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<tr>
<th>Revision Number</th>
<th>Date</th>
<th>Section</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>March 2019</td>
<td>4.2.1 Risk Assessment</td>
<td>Deleted reference to emergency response arrangements</td>
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<tr>
<td></td>
<td></td>
<td>4.2.2 Permit to Work</td>
<td>The following has been added: The Permit to Work cannot be transferred from one shift to another, so if the work extends to a new shift the existing Permit shall be closed out and a new permit issued.</td>
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<tr>
<td></td>
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<td>4.2.3 Tool Box Talk</td>
<td>The following has been added: It may be required to document that a TBT has been carried out.</td>
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<td></td>
<td>4.4. Simultaneous Operations</td>
<td>The following has been added: All parties involved in the operation should participate in the RA</td>
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</table>
4 Operational Risk Management

4.1 Terminology

It is assumed that various terms are used through industry, but in this document Risk Assessment (RA) shall be used as the generic term.

Other common terms include:

- SJA - Safe Job Analysis
- JSA - Job Safety Analysis
- TRA - Task Risk Assessment
- HAZID - Hazard Identification Review
- HAZOP - Hazard and Operability Review
- HIRA - Hazard Identification and Risk Assessment

4.2 Overview

Good operational risk management is a key component to successful HSSE management. All parties involved in an operation have a duty to ensure it is carried out properly.

The key levels are:

- RA - Risk Assessment
- PTW - Permit To Work
- TBT - Tool Box Talk
- MOC - Management of Change

4.2.1 Risk Assessment

The objective of RA is to identify and mitigate risks to an acceptable level. If the risks cannot be mitigated to an acceptable level the work should not proceed in its present form.

Each party involved in an operation must have in place an appropriate procedure for carrying out their own risk assessments, if appropriate.

RAs should include all parties involved in the operations to which they relate.

RAs should be performed for the complete process or operation.

Personnel performing the RA must be trained and competent in this matter.

Risk Assessments should identify the following:

1. All hazards associated with the proposed operation.
2. The probability of a hazard causing harm to personnel, assets or environment.
3. Mitigation measures.
4. Assessment of the residual risk.

Associated with Item 4 above, trigger points or any other changes in circumstances which will prompt the work being stopped or the management of change process being invoked should be identified.
Personnel performing tasks are required to understand the outcome of the RA, including trigger points or other changes which would require the management of change process to be initiated.

All relevant parties are responsible for ensuring that the RA is suitable and sufficient for their own particular tasks.

### 4.2.2 Permit to Work (PTW)

A permit-to-work system is a formalised and documented process used to control work which is identified as being potentially hazardous. It is also a means of communication between facility, vessel or base management and personnel who carry out the hazardous work. The permit system used should be that adopted by the organisation in charge of the premises (or vessel) where the work is to be undertaken.

PTW is to:

1. Identify physical or other barrier arrangements to be put in place.
2. Be issued for a specific task, and for time period not exceeding 12 hours or other clearly specified time limit.
4. Identify all lock-outs and tag-outs which should be in place before the work commences.
5. Identify restrictions or limitations in concurrent tasks.
6. Be approved and signed off by an issuing authority.
7. Identify correct Personal Protective Equipment (PPE) is in place for the task to which the permit relates.
8. Where relevant, identify appropriate emergency response arrangements for the task to which the permit relates.

PTW must be effectively communicated to all parties involved.

The Permit to Work cannot be transferred from one shift to another, so if the work extends to a new shift the existing Permit shall be closed out and a new permit issued.

### 4.2.3 Toolbox Talk (TBT)

Immediately prior to the task being carried out personnel involved in the task should carry out a toolbox talk. This should include (but not limited to):

1. Individual roles
2. Tools, methods and procedures to be used
3. Review RA and relevant PTW.
4. Promote “Stop the Job” culture.
5. Highlight all emergency actions and exit routes from the work site.
6. Confirm PPE required for the task.
7. Where relevant, confirm emergency response arrangements are in place. It may be required to document that a TBT has been carried out.
4.2.4 Personal Protective Equipment (PPE)

Personnel shall be supplied with PPE appropriate to the tasks being undertaken and as identified within the procedures, risk assessments and other control measures established to ensure their health and safety.

Personnel should inspect PPE supplied for suitability and damage before use. This should be used without exception whilst the work is in progress or their supervisor advised as to why the PPE supplied is unsuitable.

Examples of minimum recommended PPE requirements are shown in the table included in Appendix 4-A.

It is the individual’s responsibility to:

1. Use PPE correctly.
2. Look after PPE properly.
3. Get PPE checked, maintained or replaced as appropriate.

4.2.5 Management of Change (MOC)

A Management of Change (MOC) process should be in place for all tasks.

MOC is an important tool in preventing accidents, incidents and near misses.

Tasks will normally commence and proceed in accordance with previously agreed procedures. However, should unexpected changes in circumstance occur in the course of the task, the MOC process will be invoked at which time all relevant permits to work will be suspended.

The task should be stopped or suspended whilst the implications of the change are reviewed. If appropriate, the RA should be reviewed before resumption of the task or the TBT revisited prior to the suspensions of relevant permits to work being lifted.

4.2.6 Accident, Incident, Near Miss, Non-Conformance and Observations Reporting

All accidents, incidents, near misses, non-conformances and observations are to be reported as per individual company procedures or as otherwise agreed.

The objective of reporting is to establish the potential severity of the event and to ascertain whether further investigation should take place to determine immediate and root causes of the occurrence.

Investigations should be comprehensive and seek to identify and implement actions to prevent recurrence. The Root Cause Analysis technique is a particularly powerful tool in achieving these objectives.

Findings should be communicated to the parties involved and industry where relevant.

All accidents or incidents within the safety zone shall be reported as soon as possible to the Facility and Operating Company Managers, in addition to other statutory requirements.
All accidents or incidents outside the safety zone shall be reported in accordance with applicable regulations, owner’s and other applicable procedures, and statutory requirements. As a courtesy, such events should also be reported to the Charterer having regard to potential reputational impact.

All incidents resulting in pollution of the marine environment, including spills or releases, must be reported to appropriate regulatory bodies.

### 4.3 Potentially Hazardous Shipboard Operations

As part of their compliance with the ISM Code, Owners will have identified potentially hazardous operations on the vessels for which they are responsible.

Owners or Managers of vessels to which the ISM Code does not apply should ensure that its provisions relating to HSSE matters are complied with as fully as is practical.

Typically, hazardous operations on shipboard may include, but are not limited to those listed in Table 1. Hazardous Operations

Depending on the requirements of the ISM system relating to particular vessels, some of these potential hazards may be grouped together, but the responsible Owner should ensure that all are addressed using the risk management processes described in the earlier part of this Chapter.

**Table 1: Hazardous Operations**

<table>
<thead>
<tr>
<th>NATURE OF HAZARD</th>
<th>FURTHER DETAILS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry into Enclosed or Confined Space</td>
<td>Including entry into any Dangerous Spaces</td>
</tr>
<tr>
<td>General and Low Voltage Electrical Work (Less than 1,000 Volts)</td>
<td>Including work on switchboards, etc.</td>
</tr>
<tr>
<td>High Voltage Electrical Work (1,000 volts and over)</td>
<td></td>
</tr>
<tr>
<td>Hot Work</td>
<td>Including arc welding, cutting using gas or grinders</td>
</tr>
<tr>
<td>Work involving Critical Machinery, Machinery or Control Arrangements</td>
<td>May include software maintenance or modifications</td>
</tr>
<tr>
<td>Work on any systems containing stored energy</td>
<td>Including pressurised systems or any arrangements involving rigging under tension.</td>
</tr>
<tr>
<td>Work on Deck in Heavy Weather</td>
<td>Particularly on vessels with low freeboard</td>
</tr>
<tr>
<td>Working at Height or overside</td>
<td>Working at any height where fall could result in harm to personnel Working outside the side rails around any open deck.</td>
</tr>
<tr>
<td>Other Non-Routine Work</td>
<td>Including, but not limited to, non-routine lifting and hoisting operations.</td>
</tr>
</tbody>
</table>

### 4.4 Simultaneous Operations

In supporting offshore marine operations, vessels may be required to participate in activities involving offshore facilities or other vessels which could introduce potential hazards to personnel, equipment or the environment.

Those responsible for managing such operations should ensure that the risk management processes described earlier in this Chapter are complied with and that, where relevant, representatives of the respective vessel management teams are fully involved or consulted. All parties involved in the operation should participate in the RA.