



HARZARDOUS ENERGY CONTROL POLICY

January 2008

Unicus

Hazardous Energy Control Policy (Lockout Policy)

1.0 Purpose

This policy specifies the requirements of the Hazardous Energy Control Programme. The programme has been established to prevent hazards resulting from the unexpected or unwanted operation of equipment during activities such as maintenance, servicing, adjusting, etc.

2.0 Scope

All employees and Contractors must utilise energy control procedures prior to engaging in any work such as repair, set-up, maintenance, inspection, lubrication, installation, or adjustment on process, systems, or equipment.

3.0 Definitions

Zero Energy State (ZES) - Is when **all energy sources** (mechanical, electrical, chemical, nuclear, etc...) for a particular process, system, or piece of equipment have been isolated and the chance of unwanted or unexpected activation has been eliminated

Intermediate Energy State (IES) - Certain specified tasks have to be performed with some level of energy present. The term **Intermediate Energy State (IES)** provides a way of safely performing the task by utilising a method to keep the employee's body out of the area of potential contact with the equipment. It is acceptable to use IES when **lubricating, cleaning, un-jaming and making repetitive minor adjustments that do not expose employees to injury or harm.**

Energy Isolation Device (EID) - The placement of a key operated lock, or other mechanical means in a manner that prevents the activation of a Safety Disconnect or equipment and potential subsequent release of hazardous energies

(Physically preventing the unwanted activation of a Safety Disconnect)

Safety Disconnect - A physical device that prevents transmission or release of energy - ie valve, switch, chock.

Signs -Tag / Signs are used for identifying of the lockout and the person.

Hazardous Energy Control Policy (cont...)

Energy Source - Energy sources are as follows:

- a. **Electrical** - Alternating and direct current sources, static electricity or stored electrical energy in devices such as capacitors.
- b. **Chemical** - Energy released through direct contact or by combining chemical substances.
- c. **Thermal** - Heat generated from electrical, combustion, chemical, mechanical (friction) or nuclear sources.
- d. **Pneumatic** - Gaseous systems operating at positive (compressed) or negative vacuum) pressures.
- e. **Radiation** - Ionising sources including alpha, beta, neutron, gamma and x-ray. Non-ionising sources including: ultraviolet, infrared, microwave, and visible light (including lasers).
- f. **Hydraulic** - Fluids pressurised to perform work.
- g. **Mechanical Potential** - Movement of a body or an object by gravity, spring or striking force.

4.0 General Guidelines

Zero Energy State (ZES) procedures will be utilised unless performing a specified task at an intermediate energy level. In this case, task-specific **Intermediate Energy State (IES)** procedures will be followed. These procedures are contained in the Health and Safety Manual, and the Standard Operating Procedures found in the Divisional Health and Safety documentation and the Central Filing System.

Always check the job before starting work; securing or isolating more than one switch, valve, lever, or energy source may be necessary. If in doubt, refer to the energy control procedure or check with your supervisor to be sure the equipment is safe.

Always personally lock and place a sign on the energy isolating device (disconnect, switch, valve, etc); Always work under a lock that can be identified as yours, and you hold the key.

Hazardous Energy Control Policy (cont...)

All residual and stored energy must be drained or dissipated. Zero energy must be verified prior to starting work by attempting to start equipment, checking voltage, measuring pressure, etc. The means of dissipation must be left open until the lock is removed.

When work is complete, locks and danger signs must be removed. Failure to do so results in job delay and confusion.

Employees who leave the site without removing locks and signs will be called back at their own expense to remove them.

If a piece of equipment or process is ready to be started, an employee's lock and sign have not been removed, and the employee cannot be located, the following steps must be taken:

- a. Attempt to contact the person to have them remove the lock
- b. Check-the area to ensure it is clear and safe
- c. Obtain- permission-to remove the lock and signage from both the Divisional Manager and the Safety Manager. The General Manager may also approve the removal in the event that either the Divisional Manager or the Safety Manager is unavailable.
- d. Follow up the removal of the lock with an Incident Report to the Safety Manager & Quality Co-ordinator.
- e. Notify the employee on return to work and discuss the seriousness of their actions.

The '**Locked and Danger**' sign is **NOT** to be used for any reasons other than those outlined in this procedure.

Locks are to be identified with employee's name / number, or identified by the Process. Identification is by engraved locks, signage placed on the machine, and recording on a white board.

Signs "**Danger do not operate this equipment**", are available with locks. They will not be used to prevent operation of energy isolating devices in place of locking.

Hazardous Energy Control Policy (cont...)

For jobs extending into other shifts, oncoming crewmembers must verify the energy isolating procedures are in place and install their locks prior to the removal of locks by the outgoing shift. Process **'clean down'** locks and **'break down'** locks will remain in place at shift change.

Before restoring energy to the equipment, a visual inspection shall be conducted and personnel in the area be alerted. Any Service work greater than a day-to-day break down requires a **Machine Hazard Assessment** to be conducted before signing over the equipment on the Production Log.

5.0 Written Procedures

Zero Energy State (ZES) and **Intermediate Energy State (IES)** procedures are available, as appropriate, for each process, or piece of equipment. They must be used and are available for employee review by referring to the Health and Safety Manual, Divisional Standard Operating Procedures, or access through the Central Filing System.

The procedures will identify all energy sources, methods for controlling energy to zero and intermediate levels, and methods to verify isolation and control.

The procedure will be reviewed and updated annually.

6.0 Methods of Energy Control

Electrical energy will be de-energised by placing the safety disconnect switch in the 'off' or 'safe' position. All electrical disconnects will be identified and will correspond to the written procedures. The switch will be locked and isolation verified by measurement and attempting to start the equipment.

Never attempt to isolate electrical equipment by placing a danger sign on the push button. Only energy isolating devices which physically prevent the activation of a disconnect are acceptable means of isolation.

Flow or pressure in thermal, pneumatic, and hydraulic systems will be isolated by closing and locking valves; removing the pipe; or installing a certified blank barrier device. It may also be secured by disconnecting electrical- energy serving a motor or pump, such as an air compressor. Energy isolation and dissipation of stored or residual pressure must be verified before starting work.

Hazardous Energy Control Policy (cont...)

Sources of **mechanical potential energy** will be isolated by supporting or removing a suspended movable parts and securing moving parts by using a bar, pin, chain, chock or other method. Energy stored in springs must be dissipated or the springs must be removed. Whenever possible, a lock shall be used to secure the energy isolating device.

All employees working under the protection of a chock, pin, chain, etc., shall identify the energy-isolating device with an appropriate sign.

Sources of **ionising and non-ionising radiation** will be isolated by shielding or closing the source and secured by locking in the closed or shielded position.

7.0 Training

Training on the requirements of the general procedures shall occur in the new employee induction. Training on specific lockout requirements will be part of the division's induction. **This training will occur prior to an employee beginning work.**

Employees transferred to another department will receive training on specific lockout procedures prior to beginning work.

All employees will receive annual refresher training on the general procedures of Control of Hazardous Energies.

Retraining will be provided when new equipment, or equipment modifications change procedures, or a new hazard is presented.

Retraining will occur when inspection reveals deficiencies in use of the procedure.

All training documentation (dates, signatures, content, etc.) will be maintained on file for the current year plus two previous years.

Upon the successful completion of training and assessment of competency, both trainer and employee will sign the training record. The Divisional Supervisor will perform reassessment annually.

Hazardous Energy Control Policy (cont...)

8.0 Policy Review

The use of these procedures will be evaluated annually to assure they are being properly implemented, the employees understand their responsibilities, and the procedure is effective. Each division will name the person(s) responsible for conducting the review.

The auditor will review with each employee the responsibilities of those involved with this procedure.

Any observed deviations or deficiencies would be corrected. The Divisional Manager will report the deviations, deficiencies, and corrections to the Safety Manager and Quality Co-ordinator.

Each division will keep records of the reviews for the current year plus two previous years. The records will certify the date of the review, the employee who conducted it, the employees included, the machinery or plant inspected, and findings and corrective actions recommended and taken.

9.0 Enforcement

All employees, including salaried personnel are subject to disciplinary action for violations of established energy control procedures.

Any situation where it is felt the policy has been violated will be immediately reported to and investigated by the Safety Manager. The findings of those investigations will be reported to the General Manager.

The severity of any infraction will be considered when investigating violations. Disciplinary action can lead up to and include immediate discharge.

Contractors, contractor employees, subcontractors, and service providers are covered by this policy. Violations may be construed as a breach of contract and those involved in the violation can be removed from the site based on the severity of violation.