform DP FMEA audit and gap analysis against current DP standards (International Marine Contractors Association (IMCA) and Marine Technical Society (MTS)). Where gaps or non-conformances are identified ensure that there is a system in place to track and where required close out these items (refer to HSE Research Report RR195 Review of Methods for Demonstrating Redundancy in Dynamic Positioning Systems for the Offshore Industry <http://www.hse.gov.uk/research/rrhtm/rr195.htm>).
9. Vessel inspection by a suitably competent inspector with focus on vessel operating procedures and marine competency.
10. Arrangements for testing change of control from auto DP to manual control and ability of DP operators to recognise the development of hazardous situations that may require a change to manual control.
11. Arrangements for regular review and audit of operations, including high level audits by senior managers and day to day monitoring of vessel operations.

Marine Procedures

12. Marine procedures to be developed based on outcome of W2W risk assessment.
13. W2W marine procedures to include controls to reduce the risk of collision with the installation. These may be standalone or incorporated into existing marine procedures documents.
14. Review of vessel procedures and management system. Create bridging document where necessary.



15. Identify vulnerable areas, such as exposed risers, around the installation and ensure procedures prevent vessel operating in proximity to them. Ensure vessel crew are familiar with any exclusion zones.
16. Review management of change procedure in the context of W2W and ensure personnel are familiar with the process and triggers that may result in change management.
17. Develop adequate station keeping sea trials program to confirm vessel performance is suitable to the location and conditions.

Audit and Review

18. Ensure audit and review process is suitable for intended operation, including close out process, senior management overview, lessons learned / feedback loop.

Safety Case Submission

19. Describe the process and outcomes of the PFEER Regulation 5 assessment.
20. Include sufficient particulars to demonstrate items 1 – 18 above have been considered.



Legal requirements

The UK offshore regulatory regime stipulates extensive requirements with respect to control of the risks associated with W2W activities, including those related to shared ERRV activities and minimising the potential for vessel collision. These are detailed in the following regulations:

The Offshore Installations (Offshore Safety Directive) (Safety Case etc) Regulations 2015

- Regulation 10: Other provisions as to verification schemes
- Regulation 16: Management and control of major accident hazards
- Regulation 24: Revision of the safety case

Offshore Installations (Prevention of Fire and Explosion, and Emergency Response) Regulations 1995

- Regulation 4(1)
- Regulations 5(1), 5(2)(a-d)
- Regulation 9(1)(b), Relevant ACOP 42(a), 47, 49(a)(I, ii, v & vi)
- Regulation 15 - Arrangements for Evacuation
- Regulation 17 - Arrangements for Recovery and Rescue

Offshore Installations and Wells (Design and Construction, etc.) Regulations 1996

- Regulation 4(1)
- Regulation 5(1)(a, b & e)
- Regulation 8(1). Relevant guidance 38(d) & 48

Management of Health and Safety at Work Regulations 1999

- Regulation 3(1) - Relevant ACOP 13 (a) (iii)
- Regulation 4 (Schedule 1) General Principles of Prevention

Standards and Guidance

1. For structural response standards and guidance, refer to OSD Technical Policy "Structural Response to Vessel Impact"
<http://www.hse.gov.uk/offshore/shipimpact.htm>
2. OGUK Guidelines for Ship/Installation Collision Avoidance
<https://oilandgasuk.co.uk/product/guidelines-for-ship-installation-collision-avoidance/>
3. OGUK ERRVA Management Guidelines
<https://oilandgasuk.co.uk/product/emergency-response-rescue-vessel-management-guidelines-issue-6/>
4. OGUK ERRVA Survey Guidelines <https://oilandgasuk.co.uk/product/emergency-response-rescue-vessel-survey-guidelines-issue-7/>



5. IMCA M103 The Design and Operation of Dynamically Positioned Vessels
<https://www.imca-int.com/publications/57/guidelines-for-the-design-and-operation-of-dynamically-positioned-vessels/>
6. IMCA M117 The Training and Experience of key DP Personnel <https://www.imca-int.com/publications/97/the-training-and-experience-of-key-dp-personnel/>
7. IMCA 182 MSF The safe operation of Dynamically Positioned Offshore Supply Vessels <https://www.imca-int.com/publications/236/international-guidelines-for-the-safe-operation-of-dynamically-positioned-offshore-supply-vessels/>
8. Marine Technology Society Dynamic Positioning Committee DP Operations Guidance <https://dynamic-positioning.com/documents/operations/>
9. GOMO (Guidelines for Offshore Marine Operations) including UKCS Supplement
10. DNVGL Gangway Access to Offshore Facilities W2W Industry Guidance

This guidance is issued by the Offshore Safety Directive Regulator (OSDR). Following the guidance is not compulsory and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Inspectors seek to secure compliance with the law and may refer to this guidance as illustrating good practice.