NATIONAL PLAN

MARINE OIL SPILL RESPONSE
HEALTH AND SAFETY
GUIDANCE

Reference: NP-GUI-026
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<th>Full Form</th>
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<tbody>
<tr>
<td>ALARP</td>
<td>As Low As Reasonably Practicable</td>
</tr>
<tr>
<td>AMOSC</td>
<td>Australian Marine Oil Spill Centre</td>
</tr>
<tr>
<td>CFA</td>
<td>Country Fire Authority</td>
</tr>
<tr>
<td>EPA</td>
<td>Environmental Protection Agency</td>
</tr>
<tr>
<td>FWADC</td>
<td>Fixed Wing Aircraft Dispersant Contract</td>
</tr>
<tr>
<td>GRN</td>
<td>Global Response Network</td>
</tr>
<tr>
<td>HUET</td>
<td>Helicopter Underwater Escape Training</td>
</tr>
<tr>
<td>HVAC</td>
<td>Heating, Ventilation and Air Conditioning</td>
</tr>
<tr>
<td>IAP</td>
<td>Incident Action Plan</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communications Technology</td>
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<tr>
<td>IMO</td>
<td>International Maritime Organisation</td>
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<td>IMT</td>
<td>Incident Management Team</td>
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<td>IPIECA</td>
<td>International Petroleum Industry Environmental Conservation Association</td>
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<tr>
<td>JHA</td>
<td>Job Hazard Analysis</td>
</tr>
<tr>
<td>JSA</td>
<td>Job Safety Analysis</td>
</tr>
<tr>
<td>MEPC</td>
<td>Marine Environment Protection Committee</td>
</tr>
<tr>
<td>MFB</td>
<td>Metropolitan Fire Brigade</td>
</tr>
<tr>
<td>O&amp;G</td>
<td>Oil and Gas</td>
</tr>
<tr>
<td>OSRL</td>
<td>Oil Spill Response Ltd</td>
</tr>
<tr>
<td>OWR</td>
<td>Oiled Wildlife Response</td>
</tr>
<tr>
<td>PPE</td>
<td>Personal Protective Equipment</td>
</tr>
<tr>
<td>RA</td>
<td>Risk Assessment</td>
</tr>
<tr>
<td>RMP</td>
<td>Risk Management Process</td>
</tr>
<tr>
<td>SDS</td>
<td>Safety Data Sheet</td>
</tr>
<tr>
<td>SMEACS</td>
<td>Situation, Mission, Execution, Administration, Communication, Safety</td>
</tr>
<tr>
<td>SOP</td>
<td>Standard Operating Procedure</td>
</tr>
<tr>
<td>TBOSIET</td>
<td>Tropical Basic Offshore Safety Induction &amp; Emergency Training</td>
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</table>
INTRODUCTION

Aim

The aim of this document is to outline a standardised, operationally focused method under the National Plan for Maritime Environmental Emergencies to minimise health and safety risks to oil spill responders.

Scope

This Guidance relates specifically to oil (hydrocarbon) spills. Organisations involved in Oil Spill Response Incident Management and Operational Response Teams should use this document as a guide to develop a response specific safety plan, ensuring that there is a common approach to minimising the health and safety risks to personnel performing their role as oil spill responders. Health and safety relating to Hazardous and Noxious Substances are excluded from the scope and will be addressed in a separate document.

Audience

Oil Spill Response Incident Management and Operational Response Teams responding throughout Australia, including all State and Commonwealth jurisdictions and within the Australian marine environment. In the event that while working under a Control Agency that does not already have a well-developed HSE system in place to cover a marine oil spill event response this guidance may be adopted.

Structure

This paper is broken down into three main sections:
1. Hazard identification and risk assessment,
2. Application of risk management, and
3. Personal protective equipment requirements for oil spill responders.
Sections 1 and 2 provide an Incident Management Team (IMT) information on the process, templates, tools, and data to use during a response, with section 3 providing PPE recommendations based on oil spill response activity.

Review process

This document should be reviewed on an annual basis to ensure that it remains up to date and relevant.
1 HAZARD IDENTIFICATION AND RISK ASSESSMENT

The primary objective of this document is to ensure the health and safety of all personnel involved in a marine oil spill response.

The hazard identification and risk assessment tools and procedures outlined below provide guidance to assist the IMT and in-field responders to minimise the health and safety risks to all personnel involved in responding to a marine oil spill.

The procedures and tools provided will allow for the identification of hazards and associated risks, and if used correctly, ensure that corrective or preventative actions are taken to reduce the risks associated with responding to a marine oil spill to ‘As Low As Reasonably Practicable’ (ALARP).

The objectives of the hazard identification and risk assessment procedures outlined include:

1. Ensure compliance with relevant workplace health and safety legislation.
   
   I. Outline the legislative requirements,
   
   II. Define workplace health and safety in terms of Process and Personal Safety, and
   
   III. Outline welfare considerations for responders

2. Outline the Risk Management Process, which includes to:

   I. Identify the Hazard
   
   II. Assess the Risk
   
   III. Apply Hazard Controls
   
   IV. Accept or Reject
   
   V. Monitor and Review

3. Define the use of the tools and processes proposed. These include:

   I. Hierarchy of Hazard Control
   
   II. Hazard Register
   
   III. Safety Plan Checklist
   
   IV. Site Evaluation Form
   
   V. Site Safety Briefing Template
   
   VI. Standard Operating Procedures
   
   VII. Job Safety Analysis
   
   VIII. Take Five
   
   IX. Safety Report Form
   
   X. PPE Register
1.1 Mandatory Workplace Health and Safety Requirements

1.1.1 Legislative Arrangements

In Australia, employers and employees must meet obligations outlined within the acts and regulations relevant to each state or territory. Safe Work Australia and their jurisdictional counter parts have a responsibility to enforce the legislation governing these laws.

In the event of a major marine oil spill response, responders are involved at all levels: from the loading, transportation, and delivery of equipment from oil spill response equipment stockpiles throughout Australia, to deployments and operations in multiple locations and environments. The term ‘responder’ includes anyone taking part in the response in any capacity, as professional spill response personnel, government employees, contractors, sub-contractors, labour hire workers, and volunteers. Oil spill response activities include the potential for exposure to hydrocarbons and chemical dispersant during clean-up operations and responders, as well as their employers, have a duty of care to ensure that all reasonable and practical steps are taken to protect the health and safety of response personnel and the general public.

A range of legal requirements must be met, including (Commonwealth):

Safety related:
- Work Health and Safety Act 2011
- Work Health and Safety Regulation 2011

Environment / Petroleum Activity related:
- Offshore Petroleum Greenhouse Gas Storage Act 2006, and
- Environment Protection and Biodiversity Conservation Act 1999

Ships and aircraft related:
- Australian Maritime Safety Authority Act 1990 and
- Protection of the Sea (Prevention of Pollution from Ships) Act 1983
- Civil Aviation Act 1988.

Similar legislative instruments exist within each jurisdiction.

In recognising these legislative mandates, response operations must be undertaken safely, consistent with the relevant codes of practice, compliance codes and AS/NZ standards applicable to each state or territory.

In the absence of AS/NZ standards, or where the outcome is the same or greater, international processes or practices may be applied. Examples of this include:

- The mandatory use of Safe Work Statements, also known as Job Safety Analyses (JSAs) and Standard Operating Procedures (SOPs) for all operations.
- Activities must be risk assessed before implementation, with appropriately competent personnel undertaking all operations.
- Vessels and aircraft must be correctly registered and fit for purpose. Auditable, safe work systems consistent with their registration requirements must be in place. Other ancillary certification and assurance (such as for lifting equipment, hydraulic lines or engines) must be part of this registration.

1.1.2 Workplace Health and Safety

Workplace health and safety includes the requirement of employers to provide:

- Safe work premises,
- Safe machinery and materials,
- Safe systems of work,
- Information, instruction, training and supervision,
- A suitable working environment, and
- Provision of suitable PPE where hazards cannot be otherwise be reduced to ALARP
Process Safety includes the physical and procedural elements provided to manage the safe completion of tasks during a spill response. Process safety elements include:

- Specialist equipment
- Operating procedures
- Safe operating limits (Temperature, exposure limits)
- Oil spill response training
- Management systems

Process Safety is the application of these physical and procedural barriers to reduce the likelihood of a negative personal safety outcome. For an example of Process Safety see Appendix 5.1. Organisations providing personnel for oil spill response operations must ensure that those engaged to operate plant and equipment are qualified and/or competent to do so.

Personal Safety refers to the actions and behaviours of personnel in the workplace. Protection of personnel from injury or harm requires management of the workplace to ensure the absence of physical harm or threat of physical harm, and freedom from hostility, aggression, and harassment. Tools available to assist with management of behaviours include:

- Safety briefings
- Pre-start meetings
- JSA
- Safety Report Forms
- PPE

Personal safety is governed by workforce behaviour and outcomes from unsafe behaviours can lead to negative personal safety outcomes, or potentially the damage of assets and/or the environment.

1.1.3 Responder welfare

Safety of response personnel and the general public is the highest priority within any oil spill response. All response personnel must understand that their safety, the safety of other responders and that of the community is paramount. Consequently, all personnel engaged in oil spill response activities must be informed of the risks in their area of activity and how to perform tasks safely. Development of a detailed response Safety Plan, incorporating the use of the Risk Management Process and using the tools provided, will ensure that an Incident Management Team best manage workplace health and safety within an oil spill response.

Responder welfare is the primary focus of the Risk Management Process and at its conclusion PPE will only be recommended as a final control measure to minimise potential harm to responders. Responders may face a wide range of weather conditions and situations within Australia and the Risk Management Process must address the following:

- **Environmental**: is the area safe for responders to enter, and to use non intrinsically safe equipment?
- **Environmental**: are responders protected from extremes of heat and cold, sun, wind, and rain?
- **Acclimatisation**: important for responders from far northern or far southern regions of Australia when responding in unfamiliar extremes of temperature (Heat or cold).
- **Communications**: suitable equipment for remote regions is vital to responder safety in remote regions of Australia.

Control measures required to ensure the safety of all personnel during a marine oil spill response, as well as any specialist equipment or clothing, should be identified during the risk assessment process carried out prior to responders being sent into the field of operations. Continuous monitoring of the operating environment, and the effectiveness of risk barriers and controls are critical to ensuring throughout the entire operation.
1.2 Risk Management Process

The Risk Management Process is applicable to all levels of oil spill response. The IMT conduct high level risk assessment, while Forward Operating Base (FOB) personnel and responders in the field will apply a similar process to operations at a local level. A comprehensive hazard analysis and risk assessment will identify and outline the requirements of personal and process safety necessary for implementation prior to any activity.

When a hazard has been identified and the risk determined, hazard control measures are considered before then re-assessing the risk. If hazard control measures reduce the original risk to an acceptable level (ALARP) then work may proceed. Individual steps of the Risk Management Process are shown in Figure 1.

Risk Management Tools are provided to assist trained personnel to identify, document, assess, and manage risk as they progress through the Risk Management Process. These include:

<table>
<thead>
<tr>
<th>Tool</th>
<th>Definition</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hierarchy of Hazard Control</td>
<td>A system of prioritising control measures to ensure that the most effective controls are applied first. Used within “Apply Hazard Controls” during the Risk Management Process.</td>
<td>Sect 1.2.3</td>
</tr>
<tr>
<td>Safety Plan</td>
<td>The overall written plan identifying the scope of activities and locations, safety priorities, health monitoring activities, field documentation to be used by responders, communication details, and other relevant safety related information.</td>
<td>Appendix 5.5</td>
</tr>
<tr>
<td>Site Safety Evaluation Form</td>
<td>Form used to identify and document all potential hazards particular to a location. Used on arrival at any new or unfamiliar response location.</td>
<td>Appendix 5.6</td>
</tr>
<tr>
<td>Site Safety Briefing Template</td>
<td>Form used to assist a site manager or team leader deliver a briefing to personnel. Should be used in conjunction with the Site Safety Evaluation Form to deliver a SMEACS based brief upon arrival at any new or unfamiliar response location.</td>
<td>Appendix 5.7</td>
</tr>
<tr>
<td>Standard Operating Procedure (SOP)</td>
<td>A reference document outlining the specific steps involved in safely completing a particular routine activity or for the use of a specific item of equipment. An SOP can be used as a refresher for personnel previously familiar with the task, or it can be used in conjunction with a Job Safety Analysis to train new personnel on correct procedures for conducting a specific activity or operating an item of equipment that is new to them. An SOP can be or form part of a ‘Safe Work Statement’.</td>
<td>Appendix 5.8</td>
</tr>
<tr>
<td>Job Safety Analysis (JSA)</td>
<td>A standardised form used to assist with job hazard identification and the implementation of risk control measures. Conducted with all personnel involved in the activity prior to carrying out a new or unfamiliar activity, or when there are changes to a Standard Operating Procedure. A JSA can be or form part of a ‘Safe Work Statement’.</td>
<td>Sect 2.5 example Appendix 5.9</td>
</tr>
<tr>
<td>Take Five</td>
<td>A five step procedure to dynamically assess risk (dealing with risk as it presents itself). Used by in-field response personnel at any time when the appropriate conditions are met.</td>
<td>Sect 2.6</td>
</tr>
<tr>
<td>Safety Report Form</td>
<td>A standardised safety related feedback form used for the notification and documentation of Incidents, Near Misses, Hazards, Drills, Initiatives, and Observations. Used by field personnel to document and relay safety events and information back to the IMT, and for IMT safety personnel to record and follow up on relevant aspects of the report.</td>
<td>Appendix 5.10</td>
</tr>
<tr>
<td>PPE Register</td>
<td>Allows tracking of the PPE issued to individuals, vessels, and/or storage and supply locations. It further allows cost tracking and the ability to monitor availability or usage in specific areas of a spill.</td>
<td>Sect 2.7</td>
</tr>
</tbody>
</table>
The Risk Management Process itself fits into the overall incident Safety Plan, which is integral to the overall IAP.

*Figure 1: The Risk Management Process*

1. Identify the hazard
2. Assess the risk
3. Apply hazard controls
4. Accept or reject residual risk
5. Monitor & review

1.2.1 Step One: Identify the hazard

The initial step in the Risk Management Process is to identify hazards, including anything that could cause harm or damage to personnel, property, the environment, or reputation. However the focus of this paper is particular to the health and safety of oil spill response personnel.

Oil spill responders are generally provided by both industry and government and include personnel with widely varying levels of practical experience and knowledge. Minimum standard levels of training ensure that responders are equipped to identify hazards prior to and during a response, using the tools and processes included in this document. Training that meets this minimum need is demonstrated in Appendix 5.2. Personnel responding that come from backgrounds where such training has not be available (e.g. volunteers) must either be trained prior to participation or operate under strict supervision.
Oil Spill Responders face hazards that can be attributed to a number of specific areas:

- Working in the Environment
- Vehicles and Movements
- Vessel Operations
- Aircraft Operations
- Deploying and Operating Equipment
- Contact with Oil and Response Chemicals
- Wildlife
- External Factors (such as weather and sea-state)

A Hazard Register (Example: Appendix 5.3) is a list of all potential hazards related to a location or deployment area, including the use of specific equipment or related to specific tasks.

Responders must develop a hazard register specific to the operation and the geographic area.

1.2.2 Step Two: Assess the risk

A two dimensional Risk Matrix (Table 2) adapted from ISO 31000:2009 provides a systematic approach to risk assessment.

\[
RISK = LIKELIHOOD \times CONSEQUENCE
\]

- Likelihood is the frequency or probability that an event will occur.
- Consequences will vary with respect to the individual spill, company, or location and must not be limited to the personal injury risk associated only with responders.

As in Table 1-2 below, both factors can be attributed a numeric value to provide a quantitative analysis of risk.

A complete risk assessment will involve listing all potential hazards related to the location, item of equipment, and activity, and assessing the risk before and after the application of hazard controls.

For each hazard identified in the hazard assessment, responders must assess the level of risk for that hazard.

Table 1-2: Risk Matrix (Adapted from ISO 31000:2009)
1.2.3 Step Three: Apply hazard controls

Hazard controls include anything that reduces the associated risk for a particular hazard. To provide a systematic approach to this process, hazard control measures are applied using the Hierarchy of Hazard Control. *Hierarchy of Hazard Control* is a widely accepted system applied to minimise or eliminate exposure to hazards by assisting in the prioritisation of hazard control measures, helping to ensure that the most effective hazard control is applied.

*Figure 2: Hierarchy of Hazard Control*  
*(From NIOSH)*

As per Figure 2 above, in order of most effective to least effective means of reducing risk:

1) **Elimination**: physically remove the hazard or change the location or conditions of the task to remove the hazard (Lift a skimmer out of the water to remove debris, rather than operate with personnel hanging over the side of a vessel to remove)

2) **Substitution**: replace something that produces a hazard with an item that does not (Weld boom reels to the deck of a vessel rather than use chains)

3) **Engineering controls**: Use machinery or other items to isolate people from the hazard (Use remotely controlled equipment, use mechanical lifting gear rather than manual handling)

4) **Administrative controls**: These can take the form of both Process Safety (SOPs) and Personal Safety (In-field safety briefings, JSA) to highlight hazards and limit exposure

5) **Personal Protective Equipment**: The final barrier to risk, used only when all other reasonable and practical options have been considered. Some PPE may add to the physiological effort required to complete a task (e.g. the use of Tyvek coveralls in hot, humid conditions).

The risk management process and subsequent decisions on which hazard controls are applicable and most effective should begin prior to any work being carried out and before personnel arrive to respond at a new location.

*The application of Hierarchy of Hazard Control must be specific to each hazard to reduce the level of risk to As Low As Reasonably Practicable.*
1.2.4 Step Four: Accept or reject residual risk

Once the risk mitigation has been applied, a decision must be made as to whether the reduced level of risk is acceptable or not. If a hazard presents an unacceptably high level of risk even after all reasonable and practical efforts have been put in place, then the activity must not be carried out. New options or controls should be explored to evaluate if the activity can be done, that carry an acceptable level of risk.

There may be some activities that regardless of the control measure applied will still carry a high level of risk. For these activities management will need to decide to reject or accept the residual risk. These activities may include the following:

- Aviation activities; especially those offshore and/or those that involve single engine aircraft.
- Marine operations; especially those in high-energy environments and with inexperienced mariners.
- Remote operations, such as shoreline surveys away from population centers, requiring remote communications (EG – Great Australian Bight, East Gippsland, NW – Shelf) and/or in extreme weather environments.

After the control for each hazard has been identified, that hazard must be re-assessed to determine whether the residual risk is now at an acceptable level.

1.2.5 Step Five: Monitor and review

Safety is an ongoing process. As the operations change with new or modified elements introduced to an existing activity, the hazard may change. Conditions can change, which may increase or decrease likelihood, or change the consequences. The controls that have been put in place to manage initial hazards may become less effective or not effective at all. Given the dynamic nature of oil spill response, safety and the risk management process must include ongoing monitoring and review to ensure that risks are appropriately managed to ALARP.

There are two ways for this to occur – standardised operations reporting, and by-exception reporting.

Standardised operations reporting is part of the daily operations process. At the end of each operational cycle or work day a de-brief will be held in the IMT. This is to include field reports which include a summary of the safety and risk management process, and in particular an overview of what hazards were present, and how these were managed.

Tactical, team based de briefs should feed into this larger IMT de brief to allow for continuous improvement to the Safety Plan.

By-exception reporting are items raised by responders in specific circumstances and require the use of the Safety Report Form (Appendix 5.10).

By-exception reporting is to include:

- Incident reporting (when an injury/death occurs)
- Near-miss (when an activity occurred that could have resulted in injury/death)
- Hazard reporting (identification of a new hazard not previously considered)
- Safety initiative (responders proactively noting improvements that can be made to personnel or process safety – hazards control improvements)

By-exception reporting must be collated and processed by the IMT each day. Safety Reports allow incidents to be communicated to all personnel, highlighting the potential for similar incidents across the response and potentially reducing the likelihood of another occurrence. This step must be included in the Safety Plan by the IMT (Section 2.1).
2. APPLICATION OF RISK MANAGEMENT

The Risk Management Process is incorporated into an overall Safety Plan for the response. The Safety Plan is an integral part of the Incident Action Plan and key to ensuring the health and safety of all oil spill response personnel. The key to a safe response is thorough application of the Risk Management Process and translating the outcomes into documented action at the operational and tactical levels as a part of the overall Safety Plan.

2.1 The Safety Plan

Safety of all personnel is paramount in any response. Integral to the IAP, the IMT must begin development of the Safety Plan at the outset of a response. A level of detail appropriate to the size of the response and continuous interaction/feedback on safety related issues between the IMT and in-field personnel will ensure the continued effectiveness of the Safety Plan. The general objectives of the Safety Plan include:

- To develop a safe working environment and culture within the response.
- Zero safety incidents during the response.
- Assignment of roles and responsibilities for the implementation of safety process and procedures at all locations.
- Identify current and potential safety issues.
- Establish and ensure that safe work practices and procedures are followed.
- Establish near miss/incident reporting and mitigation process.
- Ensure that only adequately trained and competent personnel participate in response operations.
- Establish a clear PPE policy which ensures that appropriate PPE, specific to each task, is correctly applied, maintained, and disposed of.
- Established lines of communication between IMT, FOB, and in-field operations.
- Continuous integration of the safety messages within the IAP and communicated through inductions and written/verbal briefings to operational personnel.

Safety personnel representation will be required within the IMT, at each FOB established, and at potentially multiple locations in the field of operations. Used in conjunction with the general objectives of a safety plan and the Safety Plan Core Documentation, the Safety Plan Checklist (Appendix 5.4) will assist in establishing a comprehensive Safety Plan (Template example included in Appendix 5.5).

Figure 3: Safety Plan Core Documents (Recommended)
2.2 Incident Management Team (IMT)

As a response develops and the IMT is formed, the Risk Management Process is to be initiated as a critical component of the IAP and an initial step in the creation of the Safety Plan. A well designed IAP will not only include the aim, objectives, tactics and resources required for the spill, but also the risks to the health and safety of responders, and the actions to minimise those risks. This element of the IAP is the Response Safety Plan. A Medical Plan should also be included taking into account any additional workplace health and safety issues.

The IMT begins the Risk Management Process before responders are assigned tasks or sent to a location. Workplace hazards and hazards specific to the region of response can be identified, and suitable hazard controls assessed as appropriate, and made available/implemented (Equipment, documentation, and PPE). The Five Step Risk Management Process discussed previously forms an integral part of the process of developing, implementing, reviewing and revising a response Safety Plan.

2.3 In-field Responders

Responders in the field have a responsibility for their own safety and the safety of their coworkers. They are responsible for continuing the risk management process and using the tools provided at the appropriate time. Site Safety Representatives, Site Managers, or team leaders, as designated by the IMT prior to deployment, must:

- Conduct a Site Safety Evaluation (Appendix 5.6) upon arrival at each new site,
- Conduct a Site Safety Briefing (Appendix 5.7) for all personnel prior to beginning any work on site,
- Review or conduct individual activity evaluations with the personnel involved prior to beginning assigned tasks:
  - Standard Operating Procedures (SOP) [Refer to Section 2.4]
  - Job Safety Analysis (JSA) [Refer to Section 2.5]

All personnel involved in the response are also required to:

- Apply Take Five [Refer to 2.6]
- Communicate issues, report ‘by-exception issues’ or additional safety requirements back to the (IMT) through the Site Manager or Site Safety Representative.

2.4 Standard Operating Procedures (SOP)

A SOP is a step by step set of instructions designed to ensure that routine tasks are carried out efficiently, safely, and in a uniform manner. They are used by responders to consistently operate equipment, or undertake manual processes.

These may include material such as the manufacturers operating manual for a specific item of equipment, or purpose written documents for completion of a task according to business or industry requirements.

New personnel unfamiliar with the SOP, operation of a particular item of equipment, the task at hand, or in an unfamiliar location, must complete a JSA prior to beginning a task. All oil spill response equipment should have an accompanying SOP to assist with safe operations.

2.5 Job Safety Analysis (JSA)

A JSA (Example: Appendix 5.9) is a tool that responders are to use to consider the most appropriate method for safe completion of tasks in-field. Responders conduct a survey of all the potential hazards associated with the task (Job Hazard Analysis), and then conduct an onsite risk assessment. The completed JSA includes the controls introduced to minimise the identified risks.

\[ \text{JHA + RA = JSA} \]

[Job Hazard Analysis + Risk Assessment = Job Safety Analysis]
Conducting a JSA does not offer complete protection to personnel but it is designed to raise awareness of the hazards involved in completing a non-routine task, or to highlight hazards to personnel returning to an unfamiliar activity. A JSA must be completed for any activity not covered by Standard Operating Procedures. The JSA process must be documented, and consists of the following essential steps:

1) Document the steps or tasks involved in the activity
2) Document roles and responsibilities
3) Identify the hazards
4) Document the control measures
5) Identify who is responsible for implementation of the control measures
6) Monitor and review

The JSA is a written record of the process required to safely complete a given task, and it must be completed, agreed to, and signed by all personnel involved in the activity.

2.6 Take Five

Responders in the field have a high potential to encounter hazards not considered or apparent prior to beginning an activity or task. The continuous process of identifying hazards, assessing risk, and taking steps to control, eliminate or reduce risk while carrying out a defined task is identified as Dynamic Risk Assessment.

A commonly adopted Dynamic Risk Assessment procedure is the Take Five (Figure 5), which can be conducted at any time, during any operation, and be called by any member of a team when:

- A new hazard presents itself
- Clarification is required on any step in a process
- New information needs to be relayed to the entire team, or
- A team leader wants to regroup or refocus the efforts of a team to safely complete the task

The Take Five process steps summarise Dynamic Risk Assessment and allow work to proceed safely. Take Fives are not documented but are an important process that supports the continued development of SOPs and JSAs. If a Take Five identifies a significant hazard not previously considered, or follows the identification of a hazard due to a near miss or observation, a Safety Report Form (Appendix 5.10) should be completed.

![Figure 4: The Take Five Process](image-url)
2.7 Personal Protective Equipment (PPE) Register

A register of PPE issued in the field must be maintained by safety personnel or designated personnel within the IMT or in-field. It should document:

- Name of person issued
- Details of PPE issued (Item/brand/model/application)
- Date of issue
- Date and reason for replacement

An exchange system which requires responders to hand in used PPE before new stocks are issued should be implemented to reduce and control waste. Due care must be taken to ensure that oiled PPE is disposed of in designated facilities, with waste segregation that avoids secondary oil contamination.

2.8 Ongoing welfare arrangements

Within the Safety Plan the following additional items specifically related to the health and safety of field responders need to be considered by the IMT.

2.8.1 Amenities

Provision of the following amenities and facilities is critical for the basic health and safety of responders and arrangements must be put in place by the IMT to ensure they are available.

The IMT is to use this list as an aide memoir when establishing amenities, particularly at a remote facility.

- Drinking water – volumes appropriate for working conditions. Facilities for waste/used bottles or the provision of reusable bottles and appropriate washing and refilling facilities.
- Medical support available.
- Muster points, evacuation procedures in place for emergencies.
- Access and egress from response location including distances and transport considered.
- Toilets – sufficient for numbers of people likely to be using the facilities during short rest/lunch breaks. Close enough to work areas in ‘cold zones’ but also easily accessible by sewer suck trucks and service requirements. Odor/sounds/proximity to other response areas.
- Washing facilities – volumes of fresh water sufficient for number of responders. Storage of grey water.
- Mess areas/facilities – numbers of responders using facility at any one time. HVAC if enclosed, natural air flow/heat if open and exposed. Protection from pests.
- Shelter – as above.
- Seating – sufficient for numbers likely to use at any one time. Proximity to response areas.
- Change rooms – as per mess areas. Security and protection from thieves. Appropriate size and proximity to operational areas.
- Smoking areas – proximity to operational areas for access. Waste. Avoidance of second hand smoke being an issue or near eating areas.
- ICT and ability to contact home/work. HVAC of enclosed area, natural air flow/heat if open and exposed. Protection from pests. Security of personal belongings. Opportunity for ‘down time’ and after hours recreational activities (E.g. pools, gym, etc). Choices of catering/messing arrangements.

For remote operations, logistics supply of the needs above can be very challenging. Longer rest times/shorter work periods, higher than ‘normal’ rotations of responders may assist to alleviate the numbers and requirements for extensive remote facilities.
2.8.2 Fitness for task of responders

In order to meet the minimum level of competency expected to operate as an oil spill responder, response personnel must have completed suitable oil spill response training (Appendix 5.2), and must be physically and mentally suitable for the specific tasks required of them throughout the response.

Responders must:

- Be in good overall health and physically fit, assessed by their employing organisation as being suitable and ‘fit-for-purpose’ for their assigned operational tasking. This includes but is not limited to:
  - Operations staff working on a shoreline or conducting oiled wildlife response must be capable of working 6 – 8 hour shifts in the outdoors, on their feet, wearing ankle to wrist covering, undertaking light/medium physical labor, for up to seven days.
  - Responders undertaking aerial observation tasks must be have completed Helicopter Underwater Escape Training (HUET) either independently or as a part of the Basic Offshore Safety Induction & Emergency Training (BOSIET).
  - IMT workers undertaking predominantly ‘office type duties’ must be capable of working indoors for ten hour shifts at a time, within a high pressure environment.
- Carry no physical impairments or disabilities which may result in them placing themselves, or their team at risk of harm.
- Have good hearing and vision, and a good working knowledge of written and spoken English.
- Declare that they carry no pre-existing conditions that may be aggravated /exacerbated by the task being asked of them.
- Declare any medication that is currently being taken that may impact upon their performance, awareness or state of mind.

Prior to deployment, and as specifically considered within the IMT’s Safety Plan, a health assessment declaration must be made to ensure that responders meet the above requirements. This is to include a self-assessment by the responder and that their employing organisation endorses this assessment. Providing organisations have a role to play within this process by ensuring that personnel provided are fit for duty and for the task assigned.

Where pre-existing medical conditions exist, or where a responder is carrying an injury, medical advice must be sought and certification provided outlining what tasks that responder is fit for duty for. Where possible, assigned tasks can be modified accordingly or personnel reassigned based on allowances for their medical condition.

Personal medical information is confidential, and must be securely kept by the records unit of the IMT and/or by the providing organisation.

2.8.3 First aid requirements

First aid treatment, facilities and staffing will always be identified as one of the Hazard Control measures made available during an oil spill response. The only variation to this is that the scale and size of the first aid capability needs to be adjusted based on the size of the response.

When working through the implementation of first aid as a hazard control in the field, the IMT must consider that:

- Fit for purpose equipment is provided and that each worker has access to suitable first aid kits
  - E.g. In Australia during spring and summer months, shoreline teams must have access to first aid snake bite kits.
- Facilities for the administration of first aid are suitable and accessible.
  - E.g. First aid stations are collocated with other response facilities such as mess rooms or rest stations.
- Responders have access to an adequate number of other personnel who are suitably trained to administer first aid
  - E.g. Each responder team has at least two current, first aid trained team members capable of administering care of an appropriate level and in a timely fashion, while back-up help is on its way.
In-field first aid requirements will vary, and requirements are to be considered and addressed during the risk assessment. Factors that the IMT must consider when scaling up or down the first aid capacity must be addressed during the Risk Management Process and include:

• Nature of hazards expected
• Nature of the work being carried out
• The size, location and nature of the work environment
• The time of year
• The number of responders

Should a responder encounter any incident during the response, a record must be created using the Safety Report Form and maintained by the IMT. Details must include:

• Information on the hazard source, type and duration,
• First aid or other medical activities were administered to the responder,
• If possible a ‘response’ return to work program,
• A ‘business as usual’ return to work program.

2.8.4 Responder Health and Safety Monitoring

Operational responders are likely to come into close proximity to hydrocarbons and for large spills, possibly chemical dispersants or other cleaning agents. Part of a response safety plan is to ensure that any exposure levels of responders to hydrocarbons or dispersants are tracked; changes in individuals noted and then post impact monitoring of exposed individuals continued.

As part of the daily operational and by-exception reporting back to the IMT, records are to be kept of responders tasks and the likely exposures responders have had to products and chemicals during these tasks. As part of their daily time sheet reporting, responders must note their area of operations to allow this reconciliation to occur within the Finance & Administration Section of the IMT.

Responder health and safety monitoring will include pre-impact, during response, and post response blood, hair and urine sampling. This should be implemented as part of the safety plan and should also include similar testing of the products that responders are potentially exposed to. This biological and product sampling program is the subject of a separate paper.

2.8.5 Decontamination

Decontamination of responders is a critical part of ensuring (i) that oils do not have a lasting effect on the health of a responder and (ii) that secondary decontamination of people, sites and equipment does not occur.

The starting point of decontamination is good work practices. This means minimising a responder’s exposure to oils, and their opportunity to physically come into contact with oils.

A barrier must always exist between a responder and the oil. This is critical during manual labor work that involves deploying equipment, on shorelines or the disposal of waste. Work gloves, face shields/masks/eye wear, wrist to ankle work wear and oil resistant work boots/gum boots are the final and critical protective barrier in this instance.

Hot, warm and cold zones

In a response, work sites are classified into one of three areas;

• “Hot” zones are work sites that are “oiled”.
• “Warm” zones are transition areas where people, equipment and plant are cleaned and decontaminated as they depart the “Hot” zone and transition to the “Cold” zone.
• “Cold” zones are clean areas with no oiling.

As responders finish their tasks in the hot zone, they move through the warm zone to become clean before exiting into the cold zone. The decontamination process is undertaken each time a person or item of equipment is transitioned from the hot zone to prevent secondary contamination of the cold zone.
Decontamination requirements

The decontamination station must allow for responders, their equipment and clothing to be thoroughly cleaned prior to entering the cold zone. Irrespective of the size of the spill, decontamination stations will need to be established within the warm zone(s).

This may be as simple as a hand basin, boot washing area and oiled/non-oiled PPE bins. Or, it may be a multi-step wash down station with deluge system, heated pressured spray system, with large scale grey/oiled water tanks. The size will need to be varied to fit the spill response, and the stage that the spill response is at.

In determining the decontamination need, the IMT will need to identify:

• How many responders per day will need to use the decontamination station?
• What will their degree of oiling be – light, medium or heavy?
• Per person, what will the average liters of water required be per ‘decontamination’? What is the bulk volume of water required?
• How will clean and grey/oiled water be stored? How will it be disposed?
• What is the total daily volume of oiled PPE/clothing? How will this be stored on site? How is this waste stream to be disposed of?
• Where will the decontamination station be located?

Once the stations have been setup, a process needs to be established within each station to manage three steps:

1. Bulk oil removal
   • Including the removal of oiled outer clothing/gloves; washing and scrubbing boots;
2. Fine oil removal
   • Including hand/face/nail washing with soft soap; showering if needed;
3. Final clean and inspection.

Separate waste streams must be established consistent with the volumes/numbers of personnel using each decontamination station.

Common equipment for each decontamination station that the IMT will need to consider includes:

• Water supply
• Scrubbing brushes
• Chairs
• Bunting/barrier tape
• Additional PPE
• Barriers
• Detergent
• Hand Wash
• Tools
• Tables
• Sorbent materials
• Tubs/buckets
• Marquee or tents
• Waste storage and disposal (Multiple streams)
• Bunding/heavy duty tarps for wash areas
• Signage
• Tent pegs
• Rope
• Electrical ties
• Tape
2.8.6 Air Monitoring and Exclusion Zones

The need for air monitoring will be established as part of the Safety Plan and, if required, will be part of the IAP. Assessing the need for air monitoring will be identified in the initial risk assessment in conjunction with forming an understanding of the nature and condition of the product responders are expected to deal with. Specific product information will be obtained from Safety Data Sheets (SDS), assays, vessel records, or oil and gas industry personnel.

Hydrocarbons, particularly freshly spilt oil, contain a number of components that can be hazardous to human health. Where components of particular concern (Appendix 5.12) are noted, the IMT must ensure that specialised personnel are called in to assist. Guidance on safe working limits, an effective air monitoring program, and the establishment of exclusion zones to minimise the risk to responders of airborne substances during a response must be sought from a qualified occupational hygienist or air monitoring consultant.

Any potential need for air monitoring should prompt the IMT to issue personal gas monitors or ensure that more sophisticated gas testing equipment is made available. Appropriately trained personnel who can deploy and operate suitable air monitoring equipment can be engaged through experienced personnel from the oil and gas industry, industrial/occupational hygienists, or through the EPA (Table 2-2). The environment in question should be assessed, at the minimum, for high/low readings of combustible gases (%LEL), oxygen (O₂), carbon monoxide (CO), and hydrogen sulphide (H₂S).

Once engaged, personnel responsible for the design and implementation of the plan must report sensor readings or field gas tests that register above safe limits to the IMT. This information also needs to be relayed to in-field responders to define areas to avoid and to establish safe operational working areas.

Responders must be directed to approach the spill from downwind where possible via shoreline or onboard vessels. Air monitoring equipment should be used to establish safe perimeter prior to any operations. Personal 4x4 (%LEL, O₂, CO, H₂S) gas monitors should be issued to responders working in areas or situations that may be at risk should environmental (Wind change) or other conditions (Confined space entry) result in changes to the air quality.

In conjunction with air monitoring personnel the IMT should set exclusion zones around any areas with high readings and prohibit responders from entering the zone(s). Responders are not required to cleanup/recover oil from any areas which present an unacceptable risk from airborne substances. The use of intrinsically safe equipment should not be necessary given that if the air quality is sufficiently poor then personnel will not be expected to respond.

Table 2-1: Air monitoring contacts

<table>
<thead>
<tr>
<th>Service Provider</th>
<th>Contact</th>
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<tbody>
<tr>
<td>Environmental Protection Agency</td>
<td>EPA</td>
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<tr>
<td>Industrial Hygienist</td>
<td>Local health and safety providers</td>
</tr>
<tr>
<td>Industry Personnel</td>
<td>O&amp;G Safety Representatives</td>
</tr>
<tr>
<td>Emergency Response Personnel</td>
<td>Fire Services</td>
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<tr>
<td>Oil Spill Response Agencies</td>
<td>AMOSC</td>
</tr>
</tbody>
</table>
3. PPE REQUIREMENTS FOR OIL SPILL RESPONDERS

An oil spill responder should initially arrive for a response equipped with the following minimum standard level of PPE:

**Table 3-1: Minimum Standard PPE**

<table>
<thead>
<tr>
<th>Eyes</th>
<th>Safety Glasses (clear or tinted)</th>
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</thead>
<tbody>
<tr>
<td>Body</td>
<td>Long sleeve shirt and long pants, or coveralls</td>
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<tr>
<td>Hand</td>
<td>Work gloves</td>
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<td></td>
<td>• Riggers</td>
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<tr>
<td></td>
<td>• Nitrile</td>
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<tr>
<td>Feet</td>
<td>Enclosed footwear</td>
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</table>

The minimum standard is suitable for general operations only. As mitigation for specific hazards in oil spill response additional PPE will be required and is detailed in Table 3-2.

In general PPE should:

- Be the final barrier considered only after Hierarchy of Control has been applied to any hazard
- Be well maintained and easily accessible
- Be appropriate for the type of work and give appropriate protection for the risk
- Not create additional health or safety risk
- Comply with relevant Australian Standards
- Be compatible with other PPE in use
- Fit properly
- Not interfere with any medical conditions of the user
- Be easy to use
- Be comfortable

In the following PPE Selection Matrix the minimum recommended level of PPE is applicable to all activities. The matrix indicates additional PPE required as a minimum relative to specific oil spill response activities, and recommendations for further additional PPE that should be made available in the event that circumstances or conditions warrant its use.

- = Minimum Standard PPE, required as a minimum by all oil spill responders for general oil spill response activities (See Table 3-1: Minimum Standard PPE, above)

- = Additional PPE for hazard specific control

- = Recommended or may be required, depending on circumstance, as an additional hazard control

For categories / activities with different likelihoods of exposure between hydrocarbon and dispersant, the higher standard of PPE is applied.
## Table 3-2: PPE Selection Matrix by Response Activity

<table>
<thead>
<tr>
<th>Activity ID</th>
<th>1a</th>
<th>1b</th>
<th>1c</th>
<th>1d</th>
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### 1. Working in the Environment

- **1a** Cold (Refer Appendix 5.11)
- **1b** Heat (Refer Appendix 5.13)
- **1c** Wet
- **1d** Wind
- **1e** Lightning
- **1f** Slips / Trips / Falls
- **1g** Noise (Refer Appendix 5.14)
- **1h** Working At Height (Refer Appendix 5.15)
- **1i** Manual Handling (Refer Appendix 5.16)
- **1j** Pinch Points
- **1k** Sharps / Debris
- **1l** Falling Objects / Head Impact
- **1m** Night Operations / Limited Visibility
- **1n** Excessive Hours / Fatigue
- **1o** Flora / Fauna – Tropical Northern Region
- **1p** Flora / Fauna – Southern Coast
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<td>Eyes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Standard PPE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity Id</td>
<td>Category / Hazard</td>
<td>4. Aircraft Operations</td>
<td>5. Deploying and Operating Equipment</td>
</tr>
<tr>
<td>-------------</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>4a. Rotating Equipment</td>
<td>Booms. Near Shore</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4b. Heat (Exhaust)</td>
<td>Booms. Offshore</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4c. Air Sickness</td>
<td>Booms. Ropes / Lines</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4d. Emergency Landing / Crash</td>
<td>Booms. Anchor Points</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skimmers / Power Packs / Pumps</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Managing / Retrieving Oiled Equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ingestion</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Contact</td>
</tr>
<tr>
<td>Activity ID</td>
<td>Category / Hazard</td>
<td>Standard PPE</td>
<td>Activity ID</td>
</tr>
<tr>
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</tr>
<tr>
<td>6a</td>
<td>Dispersant Operations</td>
<td></td>
<td>6b</td>
</tr>
<tr>
<td></td>
<td>Spray Systems</td>
<td>Goggles</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vessel Spray Systems</td>
<td>Facemask / Face Shield</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aircraft Spray Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skin Contact</td>
<td>Sunhat</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ingestion</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skin Contact</td>
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</tr>
<tr>
<td></td>
<td>Ingestion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6b</td>
<td>Raking, Shoveling, Bagging</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Waste Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skin Contact</td>
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<tr>
<td></td>
<td>Ingestion</td>
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<tr>
<td></td>
<td>Skin Contact</td>
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<tr>
<td></td>
<td>Ingestion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6c</td>
<td>Conduct In Situ Burn</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Smoke Plume</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fire / Explosion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6d</td>
<td>Oiled Wildlife Response</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stings, Bites</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Poison</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. Contact with Oil and Response Chemicals

6a. Dispersant Operations

- Spray Systems
- Vessel Spray Systems
- Aircraft Spray Systems

6b. Raking, Shoveling, Bagging

6c. Waste Management

6d. Conduct In Situ Burn

7. External Factors

7a. Oiled Wildlife Response

- Stings, Bites
- Poison
4. REFERENCES

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   API Recommended Practice 98
   First Edition, August 2013

2) Oil Spill Responder Health and Safety
   IPIECA OGP
   OGP Report Number 480, December 2012

3) Draft Guidance on the safe operation of oil pollution combating equipment
   IMO Marine Environment Protection Committee, 67th Session, Agenda Item 12
   MEPC 67/12/2, 30th June 2014

4) Australian Emergency Management Handbook Series – Handbook 1, Disaster Health
   Australian Emergency Management Institute
   Commonwealth of Australia 2011

5) Using Risk Based Decision Making to Select Personal Protective Equipment for Oil Spill Responders
   2014 International Oil Spill Conference paper
   Abstract 300237

6) Chemical Human Health Hazards Associated with Oil Spill Response
   Regulatory Analysis and Scientific Affairs
   API Publication Number 4689
   August 2001

7) National Standard for Occupational Noise
   [NOHSC: 1007(2000)]
   National Occupational Health and Safety Commission

8) WorkSafe Victoria website

9) Australian Government Business

10) National Plan For Maritime Environmental Emergencies, Aide-memoire for Marine Pollution Response
5. APPENDICES

5.1 Case Study: Exercise Westwind deck crane hydraulic failure

During an offshore oil recovery skimmer deployment involving the use of a Hiab (Crane) onboard a vessel, the Hiab suffered a hydraulic failure while attempting to recover the skimmer back onto the deck of the vessel. Operations were shut down until a pre-start/toolbox meeting and a JSA had been carried out once an alternative method of recovering the skimmer (Utilising a second vessel) was determined.

The exact reason for the hydraulic failure was not established, however the incident prompted a systematic investigation into all ancillary equipment on vessels likely to be used during the wider response. Inspections were carried out and in field responders were tasked to ensure:

- The weight rating, lifting capacity, and condition of all lifting equipment onboard contracted vessels was fit for purpose
- That all lifting equipment aboard vessels was fit for purpose
- That all equipment and vessels conformed to the required maritime equipment inspection procedures

The use of the Hiab is an example of the application of Process Safety using Substitution. The task of lifting the skimmer in and out of the water is carried out by the hiab as a substitute for the use of manual lifting techniques that pose higher risk to responders.

The process of instigating the ongoing inspections is an Administrative example of Process Safety, where inspections and assessment of equipment are used to ensure that equipment is inspected, fit for purpose, and that the risk of failure is reduced to as low as is reasonably practicable.
### 5.2 Oil Spill Responder Training Standards

<table>
<thead>
<tr>
<th>Government Personnel</th>
<th>Training</th>
</tr>
</thead>
</table>
| Australian State and Territory personnel | AMSA competency-based training courses under the National Plan and intergovernmental arrangements. Online Introduction to Pollution Response, through the AMSA Learning Centre, consists of four modules:  
  • The National Plan  
  • Health and Safety in an Oil Spill  
  • Introduction to Oil Spills  
  • Introduction to Chemical Spills  
  The online learning component must be completed prior to attending AMSA National Plan courses:  
  • CORE Training  
    – Incident Management Team (IMT)  
    – Basic Equipment Operations  
  • SPECIALIST Training  
    – Incident Controller  
    – Planning  
    – Operations  
    – Logistics  
  • OPERATIONAL Training  
    – Basic Equipment Operators  
    – Advanced Equipment Operators  
    – Shoreline Response |

<table>
<thead>
<tr>
<th>Government Contractors</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Industry Personnel</th>
<th>Training</th>
</tr>
</thead>
</table>
| AMOSC Core Group | Completion of an AMOSC course, accredited by the Nautical Institute to the International Maritime Organisation (IMO) standards:  
  • IMO I, Operations  
  • IMO II, Management  
  • IMO III, Incident Command  
  AMOSC Core Group Specialised Training Workshop |

| AMOSC Participating Member and Associated Member company personnel | AMOSC IMO accredited competency based courses:  
  • IMO I, Operations  
  • IMO II, Management  
  • IMO III, Incident Command |

<table>
<thead>
<tr>
<th>Marine Personnel Contractors</th>
<th>AMOSC Non Accredited Courses</th>
</tr>
</thead>
</table>
|                              | Offshore/Nearshore Operations  
  • Aerial Surveillance  
  • Shoreline Operations  
  • Bespoke Courses |

| Global Response Network Personnel | OSRL / GRN Accredited and Non Accredited Courses |
### 5.3 Hazard Register

A comprehensive Hazard Register will include every potential hazard that oil spill responders may face at any time during the response. The example that follows can be used by an Incident Management Team as the basis for beginning the Risk Management Process during a response.

#### 5.3.1 Hazard Register: Onshore - General

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>HAZARD</th>
<th>RISKS</th>
<th>CONTROLS</th>
</tr>
</thead>
</table>
| General    | Weather – Heat          | • Sunburn                  | • Limit exposure  
  – Shelter  
  – Regular breaks  
  – Adjust shifts  
  • PPE - Protective clothing / Hat / Sunscreen  |
|            |                         | • Dehydration              | • Maintain fluids  
  • Regular breaks  
  • Acclimatise personnel  |
|            |                         | • Heat Rash (Prickly Heat) | • Limit Exposure  
  – Regular breaks in cool environment  
  – Minimise work in humid environment while using clothing that traps moisture  
  • Wash skin thoroughly  
  • Apply medicated lotions/powder  |
|            |                         | • Heat Cramps              | • Limit Exposure  
  – Shelter  
  – Regular breaks in cool environment  
  – Adjust shifts  
  • Maintain Fluids  
  • Acclimatise personnel  
  • PPE - Protective clothing / Hat / Sunscreen  |
|            |                         | • Heat Exhaustion          | • Limit Exposure  
  – Shelter  
  – Regular breaks in cool environment  
  – Adjust shifts  
  • Maintain Fluids  
  • Acclimatise personnel  
  • PPE - Protective clothing / Hat / Sunscreen  |
|            |                         | • Heat Stroke              | • Limit Exposure  
  – Shelter  
  – Regular breaks in cool environment  
  – Adjust shifts  
  • Maintain Fluids  
  • Acclimatise personnel  
  • PPE - Protective clothing / Hat / Sunscreen  |
| Weather - Cold | Hypothermia          | • Limit exposure  
  – Shelter  
  – Regular breaks  
  • Protective clothing  |
| Weather – Strong Wind | Impact from debris/objects | • Secure loose items  
  • PPE (Safety glasses)  |
| Weather - Lightning | Electrocuton   | • Limit exposure  
  – Shut down work if lightning is observed within 5km (Stop watch or second count divided by 5 gives approximate distance in km. 25 seconds is approx. 5km)  
  – Avoid conductors/tall objects  
  – Avoid open areas  
  – Crouch low with heels together  |
| Slip, Trip, Falls | Personal injury   | • Good housekeeping  
  – Clear walkways  
  – Secure equipment  
  – Minimise clutter  
  – Clean spills  
  • Apply non slip materials  
  • Situational awareness  
  • PPE  |
<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>HAZARD</th>
<th>RISKS</th>
<th>CONTROLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Working at height</td>
<td>• Personal injury / death</td>
<td>• Restrict access</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>– Barriers / tape</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>– Guard rails</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>– No go zones</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Maintain situational awareness</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Team communication</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• PPE – fall arrest / harness</td>
</tr>
<tr>
<td>Manual Handling</td>
<td></td>
<td>• Personal injury</td>
<td>• Correct lifting techniques</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Team lift for heavier or awkward items</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Good communication during team lift</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• PPE – Gloves/Safety Boots</td>
</tr>
<tr>
<td>Pinch points</td>
<td></td>
<td>• Personal injury</td>
<td>• Avoid bights/pinch points</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Maintain situational awareness</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• PPE - Gloves</td>
</tr>
<tr>
<td>Sharps/debris</td>
<td></td>
<td>• Personal injury</td>
<td>• Pre job inspection of area/equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Effective observation while operating</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Effective team communication</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• PPE – Gloves/Safety boots</td>
</tr>
<tr>
<td>Noise</td>
<td></td>
<td>• Personal injury</td>
<td>• Limit exposure</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Effective communication plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• PPE – Hearing Protection</td>
</tr>
<tr>
<td>Night operations</td>
<td>– Poor visibility</td>
<td>• Personal injury</td>
<td>• Adequate lighting</td>
</tr>
<tr>
<td></td>
<td>– Fatigue</td>
<td></td>
<td>• Avoid night operations</td>
</tr>
<tr>
<td>Fire</td>
<td></td>
<td>• Personal injury Death</td>
<td>• Be informed of media warnings</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Comply with warnings signs and fire bans</td>
</tr>
<tr>
<td>Flood</td>
<td></td>
<td>• Personal injury Death</td>
<td>• Be informed of media warnings</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Comply with warnings signs and travel bans</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Do not enter flood waters</td>
</tr>
<tr>
<td>Portable Electrical</td>
<td></td>
<td>• Personal injury Death</td>
<td>• Trained/competent operator</td>
</tr>
<tr>
<td>Equipment</td>
<td></td>
<td></td>
<td>• Equipment must be tagged in date and in good condition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Comply with manufacturer recommendations and SOP</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Protect leads</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Use residual current protection devices</td>
</tr>
<tr>
<td>Extended Hours/fatigue</td>
<td></td>
<td>• Personal injury Death</td>
<td>• Regulated shifts</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Sufficient resources to avoid unnecessary demands on responders</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Avoid irregular work patterns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Adequate rest periods</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Job rotation</td>
</tr>
</tbody>
</table>
5.3.2 Hazard Register: Vehicles, Vessels, Aircraft, and Movements

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>HAZARD</th>
<th>RISKS</th>
<th>CONTROLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Movements</td>
<td>Driving</td>
<td>Crash</td>
<td>Operator must have appropriate licence</td>
</tr>
<tr>
<td></td>
<td>– General</td>
<td>Fatigue</td>
<td>Vehicle must be registered, in good condition, and fit for purpose</td>
</tr>
<tr>
<td></td>
<td>– Off road</td>
<td>Bogged in remote areas</td>
<td>Comply with road regulations</td>
</tr>
<tr>
<td></td>
<td>– Outside normal hours</td>
<td>Lost</td>
<td>Drive to road / environmental conditions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Plan trip</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Driver fit to work</td>
</tr>
<tr>
<td></td>
<td>Pedestrian movements</td>
<td>Crush/impact</td>
<td>Establish safe zones and barriers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Personal injury</td>
<td>Separate vehicles and pedestrians</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Use spotters</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limit access</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PPE – High visibility clothing</td>
</tr>
<tr>
<td></td>
<td>Loading Vehicles and Vessels</td>
<td>Forklift operations</td>
<td>Crash</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Personal injury</td>
<td>Operator must have appropriate licence</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vehicle must be registered for road use if used on public road areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vehicle must be in good condition, and fit for purpose</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Comply with road regulations</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Drive to road / environmental conditions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Plan lifts and movements</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Driver fit to work</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Use a spotter where appropriate</td>
</tr>
<tr>
<td></td>
<td>Crane operations</td>
<td>Dropped objects</td>
<td>Operator must have appropriate licence</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Crush/personal injury</td>
<td>Use qualified rigger/dogman for all movements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Impact/damage to equipment</td>
<td>Loads to vessels must be under guidance of vessel master</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Impact/damage to vessel</td>
<td>Crane must be in good condition, and fit for purpose</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Plan lifts and movements</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Driver fit to work</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Established safe/no go zones</td>
</tr>
<tr>
<td></td>
<td>Fastening loads</td>
<td>Personal injury</td>
<td>Competent personnel to conduct</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Significant injury of third party</td>
<td>Load assessment</td>
</tr>
<tr>
<td></td>
<td>Manual Handling</td>
<td>Personal injury</td>
<td>Correct lifting techniques</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Team lift for heavier or awkward items</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Good communication during team lift</td>
</tr>
<tr>
<td></td>
<td>Vessel Operations - General</td>
<td>General vessel operations</td>
<td>Personal injury</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– Launching</td>
<td>Vessel to be in survey</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– Retrieval</td>
<td>Vessel and safety equipment to be fit for purpose and in good condition</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– Operation</td>
<td>Vessel master to be Coxswain qualified as minimum</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Maritime regulations to be observed at all times</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Master to provide safety briefing to all oncoming crew/personnel</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PPE – Personal Flotation Device (PFD)</td>
</tr>
<tr>
<td>ACTIVITY</td>
<td>HAZARD</td>
<td>RISKS</td>
<td>CONTROLS</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------------------------</td>
<td>--------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Vessel Operations - General</td>
<td>Collision/grounding</td>
<td>• Personal injury</td>
<td>• Maritime regulations to be observed at all times</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Significant injury of third party</td>
<td>• Operate to conditions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Damage to equipment</td>
<td>• Utilise charts and/or local knowledge to avoid known hazards</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Death</td>
<td>• Operate at low speeds near fixed structures</td>
</tr>
<tr>
<td></td>
<td>Fire</td>
<td>• Personal injury</td>
<td>• Maintain safe distance between vessel and fixed structures or other vessels</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Damage to equipment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Person overboard</td>
<td>• Personal injury</td>
<td>• Firefighting equipment to be available and discussed during safety briefing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Death</td>
<td>• Competent trained personnel only to respond</td>
</tr>
<tr>
<td></td>
<td>Vessel to vessel transfer</td>
<td>• Person overboard</td>
<td>• POB to muster as directed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Crush/impact injury</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stored energy – Moorings– Tow/anchor lines – Handing lines between vessel and shore – Towing boom</td>
<td>• Personal injury – Person overboard – Death</td>
<td>• Vessel master to control operational safety</td>
</tr>
<tr>
<td></td>
<td>Working around aircraft</td>
<td>Rotating equipment</td>
<td>• Stay clear of bight</td>
</tr>
<tr>
<td></td>
<td>Heat (Exhaust)</td>
<td>• Personal injury</td>
<td>• Stay clear of snap back zones</td>
</tr>
<tr>
<td></td>
<td>Air sickness</td>
<td>• Personal injury</td>
<td>• Good housekeeping</td>
</tr>
<tr>
<td></td>
<td>Emergency landing/crash</td>
<td>• Personal injury</td>
<td>• Clear Decks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Death</td>
<td>• Neat Lines</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Effective team communications</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 5.3.3 Hazard Register: Hazards Specific to Oil Spill Response

| Deploying and retrieving near shore or offshore boom | Stored energy  
- Ropes/lines  
- Boom  
- Anchor points | Personal injury  
- Avoid standing in the bight  
- Avoid crossing lines of tension  
- Maintain situational awareness  
- Effective team communication  
- Use barriers and no go zones |
|---|---|---|
| Operating Equipment  
- Skimmers  
- Power packs  
- Pumps | Moving / Rotating equipment  
- Chemical spray  
- Slippery deck / equipment | Personal injury  
- Trained personnel to operate  
- Designated operator to maintain control of equipment at all times  
- Situational awareness / teamwork  
- Limit exposure  
  - Barriers / no go zones  
- PPE – gloves / safety glasses / protective clothing |
| | Stored hydraulic pressure | Personal injury  
- Environmental impact  
- Trained personnel to operate  
- Designated operator to maintain control of equipment at all times  
- Controlled pressure release  
  - Use hydraulic unloaders or safe method to relieve pressurised hoses prior to connection  
  - Release hydraulic pressure in equipment prior to disconnection of hoses  
- PPE – safety glasses/gloves  
- Sorbent materials/rags for oil discharge |
| Operating Equipment  
- Dispersant Spray Systems | Chemical spray  
- Slippery deck / equipment | Personal injury  
- Slip/trip/fall  
- Ingestion  
- Eye irritation  
- Skin irritation  
- Trained personnel to operate  
- Avoid exposure to spray plume  
  - Spray downwind  
  - Use barriers to restrict access to affected areas  
- Housekeeping – clean / flush deck and equipment  
- PPE – protective clothing / safety glasses / gloves / respirator mask |
| In situ burning | Smoke Plume | Personal Injury  
- Ingestion  
- Skin exposure  
- Limit Exposure  
  - Follow Procedures  
  - Observe weather/wind  
- PPE - Respirator |
| Fire | | Personal injury  
- Damage to equipment  
- Death  
- Firefighting equipment to be available and discussed during safety briefing  
- Limit Exposure  
  - Follow procedures  
  - Observe weather/wind  
- PPE – Protective Clothing |
| Working in Oiled Environment  
- Working with Oiled Equipment  
- Waste Management | Contact with oil  
- Skin irritation  
- Ingestion  
- Inhalation | Suitable Air/Water Quality Monitoring Program  
- Limit Exposure  
  - Timed shifts (Heat during the day may increase vapor levels – work in cool conditions early)  
  - Observe weather/wind  
  - Comply with Occupational Exposure Limits  
- PPE  
  - Protective Clothing  
  - Gloves  
  - Respirators |
| Working with Oiled Wildlife | Bites  
- Stings | Personal injury  
- Anaphylaxis  
- Death  
- Vigilance / situational awareness  
- Appropriate first aid kit  
- Trained personnel to perform  
- Protective clothing and gloves |
### 5.3.4 Hazard Register: Australian Regional Hazards

<table>
<thead>
<tr>
<th>REGION</th>
<th>HAZARD</th>
<th>RISKS</th>
<th>CONTROLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Far North of Australia</td>
<td>Crocodiles</td>
<td>• Personal injury</td>
<td>• Vigilance near shorelines and waterways</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Death</td>
<td>• Avoid entering the water</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Observes safety warning signs</td>
</tr>
<tr>
<td></td>
<td>Tropical Jellyfish</td>
<td>• Personal injury</td>
<td>• Vigilance near shorelines and waterways</td>
</tr>
<tr>
<td></td>
<td>– Box jellyfish</td>
<td>• Anaphylaxis</td>
<td>• Avoid entering the water</td>
</tr>
<tr>
<td></td>
<td>– Irukandji</td>
<td>• Death</td>
<td>• Protective clothing and gloves</td>
</tr>
<tr>
<td></td>
<td>Mosquitoes</td>
<td>• Dengue fever</td>
<td>• Protective clothing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ross River Virus</td>
<td>• Repellant</td>
</tr>
<tr>
<td></td>
<td>Stonefish/Cone shell</td>
<td>• Personal injury</td>
<td>• Vigilance near shorelines and waterways</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Anaphylaxis</td>
<td>• Avoid entering the water</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Death</td>
<td>• Protective footwear, clothing, and gloves</td>
</tr>
<tr>
<td>Australia wide</td>
<td>• Snakes</td>
<td>• Personal injury</td>
<td>• Protective clothing and footwear</td>
</tr>
<tr>
<td></td>
<td>• Spiders</td>
<td>• Death</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sharks</td>
<td>• Personal injury</td>
<td>• Vigilance in offshore areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Death</td>
<td>• Avoid entering the water</td>
</tr>
</tbody>
</table>
## 5.4 Safety Plan Checklist

<table>
<thead>
<tr>
<th>Record keeping</th>
<th>ICC</th>
<th>FOB</th>
<th>Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain a log of actions</td>
<td>✔️</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepare shift handover documents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide written records of briefings delivered</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Details on selected hazard controls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety Briefings to provide all relevant safety information to in-field operational personnel</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### A medical plan and emergency first aid procedures

**An emergency contact list for in-field responders**
- Safety and Health
- Wildlife
- Indigenous Affairs
- Incident Control Centre
- Logistics
- Operations

### Safety information specific to the spilled product

**Air monitoring considerations**
- Sign in/Sign out, or QR code ID tag tracking
- Emergency contact information
- Medical history/fitness for task
- Fatigue management

**Safety Information specific to areas of operation**
- FWADC
- Helicopter/Aerial Observation
- Dispersant Application
- Shoreline Assessment
- Shoreline Cleanup
- Shoreline Containment and Recovery
- Offshore/Nearshore Containment and Recovery
- Oiled Wildlife Response
- Night operations
- Transport and vehicles
- Decontamination
- Waste management

### Safety information specific to regional locations
- Hazardous locations (Rocky shorelines, islands, significant tidal movement)
- Northern Australia (Stingers, Crocodiles)
- Affected wildlife (Handling, disease)

### Safety information specific to environmental conditions
- Northern Australia (Heat)
- Southern Australia (Cold climate exposure)

### Provision for continuous feedback to the IMT
- Field reporting of potential hazards
- Incident reporting
- Investigation outcomes and recommended actions
### 5.5 Safety Plan

**ICS 208 Safety Message/Plan**

<table>
<thead>
<tr>
<th>1. Incident Name:</th>
<th>2. Operational Period:</th>
<th>Date From:</th>
<th>Time From:</th>
<th>Date To:</th>
<th>Time To:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


- **Scope of Activities:**
  - Marine/vessel:
  - Shoreline:
  - Shoreline:

- **Safety Priorities:**
  - Marine/vessel:
  - Shoreline:
  - Other:

- **Hazard Register:**

- **Risk Assessment:**

- **Monitoring:**

- **Decontamination:**

- **Site Map/location:**

- **Emergency procedures/contact details:**
  - 

- **Communications:**

- **Hazard/Incident Reporting:**

- **Site Security:**

**Attachments:**

- Product Safety Data Sheet/s
- Tactical Brief Template
- Job Safety Analysis Template
- Safety Plan Checklist
- Safety Plan Core Document Chart
- Site Safety Survey Template
- Site Safety Brief Template

4. Site Safety Plan Required? Yes/no

Approved Site Safety Plan(s) Located At:

5. Prepared by: Name: __________________________ Position/Title: __________________________ Signature: __________________________

ICS 208 | IAP Page ______ | Date/Time: ______
ICS 208
Safety Message/Plan


Preparation: The ICS 208 is an optional form that may be included and completed by the Safety Officer for the Incident Action Plan (IAP).

Distribution: The ICS 208, if developed, will be reproduced with the IAP and given to all recipients as part of the IAP. All completed original forms must be given to the Documentation Unit.

Notes:
- The ICS 208 may serve (optionally) as part of the IAP.
- Use additional copies for continuation sheets as needed, and indicate pagination as used.

<table>
<thead>
<tr>
<th>Block Number</th>
<th>Block Title</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Incident Name</td>
<td>Enter the name assigned to the incident.</td>
</tr>
<tr>
<td>2</td>
<td>Operational Period</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Date and Time From</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Date and Time To</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enter the start date (month/day/year) and time (using the 24-hour clock) and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>end date and time for the operational period to which the form applies.</td>
</tr>
<tr>
<td>3</td>
<td>Safety Message/Expanded</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Safety Message, Safety Plan, Site Safety</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plan</td>
<td>Enter clear, concise statements for safety message(s), priorities, and key</td>
</tr>
<tr>
<td></td>
<td></td>
<td>command emphasis/decisions/directions. Enter information such as known safety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>hazards and specific precautions to be observed during this operational</td>
</tr>
<tr>
<td></td>
<td></td>
<td>period. If needed, additional safety message(s) should be referenced and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>attached.</td>
</tr>
<tr>
<td>4</td>
<td>Site Safety Plan Required?</td>
<td>Check whether or not a site safety plan is required for this incident.</td>
</tr>
<tr>
<td></td>
<td>Yes ☐ No ☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Approved Site Safety Plan(s) Located At</td>
<td>Enter where the approved Site Safety Plan(s) is located.</td>
</tr>
<tr>
<td>5</td>
<td>Prepared by Name</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Name</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Position/Title</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Signature</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Date/Time</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enter the name, ICS position, and signature of the person preparing the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>form. Enter date (month/day/year) and time prepared (24-hour clock).</td>
</tr>
</tbody>
</table>
5.6 Site Safety Evaluation Form

From IPIECA/OGP JIP – Oil Spill Responder Health and Safety

<table>
<thead>
<tr>
<th>1. SITE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. DATE:</td>
</tr>
<tr>
<td>3. TIME:</td>
</tr>
<tr>
<td>4. INCIDENT: (Attach MSDS)</td>
</tr>
<tr>
<td>5. PRODUCT(S):</td>
</tr>
</tbody>
</table>

### 6. Site Characterization (tick all relevant boxes):

<table>
<thead>
<tr>
<th>Area:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ocean</td>
</tr>
<tr>
<td>Bay</td>
</tr>
<tr>
<td>River</td>
</tr>
<tr>
<td>Saltmarsh</td>
</tr>
<tr>
<td>Mudflats</td>
</tr>
<tr>
<td>Shoreline</td>
</tr>
<tr>
<td>Sandy</td>
</tr>
<tr>
<td>Rocky</td>
</tr>
<tr>
<td>Cliffs</td>
</tr>
<tr>
<td>Docks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Use:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
</tr>
<tr>
<td>Industrial</td>
</tr>
<tr>
<td>Farming</td>
</tr>
<tr>
<td>Public</td>
</tr>
<tr>
<td>Government</td>
</tr>
<tr>
<td>Recreational</td>
</tr>
<tr>
<td>Residential</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weather:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ice/frost</td>
</tr>
<tr>
<td>Snow</td>
</tr>
<tr>
<td>Rain</td>
</tr>
<tr>
<td>Wind</td>
</tr>
<tr>
<td>Sun</td>
</tr>
</tbody>
</table>

**Temperature**

### 8. Site Hazards:

- Bird handling
- Boat safety
- Chemical hazards (to skin)
- Cold
- Drum handling
- Electrical hazards
- Endemic diseases
- Equipment operations
- Fatigue
- Fire, explosion, in-situ burn
- Fumes, vapours, gases
- Heat
- Helicopter operations
- Humidity
- Insects/animals
- Lifting
- Manual handling
- Motor vehicles
- Noise
- Overhead/buried utilities
- Pumps and hoses
- Slips, trips and falls
- Steam and hot water
- Tides
- Trenches, excavations
- UV radiation
- Visibility
- Weather
- Work near water
- Other (specify overleaf)

### 9. Air Monitoring:

- O₂
- LEL
- Benzene
- H₂S
- Other (specify overleaf)

### 10. Personal Protective Equipment:

- Foot protection
- Impervious suits
- Ear protection
- Other

- Coveralls
- Eye protection
- Respirators

- Head protection
- Personal flotation
- Hand protection

### 11. Site Facilities Required:

- Sanitation
- First Aid
- Decontamination

### 12. Emergency Plan Requirements:

- Alarm system
- Evacuation plan

### 13. Contact Details Required:

- Fire
- Doctor
- Ambulance
- Police
- Hospital
- Other (specify overleaf)

### 14. Date Plan Completed:  

### 15. Plan Completed by:  

Continued overleaf...
<table>
<thead>
<tr>
<th>Site Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location/Map Reference:</td>
</tr>
</tbody>
</table>

Include work zones, first-aid locations, primary and secondary escape routes, assembly points, staging area and command post locations. Also include notes to entries marked 'Other' on the previous page.
5.7 Site Safety Briefing Template

<table>
<thead>
<tr>
<th>Incident:</th>
<th>Project Code:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Name:</td>
<td>Location/Map Ref.:</td>
</tr>
<tr>
<td>Date:</td>
<td>Time:</td>
</tr>
<tr>
<td>Briefing Conducted by:</td>
<td></td>
</tr>
</tbody>
</table>

Topics Covered:

- Weather conditions
- Injuries and illnesses
- Corrective actions/precautions
- First aid
- Site emergency plan
- Site hazards
- Oil/chemical hazards
- PPE to be worn
- Decontamination procedures
- Other topics (list below)

Comments:
5.8 Standard Operating Procedures

Standard Operating Procedures are available for all NatPlan equipment (AMOSC, AMSA, and Mutual Aid). Contact the supplier to acquire if unavailable via supplier websites.
## 5.9 Job Safety Analysis

<table>
<thead>
<tr>
<th>ITEM NUMBER</th>
<th>WORK ACTIVITY</th>
<th>HAZARD</th>
<th>RISK CONTROL</th>
<th>PERSONS RESPONSIBLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Break the job down into steps</strong></td>
<td><strong>What could harm someone?</strong></td>
<td><strong>What can be done to make the job safe?</strong></td>
<td><strong>Who will make sure it happens?</strong></td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
JOB SAFETY ANALYSIS – TASK HAZARD ASSESSMENT FORM (Non Regular Worksite)

This table is to be used by AMOSC personnel, Core Group and training participants in an unfamiliar worksite environment. This listing of Hazards and Controls can assist the work group to manage hazards for the proposed work. The table does not include all possible hazards.

It is an expectation that required PPE for the activity and work conditions will be used.

<table>
<thead>
<tr>
<th>Poor lighting or visibility</th>
<th>Falling or Dropped Objects</th>
<th>Portable Electrical Equipment</th>
<th>Radiation Hazard</th>
<th>Equipment and Tools</th>
<th>High Energy or High Voltage</th>
<th>Excavations</th>
<th>Waste Clean-up and Disposal</th>
<th>Confined Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provide alternate lighting</td>
<td>• Use signs and barriers to restrict entry or access under work at elevation</td>
<td>• Use lifting equipment to raise tools to or from the work platform</td>
<td>• Use barriers and signs to restrict access</td>
<td>• Inspect equipment and tools</td>
<td>• Restrict access to authorised personnel only</td>
<td>• Have an excavation plan or safe work practice</td>
<td>• Apply environmental management practices</td>
<td>• Discuss confined space entry safe work practice</td>
</tr>
<tr>
<td>• Wait or defer until visibility improves</td>
<td>• Use continuous gas testing</td>
<td>• Implement NORM Naturally Occurring Radioactive Material controls</td>
<td>• Notify personnel who may be affected</td>
<td>• No use of modified tools</td>
<td>• Discharge equipment and make electrically dead</td>
<td>• Locate underground pipes or cables by hand digging</td>
<td>• Monitor access or entry</td>
<td>• Protect surfaces from inadvertent contact</td>
</tr>
<tr>
<td>• No work over water that could require rescue (including sea state)</td>
<td>• Protect electrical leads from impact or damage</td>
<td>• Implement continuous gas testing</td>
<td>• Use protective guards</td>
<td>• Use correct tools and equipment for task</td>
<td>• Observe safe distances for live cables</td>
<td>• De-energize underground services</td>
<td>• Do not locate mobile engines near confined space</td>
<td>• Develop rescue plan</td>
</tr>
<tr>
<td>• Use lift and slide methods</td>
<td>• Conduct RAD (Radiation Absorbed Dose) testing</td>
<td>• Protect electrical leads from impact or damage</td>
<td>• Use lift and slide methods</td>
<td>• Use flash burn PPE suit</td>
<td>• Use insulated gloves, tools and mats</td>
<td>• Implement confined space entry controls</td>
<td>• Develop rescue plan</td>
<td></td>
</tr>
<tr>
<td>Other Energy Sources</td>
<td>Other Hazards</td>
<td>Emergency Response</td>
<td>Mobile Equipment</td>
<td>Lifting Equipment</td>
<td>High Noise</td>
<td>Hazardous Substance</td>
<td>Ignition Sources</td>
<td>Simultaneous Operations (SIMOPS)</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------</td>
<td>-------------------</td>
<td>------------------</td>
<td>------------------</td>
<td>-----------</td>
<td>-------------------</td>
<td>----------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>• Spring compression or expansion control</td>
<td>• Implement abrasive blasting controls (for equipment and practices)</td>
<td>• Keep egress route open</td>
<td>• Access equipment condition</td>
<td>• Confirm lifting equipment condition and certification</td>
<td>• Wear correct hearing PPE</td>
<td>• Drain or purge equipment</td>
<td>• Remove, isolate or contain combustible materials</td>
<td>• MOC required for deviation from SIMOPS restrictions</td>
</tr>
<tr>
<td>• Implement electromagnetic (radio) controls</td>
<td>• Prepare a dive plan</td>
<td>• Keep shower and eye wash stations accessible</td>
<td>• Implement controls on users or access</td>
<td>• Manage exposure times</td>
<td>• Manage exposure times</td>
<td>• Follow MSDS controls</td>
<td>• Provide firefighting equipment</td>
<td>• Interface between groups</td>
</tr>
<tr>
<td>• Manage pressure or vacuum</td>
<td>• Manage potential blocked or plugged equipment</td>
<td>• Have a rescue plan in place</td>
<td>• Limit and monitor proximity to live equipment or cables</td>
<td>• Shutoff equipment</td>
<td>• Use “quiet” tools</td>
<td>• Implement health hazards controls (Lead, Asbestos, H2S, Iron Sulphide, Sulphur Dioxide, NORM – Naturally Occurring Radioactive Material)</td>
<td>• Conduct continuous gas testing</td>
<td>• Use barriers and signs to segregate activities</td>
</tr>
<tr>
<td>• Manage heat generating processes</td>
<td>• MOC (Management of Change) required for temporary connections or modifications</td>
<td>• Keep emergency alarm, fire equipment, and shutdown locations unobstructed</td>
<td>• Manage overhead hazards</td>
<td>• Have a documented and approved lift plan</td>
<td>• Sound barriers or curtains</td>
<td>• Test or analyse material</td>
<td>• Bond or earth for static electricity or cathodic protection</td>
<td></td>
</tr>
<tr>
<td>Print Name</td>
<td>Sign</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Print Name</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Job Safety Analysis

JSA Read and Signed by ALL participants involved in activity.
### 5.10 Safety Report Form

**Safety Report Form**

<table>
<thead>
<tr>
<th>Incident / Near Miss / Hazard / Drill / Initiative / Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Date</td>
</tr>
<tr>
<td>Incident Date</td>
</tr>
<tr>
<td>Investigation Date</td>
</tr>
</tbody>
</table>

**Description of Circumstance**

<table>
<thead>
<tr>
<th>Injury / Treatment details to personnel</th>
<th>Initial actions</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Damage to property</th>
<th>Initial actions</th>
</tr>
</thead>
</table>

**Action taken to prevent recurrence**

<table>
<thead>
<tr>
<th>Management comment</th>
<th>Report action complete</th>
</tr>
</thead>
</table>
### 5.11 Wind Chill Chart

<table>
<thead>
<tr>
<th>Wind Speed (km/h)</th>
<th>What to Look for When Estimating Wind Speed</th>
<th>Temperature (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Wind felt on face; wind vane begins to move.</td>
<td>-3 -9 -15 -21 -27 -33 -39 -45 -51 -57</td>
</tr>
<tr>
<td>30</td>
<td>Wind raises loose paper, large flags flap and small tree branches move.</td>
<td>-6 -13 -20 -26 -33 -39 -45 -52 -59 -65</td>
</tr>
<tr>
<td>40</td>
<td>Small trees begin to sway and large flags extend and flap strongly.</td>
<td>-7 -14 -21 -27 -34 -41 -48 -54 -61 -68</td>
</tr>
<tr>
<td>50</td>
<td>Large branches of trees move, telephone wires whistle and it is hard to use an umbrella.</td>
<td>-8 -15 -22 -29 -35 -42 -49 -56 -63 -69</td>
</tr>
<tr>
<td>60</td>
<td>Trees bend and walking against the wind is hard.</td>
<td>-9 -16 -23 -30 -36 -43 -50 -57 -64 -71</td>
</tr>
</tbody>
</table>
### 5.12 Hazardous Components of Petroleum Products

Identification of potential hazards arising from petroleum products with which personnel may come into contact during a response.

**Table 5-1: Relative Potential Health Concern for Components of Petroleum Products**

(Ref: *Chemical Human Health Hazards Associated with Oil Spill Response: API 4689*)

<table>
<thead>
<tr>
<th>Component of Potential Concern</th>
<th>Product</th>
<th>Crude Oil</th>
<th>Gasoline</th>
<th>Middle Distillates:</th>
<th>Kerosene</th>
<th>Jet Fuel</th>
<th>Diesel/Heating Oil</th>
<th>Heavy Fuel Oil</th>
<th>Asphalt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td></td>
<td>X</td>
<td>X</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>n-Hexane</td>
<td></td>
<td>⭐️</td>
<td>⭐️</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Hydrogen Sulphide</td>
<td></td>
<td>X</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>⭐️</td>
<td>⭐️</td>
<td></td>
</tr>
<tr>
<td>Naphthalene</td>
<td></td>
<td>O</td>
<td>O</td>
<td>⭐️</td>
<td>⭐️</td>
<td>*⭐️</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Polynuclear Aromatic Hydrocarbons (PNAs)</td>
<td></td>
<td>X</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>X</td>
<td>⭐️</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetraethyl/tetra methyl Lead (TEL/TML)</td>
<td></td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Toluene</td>
<td></td>
<td>⭐️</td>
<td>⭐️</td>
<td>⭐️</td>
<td>⭐️</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Total Hydrocarbons</td>
<td></td>
<td>⭐️</td>
<td>X</td>
<td>⭐️</td>
<td>⭐️</td>
<td>⭐️</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Trimethyl Benzene</td>
<td></td>
<td>⭐️</td>
<td>⭐️</td>
<td>⭐️</td>
<td>⭐️</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

Ratings are relative to specific conditions and may vary considerably. For detailed interpretation of the hazards associated with particular products, exposure limits, and safe working limits in any given response location, the services of qualified specialist personnel must be engaged.

- X – Component of concern
- ⭐️ – Component of low concern
- O – Component of no concern

1 - TEL/TML ratings may be higher outside US
2 – Aviation Gasoline
5.13 **Heat Disorder Information**

Additional monitoring for heat stress can be utilised when identified as a hazard control through the RMP. Heat Stress monitors are available however application of risk management procedures identified in the Safety Plan should be such that responders are prevented from reaching this point.

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**Urine colour chart**

This urine colour chart will give you an idea of whether a person is drinking enough or is dehydrated (lost too much water from the body).

### ARE YOU DRINKING ENOUGH?

- **Very dehydrated**
  - Drink a large bottle of water immediately

- **Dehydrated**
  - Drink 2-3 glasses of water now

- **Somewhat dehydrated**
  - Drink a large glass of water now

- **Hydrated – you are drinking enough**
  - Keep drinking at the same rate

---

**HEAT EXHAUSTION/HEAT STROKE & TREATMENT**

- **Normal Body Core Temp.** ≤ 37°C
- **Heat Exhaustion** 38°C – 40°C
- **Heat Stroke** ≥ 41°C and higher

### Signs and Symptoms

<table>
<thead>
<tr>
<th>Heat Exhaustion</th>
<th>Heat Stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listless</td>
<td>Reduced level of consciousness</td>
</tr>
<tr>
<td>Weak</td>
<td>Irritable</td>
</tr>
<tr>
<td>Dizzy</td>
<td>Muscular pain</td>
</tr>
<tr>
<td>Rapid Pulse</td>
<td>Rapid Pulse</td>
</tr>
<tr>
<td>Low Blood Pressure</td>
<td>High Blood Pressure</td>
</tr>
<tr>
<td>? Nausea</td>
<td>? Nausea</td>
</tr>
<tr>
<td>? Vomiting</td>
<td>? Vomiting</td>
</tr>
<tr>
<td>Mental Status - Normal</td>
<td>Mental Status - Confused</td>
</tr>
<tr>
<td>Behavior - Normal</td>
<td>Behavior - Irratic</td>
</tr>
<tr>
<td></td>
<td>Hot, dry, red skin</td>
</tr>
<tr>
<td></td>
<td>Death</td>
</tr>
</tbody>
</table>

### Treatment

- **Heat Exhaustion**
  - Lay person down & elevate legs
  - Ensure normal breathing
  - If thirsty give water to drink
  - Report incident to supervisor

- **Heat Stroke**
  - Move person to cool ventilated area
  - Check for breathing, pulse & circulation
  - If possible cover the person with ice packs or cold water to reduce the body temperature
  - Give water to drink
  - Monitor vital signs
  - Get person to hospital
  - Report incident to supervisor
5.14 Permissible Noise Exposure

The national standard for exposure to noise in the occupational environment is an eight-hour equivalent continuous A-weighted sound pressure level, LAeq,8h, of 85dB(A).

For peak noise, the national standard is a C-weighted peak sound pressure level, LC,peak, of 140dB(C).

The exposure to noise is taken to be that measured at the employee's ear position without taking into account any protection, which may be afforded by personal hearing protectors.

In the National Standard for Occupational Noise [NOHSC: 1007(2000)]: ‘LAeq,8h’ (eight-hour equivalent continuous A-weighted sound pressure level in dB(A) referenced to 20 micro pascals) means that steady noise level which would, in the course of an eight-hour period, cause the same A-weighted sound energy as that due to the actual noise over an actual working day. LAeq, 8h is to be determined in accordance with Part 1 of Australian/New Zealand Standard AS/NZS 1269.1. ‘LC,peak’ (peak noise level) means C-weighted peak sound pressure level in decibels measured by a sound level meter with a peak detector-indicator characteristic complying with Australian Standard AS 1259.12.

‘Noise’ means any unwanted or damaging sound.

‘Personal hearing protectors’ means a device, or pair of devices, worn by a person or inserted in the ears of a person to protect the person's hearing.

Additional Information:

5.15 Working at Heights

[From Worksafe.vic.gov.au]

Falls from height can leave employees with permanent and debilitating injuries. Falls often occur from roofs, scaffolds, ladders, trucks and mezzanine floors or into pits or holes. Falls from less than one metre can result in serious injuries such as fractures, spinal cord injury, concussions and brain damage. The risk of serious injury or death from a fall increases significantly when working at heights over two metres.

Getting started

• Where possible redesign the workplace or the work task to minimise the need for people to do the work, or part of the work at height.
• Where work must be done at height, ensure the work is done from one of the following (controls from lower on the list may only be used where it is not reasonably practicable to use controls from higher on the list):
  • an elevated work platform or portable scaffold with secure handrails
  • use travel restraint systems
  • fall arrest systems (E.g. Safety harness, industrial safety net or catch platform)
  • step platforms
  • Ladders.

Note: Travel restraint and fall arrest systems and the associated anchorages must be designed by a competent person. Any person using such systems must be given appropriate training and supervision.

• Ensure mezzanine floors, storage areas and any other areas that are intended to be accessed have safe access with well-maintained stairs and secure handrails and toe boards around the perimeter.
• Any storage area including racking, shelving or the roof space of an office area within a factory must be designed for the intended loads.
Using ladders

• Use a step platform ladder, where possible, as they provide a larger, more stable work surface than ladders.
• Always maintain three points of contact when ascending, descending or standing on a ladder.
• Do not use ladders on balconies or other areas that increase the potential fall distance for the user.
• Ensure employees do not:
  – stand higher than the second tread below the top plate of any stepladder
  – use ladders when using tools that require a high degree of force or are designed to be operated with two hands
  – Use ladders to work over other people.
• Ensure ladders are placed squarely on firm, non-slip surfaces. Secure ladders by tying them to a support at the top and/or bottom. Alternatively, have another person ‘foot’ the ladder.
• Inspect ladders regularly. Repair or replace ladders where rungs, steps or treads or top plates are missing, worn, damaged or loose.

Additional Information:

5.16 Manual Handling

[From Worksafe.vic.gov.au]

Manual handling happens in most small businesses and involves using your body to exert force to lift, lower, push, pull, carry, move, hold or restrain objects or people.

It is the biggest cause of workplace injury in Victoria. Each year, thousands of people are injured as a result of manual handling.

Manual handling injuries typically occur when employees lift heavy or awkward items, as well as when they carry out repetitive actions such as stacking or unstacking items. The risk of injury may be increased if these tasks are carried out over long periods, at a fast pace or in other difficult conditions.

Environmental factors such as heat, cold and lighting levels can also increase the risk of an injury.

Prescribed weight limits are not set because different individuals have different physical capabilities.

Getting started

• Use mechanical aids such as trolleys, conveyors, hoists or forklifts to move objects.
• Regularly maintain mechanical aids.
• Design or adjust work surfaces so they are the correct height for employees and so there is adequate space for working or storage.
• Use adjustable platforms or scissor lifts so employees can load and unload objects from around waist height and without having to extend their reach.
• Suspend hand tools and hold items in jigs or vices so they can be orientated to ensure favourable postures when being worked on.
• Select tools with anti-vibration or anti-kickstart features.
• Ensure adequate space is provided for work or storage and trolleys are used to move items. The work area should be between knee and shoulder height, and close to the employee’s body.
• Where possible, automate manual tasks and processes or provide suitable mechanical aids. If not possible, ensure employees regularly rotate to different tasks.
• Ensure employees are trained how to use equipment safely.

Additional Information: