



Government of **Western Australia**  
Department of **Mines, Industry Regulation and Safety**

## **Isolation of hazardous energies audit – guide**

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# Introduction

The scope of this audit covers the safety standards associated with the management of hazardous energy.

This audit was developed in accordance with the Guideline on *Isolation of hazardous energies associated with plant in Western Australian mining operations*.

The audit is structured so that operators can select those aspects relevant to the size and complexity of their operations, and the activities undertaken.

*Note: Some audit standards appear to be duplicated but the intent is that in some instances it covers the development of higher level management systems and in the other instance it covers their implementation at site.*

Where the term “verify” is used in the guideline, it implies there is a regulatory requirement for compliance with the standard. Where the term “ensure” or “confirm” is used, there is no mandatory requirement for compliance but the standard sets out a recommended practice.

## List of abbreviations

ALARP -	As low as reasonably practicable
AS -	Australian Standard
DMIRS -	Department of Mines Industry Regulation and Safety
ELR -	Electricity (Licencing) Regulations 1991
MSIA -	<i>Mines Safety and Inspection Act 1994</i>
MSIR -	<i>Mines Safety and Inspection Regulations 1995</i>
NZS -	New Zealand Standard
P&ID -	Piping and instrumentation drawing
PTW -	Permit to work
SRS -	The Department of Mines Industry Regulation and Safety’s online Safety Regulation System
r. -	Regulation (of the MSIR)
rr. -	Regulations (of the MSIR)
s. -	Section (of the MSIA)
ss. -	Sections (of the MSIA)

## Supporting Documentation

Documentation referred to in this audit can be found via the links below:

State Law Publisher, [www.slp.wa.gov.au](http://www.slp.wa.gov.au)

- *Mines Safety and Inspection Act 1994*
- Mines Safety and Inspection Regulations 1995

Department of Mines Industry Regulation and Safety (DMIRS) mining safety publications

<http://www.dmp.wa.gov.au/Safety/Mining-Safety-publications-16162.aspx>

- Accident and incident reporting – guideline
- Isolation of hazardous energies in plant in Western Australian mining operations – guideline.

# 1 Risk Management Process

This section examines the risk identification and risk control mechanisms across the mine's operations to ensure that potential hazardous energies exposures have been identified and adequately controlled.

Point	Standard	Guideline
1.1	Hazardous energies associated with fixed plant have been identified.	<p><b>Intent:</b></p> <p>To ensure that a systematic process has been followed to identify hazardous energies associated with fixed plant.</p> <p>The system should consider, at minimum, the following hazardous energies:</p> <ul style="list-style-type: none"> <li>• Electrical energy,</li> <li>• Chemical energy,</li> <li>• Mechanical (or kinetic energy),</li> <li>• Stored (or potential) energy,</li> <li>• Thermal energy,</li> <li>• Radiation energy and</li> <li>• Gravitational energy.</li> </ul> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Interview and documentary verification.</p>
1.2	Hazardous energies associated with mobile plant have been identified.	<p><b>Intent:</b></p> <p>To ensure that a systematic process has been followed to identify hazardous energies associated with mobile plant.</p> <p>The system should consider, at minimum, the following hazardous energies:</p> <ul style="list-style-type: none"> <li>• Mechanical (or kinetic energy),</li> <li>• Stored (or potential) energy,</li> <li>• Gravitational energy,</li> <li>• Electrical energy and</li> <li>• Thermal energy.</li> </ul> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Interview and documentary verification.</p>

Point	Standard	Guideline
1.3	Foreseeable potential exposures to hazardous energies have been identified.	<p><b>Intent:</b> To verify that both partial and complete de-energisation requirements have been considered with regard to fixed and mobile plant.</p> <p><b>Personnel:</b> Department Manager and/or other relevant employees.</p> <p><b>Method:</b> Interview, documentation and field observation. Refer MSIR r. 6.21</p>
1.4	Potential exposures have considered hazardous combinations.	<p><b>Intent:</b> To ensure that multiple energy sources with a potential cumulative effect have not been overlooked, e.g. electricity and water; magnetic field and metal; mixing incompatible materials.</p> <p><b>Personnel:</b> Department Manager and/or other relevant employees.</p> <p><b>Method:</b> Interview and documentary verification.</p>
1.5	Hazardous energies identified have been appropriately risk assessed.	<p><b>Intent:</b> To verify that identified hazardous energies have been allocated a level of risk based on the likelihood and consequence of exposure. To verify the level of risk / risk ranking applied is reasonable and objective. To ensure that the site's own, approved risk assessment tools have been used for this purpose. To ensure that relevant, competent, experienced and knowledgeable people are involved in the risk assessment process.</p> <p><b>Personnel:</b> Departmental Manager and/or other relevant employees.</p> <p><b>Method:</b> Interview and documentary verification. Refer MSIR rr. 6.2, 6.17 &amp; 6.18</p>
1.6	Hazardous energy control has been included in the risk assessment.	<p><b>Intent:</b> To ensure that controls have been documented that are appropriate to the level of risk. To confirm that the controls specified have been implemented.</p> <p><b>Personnel:</b> Department Manager and/or other relevant employees.</p> <p><b>Method:</b> Interview, documentary and field verification.</p>

Point	Standard	Guideline
1.7	Multiple controls have been considered to compensate for human factors.	<p><b>Intent:</b></p> <p>To ensure that where human involvement is considered to be a hazardous energy exposure risk, multiple barriers have been introduced to reduce risk to as low as reasonably practicable.</p> <p><b>Personnel:</b></p> <p>Department Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Interview and documentary verification.</p>
1.8	The risk assessment identified residual risk.	<p><b>Intent:</b></p> <p>To ensure the ranking applied to the residual risk is representative of the actual effectiveness of the controls.</p> <p><b>Personnel:</b></p> <p>Department Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Interview and documentary verification.</p>
1.9	The risk assessment is reviewed periodically or when there is change or modifications to the plant, equipment, or tasks being performed.	<p><b>Intent:</b></p> <p>To ensure a process exists that monitors and reviews control effectiveness.</p> <p><b>Personnel:</b></p> <p>Risk owners and register maintainer.</p> <p><b>Method:</b></p> <p>Documentary verification and risk owner interview.</p>
1.10	The risk assessment is completed by relevant and competent people.	<p><b>Intent:</b></p> <p>To ensure that systematic identification of hazardous energies are conducted by knowledgeable, experienced and appropriate people to identify all potential scenarios for hazardous energy release and exposure across the operation.</p> <p><b>Personnel:</b></p> <p>Risk owners and register maintainer.</p> <p><b>Method:</b></p> <p>Documentary verification and risk owner interview.</p> <p>The risk assessment, at minimum, should be completed by people who are competent in the:</p> <ul style="list-style-type: none"> <li>• plant or equipment,</li> <li>• tasks to be carried out, and</li> <li>• risk assessment process.</li> </ul>

## 2 Management of isolation – fixed plant

This section focuses upon how isolation of hazardous energies are managed in the fixed plant environment to ensure that there is a consistent application of control measures.

Point	Standard	Guideline
2.1	Hazardous energy control has been considered in the design of plant.	<p><b>Intent:</b></p> <p>To ensure that the design of new plant and modifications have included facilities for positive isolation.</p> <p>To verify that where practicable isolation and dissipation / bleed points are located in close proximity to hazardous energy sources.</p> <p><b>Personnel:</b></p> <p>Department Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and in-field inspection.</p>
2.2	There is a system to uniquely identify all plant components.	<p><b>Intent:</b></p> <p>To verify that there is a system in place to identify components such as conveyors, rotating plant, pressure vessels, pumps, piping, valves and electrical equipment.</p> <p>To verify that essential / critical components are permanently labelled / marked.</p> <p>To ensure that in-field labels / identifiers link back directly and accurately to process flow diagrams, electrical drawings and / or piping and instrumentation drawings (P&amp;ID's).</p> <p><b>Personnel:</b></p> <p>Department Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and in-field inspection. Refer MSIR rr. 6.2 &amp; 6.21</p>

Point	Standard	Guideline
2.3	There is an authorised procedure for the management and isolation of hazardous energies.	<p><b>Intent:</b></p> <ul style="list-style-type: none"> <li>To verify that there are site standard processes for the isolation of hazardous energies.</li> <li>To ensure that the procedure reflects the outcomes of the hazardous energy risk assessment.</li> <li>To verify that the procedure is clear in its intention and there is no ambiguity regarding isolation requirements.</li> <li>To ensure the procedure clearly delineates between personal isolations and permit-to-work isolations based on risk.</li> <li>To ensure that the principles of isolation – lock, tag, try – are met within the procedure.</li> </ul> <p><b>Personnel:</b></p> <ul style="list-style-type: none"> <li>Registered Manager and/or other relevant employees.</li> </ul> <p><b>Method:</b></p> <ul style="list-style-type: none"> <li>Documentary verification and interview</li> <li>Refer MSIR rr. 6.2 &amp; 6.21</li> </ul>
2.4	The isolation methods are appropriate to the risk.	<p><b>Intent:</b></p> <ul style="list-style-type: none"> <li>To ensure that risks associated with hazardous energies after isolations are reduced to as low as practicable.</li> <li>To ensure that higher level of controls are implemented to isolate hazards with higher risks. E.g. a single ball valve can be used to isolate a potable water line, but is not acceptable to isolate a cyanide or sulfuric acid line. A non-return valve is not to be considered as an isolation valve.</li> </ul> <p><b>Personnel:</b></p> <ul style="list-style-type: none"> <li>Department Manager and/or other relevant employees.</li> </ul> <p><b>Method:</b></p> <ul style="list-style-type: none"> <li>Documentary verification and in-field validation.</li> </ul>
2.5	Roles and responsibilities associated with hazardous energy isolation are clearly allocated.	<p><b>Intent:</b></p> <ul style="list-style-type: none"> <li>To verify that all elements related to isolation implementation and supervision have been formally allocated to relevant personnel.</li> <li>To confirm that those personnel attributed roles and responsibilities understand the extent of their obligations.</li> <li>To confirm that all persons allocated roles associated with the management of isolations are competent to meet the requirements of those roles.</li> </ul> <p><b>Personnel:</b></p> <ul style="list-style-type: none"> <li>Registered Manager and/or other relevant employees.</li> </ul> <p><b>Method:</b></p> <ul style="list-style-type: none"> <li>Documentary verification and interview</li> <li>Refer MSIR rr. 6.2 &amp; 6.21</li> </ul>



Point	Standard	Guideline
2.6	Access to and isolation of high voltage electrical supply is only conducted by an authorised HV operator.	<p><b>Intent:</b> To verify that all high voltage electrical isolations are conducted by appointed competent persons.</p> <p><b>Personnel:</b> Registered Manager and/or other relevant employees.</p> <p><b>Method:</b> Documentary verification and interview. (Appointment must be recorded in the mine record book). Refer MSIR r. 5.18(2)(b)</p>
2.7	Site procedures include contractor involvement and competency requirements for work on isolated plant.	<p><b>Intent:</b> To ensure that a formal, documented process is in place to cater for contractor use of personal locks. To confirm that a formal, documented process is in place to assess the competency of contractor personnel to comply with site isolation methods.</p> <p><b>Personnel:</b> Registered manager and / or other relevant personnel.</p> <p><b>Method:</b> Documentary verification and in field interviews.</p>
2.8	Isolation procedures include isolation during equipment inspection.	<p><b>Intent:</b> To verify that employees are protected from exposure to hazardous energies during inspection.</p> <p><b>Personnel:</b> Registered Manager and/or other relevant employees.</p> <p><b>Method:</b> Documentary verification and interview. Refer MSIR rr. 6.2(2) &amp; 6.21</p>
2.9	Fixed plant isolation points allow for lock out.	<p><b>Intent:</b> To verify that all hazardous energies associated with fixed plant have been considered with regard to isolation. To verify that hazardous energy isolating devices can be secured in the isolating position.</p> <p><b>Personnel:</b> Maintenance Manager and/or other relevant employees.</p> <p><b>Method:</b> Field observation. Refer MSIR r. 6.21</p>

Point	Standard	Guideline
2.10	The isolation procedures require all personnel working on or inspecting fixed plant to apply a personal lock to hazardous energy isolation point/s.	<p><b>Intent:</b></p> <p>To ensure that the requirement to apply personal locks to isolation points has been formally documented, authorised and communicated for all persons who can potentially be exposed to hazardous energies during inspection or work.</p> <p>To verify that persons required to adhere to these procedural requirements know and understand their obligations.</p> <p>To verify that the risk of an employee energising plant during inspection or work has been reduced to ALARP.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and field observation.</p>
2.11	There is a system in place to protect employees when partial or complete energisation is required for adjustment or fault finding.	<p><b>Intent:</b></p> <p>To verify that appropriate controls are provided when partial energisation of plant is required for maintenance, inspection or cleaning.</p> <p>To verify that where hazardous energy exposure associated with partial energisation remains a potential that appropriate controls are implemented to reduce that risk to ALARP.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification, field observation and interview. Refer MSIR rr. 6.18 &amp; 6/21</p>
2.12	Inadvertent access to partially energised equipment undergoing inspection or repair is controlled.	<p><b>Intent:</b></p> <p>To verify that where it is not practicable to carry out cleaning, inspection or maintenance with plant stopped, operational controls are implemented that prevent inadvertent and unauthorised access to potential exposure areas.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview / field observation. Refer MSIR r. 6.21(d)</p>

Point	Standard	Guideline
2.13	An internal audit and review process is in place for isolation processes.	<p><b>Intent:</b></p> <p>To ensure that site periodically review their method of managing hazardous energy isolation. To confirm that incidents involving isolation procedural breaches or inadvertent release of hazardous energy are investigated and the relevant component of the risk register reviewed as also associated isolation procedures.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification.</p>
2.14	Adequate supervision of workers is provided as is necessary to enable them to perform their work in such a manner that they are not exposed to hazardous energies.	<p><b>Intent:</b></p> <p>To verify that fixed plant and maintenance supervisors are actively supervising workers during isolation processes and conducting periodical verification of isolations.</p> <p><b>Personnel:</b></p> <p>Department Managers, supervisors, employees and contractors.</p> <p><b>Method:</b></p> <p>Documentary verification, field observation and interviews.</p> <p>Refer MSIA s.9 &amp; MSIR r. 6.27</p>

### 3 Management of isolation – mobile plant

This section focuses upon how isolation of hazardous energies are managed in relation to mobile plant to ensure that there is a consistent application of control measures.

Point	Standard	Guideline
3.1	Hazardous energy control has been considered in the design of plant.	<p><b>Intent:</b></p> <p>To ensure that the design of new plant and modifications have included facilities for positive isolation.</p> <p>To verify that where practicable isolation and dissipation / bleed points are located in close proximity to hazardous energy sources.</p> <p><b>Personnel:</b></p> <p>Department Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and in-field inspection.</p>
3.2	There is an authorised procedure for the management and isolation of hazardous energies associated with mobile plant.	<p><b>Intent:</b></p> <p>To verify that there are site standard processes for the isolation of hazardous energies.</p> <p>To ensure that the procedure reflects the outcomes of the hazardous energy risk assessment.</p> <p>To verify that the procedure is clear in its intention and there is no ambiguity regarding isolation requirements.</p> <p>To ensure the procedure clearly delineates between personal isolations and permit-to-work isolations based on risk.</p> <p>To ensure that the principles of isolation – lock, tag, try – are met within the procedure.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview Refer MSIR rr. 6.2 &amp; 6.21</p>
3.3	Roles and responsibilities associated with hazardous energy isolation are clearly allocated.	<p><b>Intent:</b></p> <p>To verify that all elements related to isolation implementation and supervision have been formally allocated to relevant personnel.</p> <p>To confirm that those personnel attributed roles and responsibilities understand the extent of their obligations.</p> <p>To confirm that all persons allocated roles associated with the management of isolations are competent to meet the requirements of those roles.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview Refer MSIR rr. 6.2 &amp; 6.21</p>

Point	Standard	Guideline
3.4	Site procedures include contractor involvement and competency requirements for work on isolated plant.	<p><b>Intent:</b></p> <p>To ensure that a formal, documented process is in place to cater for contractor use of personal locks. To confirm that a formal, documented process is in place to assess the competency of contractor personnel to comply with site isolation methods.</p> <p><b>Personnel:</b></p> <p>Registered manager and / or other relevant personnel.</p> <p><b>Method:</b></p> <p>Documentary verification and in field interviews.</p>
3.5	Mobile plant isolation points allow for lock out.	<p><b>Intent:</b></p> <p>To verify that all hazardous energies associated with mobile plant have been considered with regard to isolation. To verify that hazardous energy isolating devices can be secured in the isolating position.</p> <p><b>Personnel:</b></p> <p>Maintenance Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Field observation. Refer MSIR r. 6.21</p>
3.6	The isolation procedures require all personnel working on or inspecting mobile plant to apply a personal lock to hazardous energy isolation point/s.	<p><b>Intent:</b></p> <p>To ensure that the requirement to apply personal locks to isolation points has been formally documented, authorised and communicated for all persons who can potentially be exposed to hazardous energies during inspection or work. To verify that persons required to adhere to these procedural requirements know and understand their obligations. To verify that the risk of an employee energising plant during inspection or work has been reduced to ALARP.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and field observation.</p>

Point	Standard	Guideline
3.7	Immobilisation of mobile plant and grounding of hydraulic attachments is part of the isolation process.	<p><b>Intent:</b></p> <p>To verify that systems of work have been implemented and effectively supervised so as to reduce risks of exposure to specific hazards associated with mobile plant.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees</p> <p><b>Method:</b></p> <p>Documentary verification and field interview / observation. Refer MSIR rr. 6.18 &amp; 6.21</p>
3.8	There is a system in place to protect personnel when partial or complete energisation is required for adjustment or fault finding.	<p><b>Intent:</b></p> <p>To verify that appropriate controls are provided when partial energisation of plant is required for maintenance, inspection or cleaning. To verify that where hazardous energy exposure associated with partial energisation remains a potential that appropriate controls are implemented to reduce that risk to ALARP.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification, field observation and interview. Refer MSIR rr. 6.18 &amp; 6.21</p>
3.9	Inadvertent access to partially energised equipment undergoing inspection or repair is controlled.	<p><b>Intent:</b></p> <p>To verify that where it is not practicable to carry out cleaning, inspection or maintenance with plant stopped, operational controls are implemented that prevent inadvertent and unauthorised access to potential exposure areas.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview / field observation. Refer MSIR r. 6.21(d)</p>

Point	Standard	Guideline
3.10	Adequate supervision of workers is provided as is necessary to enable them to perform their work in such a manner that they are not exposed to hazardous energies.	<p><b>Intent:</b> To verify that mobile plant maintenance supervisors are actively supervising workers during isolation processes and conducting periodical verification of mobile plant isolations in the workshop and the field.</p> <p><b>Personnel:</b> Department Managers, supervisors, employees and contractors.</p> <p><b>Method:</b> Documentary verification, field observation and interviews.</p> <p>Refer MSIA s.9 &amp; MSIR r. 6.27</p>

## 4 Permit to Work Systems

This section examines the permit to work systems to ensure that the permits systems convey the necessary information to workers and verifies that appropriate controls are in place.

Point	Standard	Guideline
4.1	There is a permit to work (PTW) system in place.	<p><b>Intent:</b></p> <p>To verify that a formal, documented control process is applied to group isolations; isolations that potentially impact critical safety systems or processes; non-routine isolations; and isolations that cannot be performed under a personal isolation process. To confirm that the PTW supports isolations being correctly applied and prevents inadvertent energisation. To verify the consistent, appropriate application of the PTW system as per procedural requirements.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and field interview / observation. Refer MSIR r. 5.29 &amp; 6.21 (c)</p>
4.2	The permit to work system identifies the nature and scope of the works being undertaken.	<p><b>Intent:</b></p> <p>To verify the scope of the work documented on the PTW accurately reflects the work being conducted under that permit. To ensure that the scope of work being undertaken is understood by those undertaking that work.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification, field observation and interview. Refer MSIR r. 6.21 (c)</p>
4.3	The permit to work system includes the unique identification for the item(s) of plant to be isolated.	<p><b>Intent:</b></p> <p>To ensure that the correct isolation of required plant / equipment / hazardous energy sources by those authorised to conduct isolations <u>is carried out</u>. To ensure that persons undertaking work are doing so on the isolated item(s) of plant.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification, field observation and interview</p>



Point	Standard	Guideline
4.4	The permit to work system clearly identifies the precautions to be taken and details the required isolations.	<p><b>Intent:</b></p> <p>To verify that hazardous energies with potential for harm are isolated via means appropriate to the level of risk, e.g. double block and bleed for toxic substances; open bleed points for potentially accumulating energies; removal of activation levers for high pressure outlets, etc.</p> <p>To verify that tagging is not included as an isolation option in the PTW system, but that locking out is the minimum requirement.</p> <p>To confirm that what is identified as a precaution within the PTW accurately reflects the method of isolation in-field.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview. Refer MSIA s. 9.1 &amp; MSIR r. 6.21</p>
4.5	The permit to work system provides a system and record of controls that details the methods, checks and authorisations for isolations.	<p><b>Intent:</b></p> <p>To ensure that isolations are independently verified as correct.</p> <p>To verify that those persons conducting isolations are competent and authorised to do so.</p> <p>To verify that controls as described on the permit accurately reflect in-field application of controls.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview</p>
4.6	The permit to work system provides controls for impact on other personnel and processes.	<p><b>Intent:</b></p> <p>To ensure that adequate controls are in place to protect other nearby work groups from hazards associated with the work conducted under the permit to work.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview</p>

Point	Standard	Guideline
4.7	The permit to work system provides for a formal handover to another shift or work group.	<p><b>Intent:</b></p> <p>To ensure that the work status and implemented controls are known to the oncoming work group. To verify that the oncoming work group confirm knowledge / understanding of the work status and control implementation.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview</p>
4.8	The permit to work system provides a process for identifying, assessing and responding to changes.	<p><b>Intent:</b></p> <p>To ensure that flexibility is built into the PTW system to allow for changes to the scope of work; isolation points or when the isolation integrity is compromised.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview</p>
4.9	The permit to work system includes work that requires partially or completely energised systems.	<p><b>Intent:</b></p> <p>To verify that suitable operational controls are in place when work is conducted on partially or completely energised plant.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview Refer MSIR r. 6.27</p>
4.10	The permit to work system links subsidiary permits.	<p><b>Intent:</b></p> <p>To ensure that all permits associated with the work and the controls to be implemented are captured and conveyed to the work group. To confirm that information contained in subsidiary permits is consistent with the PTW. To confirm that an effective process exists to monitor and maintain the subsidiary permits and PTW to ensure currency and appropriateness of information. To verify that the level of administration associated with the PTW and subsidiary permits does not create confusion, and that information presented on the permits is relevant and necessary.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview</p>

Point	Standard	Guideline
4.11	The permit to work and associated documentation is displayed at the work location.	<p><b>Intent:</b></p> <p>To ensure that all personnel in the area of the work location or entering the work location can access information pertinent to their tasks and associated isolations.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview</p>
4.12	There is a system in place for personal isolations.	<p><b>Intent:</b></p> <p>To verify that routine work on isolated plant / equipment that can be controlled and conducted by one person has been appropriately risk assessed.</p> <p>To verify that the ability for one person to control and perform work on isolated plant / equipment has been incorporated into the authorised procedure.</p> <p>To verify that personnel who conduct personal isolations have been assessed as competent to do so and conduct works in alignment with the site's personal isolation processes.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification, field observation and interview Refer MSIA s. 9.1 &amp; MSIR r. 4.13</p>
4.13	There is a system in place for group isolations.	<p><b>Intent:</b></p> <p>To verify that group isolations have been clearly defined in the authorised procedure.</p> <p>To verify that group isolations are performed under a PTW system.</p> <p>To verify that points of personal locking associated with group isolation are easily identifiable.</p> <p>To confirm that the isolation points associated with the group lock-out point are listed and able to be confirmed by persons required to perform work associated with the group isolation.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification, field observation and interview Refer MSIA s. 9.1 &amp; MSIR r. 6.21</p>

Point	Standard	Guideline
4.14	There is a system in place for a second person to independently verify the integrity of the group isolations.	<p><b>Intent:</b></p> <p>To ensure that all group isolations are correctly applied for the protection of the work group.  To confirm that group isolations are installed by a minimum of two people and can at any time be checked by members of the work group.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview</p>

## 5 Locking and tagging

This section examines the procedural and physical application of the isolation systems to verify that the intent of the legislation is being met.

Point	Standard	Guideline
5.1	Plant is designed with suitable isolation lock-out points.	<p><b>Intent:</b></p> <p>To verify that plant may be locked in the off position to enable the disconnection and dissipation of hazardous energies.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview            Field audit – inspect a sample of fixed and mobile plant to verify that they are designed with suitable isolation and lock out points.            Refer MSIR rr. 5.29, 6.21 &amp; 6.27</p>
5.2	Isolation locks are provided specifically for the isolation of hazardous energies.	<p><b>Intent:</b></p> <p>To ensure that isolation locks and personal locks are not interchangeable.            To verify that a security process is applied to the storage, maintenance and use of isolation locks.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview</p>
5.3	Personal locks are uniquely keyed.	<p><b>Intent:</b></p> <p>To ensure that only the person who attaches the lock can remove the lock under normal circumstances.</p> <ul style="list-style-type: none"> <li>Review site lock register</li> </ul> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview</p>
5.4	Removal of personal locks by other persons in extenuating circumstances has been risk assessed and included in site procedures.	<p><b>Intent:</b></p> <p>To ensure that the capability to appropriately remove a personal lock attached by persons verified as unable to remove it themselves has been considered, assessed and factored in to site procedures.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview</p>

Point	Standard	Guideline
5.5	Tags are utilised to provide information in conjunction with isolation and personal locks.	<p><b>Intent:</b></p> <p>To ensure that the tags authorised for use at site are clearly defined and described.  To confirm that tags cannot be applied without a lock for the purposes of isolation.  To confirm that specific identifying information is prescribed for inclusion on tags.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview</p>
5.6	Tags are used in the correct application.	<p><b>Intent:</b></p> <p>To verify that the appropriate tags are used with the correct locks, or for the correct informational purposes.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview  Refer MSIR rr. 6.1, 6.27 (2) &amp; 6.30 (2)</p>
5.7	The information on tags is legible and complete.	<p><b>Intent:</b></p> <p>To ensure the accurate identification of the purpose of the tag and associated hardware and supports the linkage to PTW or other formal process.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview</p>
5.8	Contractor requirements for personal locks comply with the site standard.	<p><b>Intent:</b></p> <p>To ensure that a process is in place for the assessment of acceptability of contractor locks ahead of their in-field application.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview</p>

Point	Standard	Guideline
5.9	Multiple point isolations incorporate the use of a centralised locking station.	<p><b>Intent:</b> To ensure that personnel are protected by the application of their personal locks when using multiple isolations points.</p> <p><b>Personnel:</b> Registered Manager and/or other relevant employees.</p> <p><b>Method:</b> Documentary verification and interview</p>

## 6 Training and competency

This section examines the competency aspect of training to ensure all workers utilising the isolation systems are competent to do so.

Point	Standard	Guideline
6.1	Training needs analysis identifies the need for competency in the conduct of hazardous energy isolation and personal locking.	<p><b>Intent:</b></p> <p>To ensure that relevant personnel are identified for training and refresher training in all aspects of hazardous energy isolation and personal locking pertinent to their role.</p> <ul style="list-style-type: none"> <li>• Ensure personnel are trained in their specific area / role / task</li> </ul> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview.</p>
6.2	An up-to-date training matrix is maintained that specifies who has what competencies and when they were achieved.	<p><b>Intent:</b></p> <p>To ensure that personnel requiring training and assessment associated with conducting isolations and working on isolated equipment have current competency appropriate to their role.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview.</p>
6.3	There is a current listing of authorised isolators.	<p><b>Intent:</b></p> <p>To ensure quick and accessible identification of those persons authorised to conduct isolations to their level of competency.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview.</p>



Point	Standard	Guideline
6.4	The training is competency based.	<p><b>Intent:</b></p> <p>To verify that authorised personnel have received training and assessment in isolation theory and practice.  To verify that the training and assessment covers the principles of isolation – lock, tag, try.  To verify that personnel deemed competent to attach personal locks to allow work on isolated equipment and know how to check the effectiveness of the isolation.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview.  Refer MSIA s. 9.1 &amp; MSIR r. 4.13</p>
6.5	Competency re-assessment occurs periodically.	<p><b>Intent:</b></p> <p>To verify that employee competency remains current.  To confirm that the re-assessment criteria specified in the authorised procedure is adhered to in practice.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview.  Refer MSIR r. 4.13 (c)</p>
6.6	Line supervision has access to up to date isolation competency information.	<p><b>Intent:</b></p> <p>To verify that only competent employees are allocated isolation activities.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview.  Refer MSIR r. 4.13 (b)</p>
6.7	The training is delivered by suitably competent personnel.	<p><b>Intent:</b></p> <p>To ensure that training and assessment is conducted by those persons with the right skills set, qualifications and knowledge of training systems to support a consistent and standardised approach.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview.</p>

Point	Standard	Guideline
6.8	Training and assessment material directly reflects site procedures and practices.	<p><b>Intent:</b> To ensure that discrepancies do not exist between what is stated as required procedurally and what occurs in practice</p> <p><b>Personnel:</b> Registered Manager and/or other relevant employees.</p> <p><b>Method:</b> Documentary verification, field observation and interview.</p>
6.9	Contractors are trained in site procedures.	<p><b>Intent:</b> To verify that contractors are competent to implement site isolation procedures.</p> <p><b>Personnel:</b> Registered Manager and/or other relevant employees.</p> <p><b>Method:</b> Documentary verification and interview. Refer MSIA s. 9 &amp; (b) &amp; MSIR r. 4.13</p>

## 7 Record keeping

This section focusses on record keeping and the ongoing management of records.

Point	Standard	Guideline
7.1	Training records are kept and available.	<p><b>Intent:</b></p> <p>To verify that employees have been trained and are competent to conduct isolation of hazardous energies. A register of competent persons should be available and accessible</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and interview. Refer MSIR r. 4.13 (2)</p>
7.2	Procedures have an allocated ownership.	<p><b>Intent:</b></p> <p>To ensure that procedures are managed and authorised at an appropriate level of management and in accordance with document control procedures.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification.</p>
7.3	Procedures are periodically reviewed.	<p><b>Intent:</b></p> <p>To ensure that procedures are reviewed periodically and are a reflection of current practices.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification and field interview / observation.</p>
7.4	A record is kept of issued permits and related sign on / sign off documents.	<p><b>Intent:</b></p> <p>To ensure that work permits and subsidiary permits are utilised and implemented correctly.</p> <p><b>Personnel:</b></p> <p>Registered Manager and/or other relevant employees.</p> <p><b>Method:</b></p> <p>Documentary verification.</p>

Point	Standard	Guideline
7.5	Internal audit processes include assessment of the quality of completed documentation.	<p><b>Intent:</b> To ensure that continuous improvement activities require review of paperwork for accuracy and relevance.</p> <p><b>Personnel:</b> Registered Manager and/or other relevant employees.</p> <p><b>Method:</b> Documentary verification and interview.</p>