

**Key Control Data Sheet**

Procedure Number: RSK-PRO-KCD-330

Scope of Application: Ok Tedi Mining Limited

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Document Owner: Manager – OHS & Training

**Why is the Control Important** – Injuries to personnel arising from improper isolation of mechanical systems that can move due to stored energy during maintenance or commissioning can be prevented by ensuring before commencing any work on plant or equipment, personnel understand what is required to be isolated and the methods required to achieve this. Once an isolation has been put in place there is a process to confirm or test that the equipment has been secured or depressurised before commencement of work.

**Exemption** – Securing of vehicles and mobile equipment from unplanned movement when parked up (See KCDS 135).

**Operational Requirements**

## Performance Metrics

|  |  |
| --- | --- |
| Work Instructions for isolation of process equipment specify isolation points and methods or standard isolation sheets list required isolations for complex systems requiring multiple isolations. | Isolations are checked and verified by Permit Issuer prior to permit issue. Check that isolation are in place at required points as per procedure or standard isolation sheet and locked out as required.  |
| Work not commenced until moving parts have stopped and stored energies have been fully released. | Isolations are confirmed or tested before commencement of work e.g. by opening a drain valve |
| Personnel carrying out isolations are trained and assessed competent in isolation procedures and methods. |  |

## Utilisation

All isolations of stored energy and moving equipment or parts that could fall or cause injury through movement.

Stored energy is an agent such as electrical or mechanical energy, gravity (including raised loads and compressed springs) and pressurised systems or containment devices (including fluids, hydraulic systems, compressed air, steam, gas and so on) with the potential to cause harm.

## Safety Critical Defeat Requirements

Where it is necessary to work on live equipment for the purposes of commissioning, testing, and adjustments and a Permit to Work covering the live testing has been prepared and endorsed with the necessary specific controls in place.

## Testing & Verification

Permit Issuer checks that all required isolations are in place, locked and tagged. Tags are applied at each point of isolation to indicate:

* the purpose of the isolation;
* the date of isolation; and
* the person who performed the isolation

## Maintenance

Work Instructions or standard isolation sheets for isolation/securing of equipment are reviewed annually.

## Training & Competency

Competency based training must be conducted for operations and maintenance personnel including isolation and securing of equipment.

Maintenance operators are assessed as competent by the site's Responsible Engineer.

Refresher training is conducted annually.

Permit Issuers are assessed as competent and authorised.

**Task Requirements**

The following are the key day to day requirements operators/maintainers and supervisors must follow to ensure the control is being used correctly.

## Task Requirements

|  |  |  |
| --- | --- | --- |
| No. | Supervisor | Operator/Maintainer |
| 1 | Verify that isolations are carried out in accordance with equipment isolation procedure or standard isolation sheet for complex systems requiring multiple isolations.  | Isolate the process equipment following the methods and requirements of the equipment isolation procedure, Permit to Work, or standard isolation sheet for complex systems requiring multiple isolations.  |
| 2 | Verify that personnel required to carry out process isolations are assessed competent in conduct of those operations and authorised to do so.  | Check and verify isolations with Permit Issuer prior to permit issue prior to commencement of work.  |
| 3 | Provide isolation equipment including restraints or lockout devices to enable process isolations to be secured.  | Confirm or test isolations before commencement of work e.g. by opening a drain valve, checking equipment cannot move. |
| 4 |  | Place personnel padlock and tag at isolation points or personal padlock on group isolation system, before commencing work on isolated equipment where required.  |
| 5 |  | Place tag at isolation/ disconnection points that cannot be locked out e.g. drive disconnected or wedged.  |
| 6 |  | Monitor the integrity of isolations throughout the work. If there are signs that isolation may be failing e.g. equipment moves, then the work must stop, and further action taken to rectify the failure before continuing. |

## Skills Requirements

No additional requirements.

## Permits

Additional permits as hot work, confined space, etc. may be required for the task.

## Task Specific PPE Requirements

No additional requirements.

## Special Task Related Tooling

Personal isolation locks.

Danger tags.

Blocks, wedges or lashings to secure equipment that can move.

**Design Requirements**

## Design Standard

Equipment designed so it can be physically isolated from all stored energy sources.

## Safety Parameters

The following methods can be used to achieve isolation from stored energy:

* Energies stored in pneumatic and hydraulic drives released by isolating the power source as well as depressurising the system by opening a drain or vent.
* Energy stored in pressurised systems is reduced to atmospheric levels by opening a drain or vent.
* Where equipment drives cannot be isolated the drives must be disconnected by removing drive belts, couplings or cables.
* Moving parts that could fall or cause injury through free movement are physically restrained e.g. by blocks, wedges or lashings.

## Design Life

Not applicable.

## Safe Separation

Not applicable.

## Special Requirements

For Isolations covered under separate Permit to Work certificates:

* lock-out devices must be attached by each permit issuer and recipient, or a group lockout system may be used;
* the Permit to Work certificates and Isolation tags must cross-reference all such certificates, and
* Isolations must remain correctly tagged and locked out and any ‘open ends’ on process equipment must be blanked until all other associated permit certificates have been closed and the equipment is ready for return to service.

The status of all relevant permits must be checked, and suitable arrangements for detection and elimination of leaks must be in place before Isolations are removed.