PLANT ISOLATION, SAFETY TAG AND LOCKOUT PROCEDURES

PURPOSE

CQUniversity has an obligation under the Queensland Workplace Health and Safety Act to provide a safe and healthy environment for all CQUniversity staff, students, sub-contractors (and their staff) as well as visitors to the University campuses and/or workplaces. While most University business is conducted on campuses, some activities are conducted off site. To enable the University to fulfil its obligation, it is required to adopt a risk management approach to eliminate or minimise all hazards in the workplace.

These procedures outline a minimum standard for personal safety and plant protection during routine installation, maintenance and repair of electrical, mechanical and fluid or gas powered plant/equipment at CQUniversity. They provide information on a Plant Isolation safety tag and lockout system that will avoid confusion while maintaining safety, particularly where different trades or multi-skilled workers collaborate on routine installation, maintenance and repair work.

PROCEDURES

CQUniversity has adopted an isolation system comprising of authorised tags, locks and competency based training to inform staff of the isolation process, ensuring the safety of workers who install, maintain or repair plant at CQUniversity. These are minimum procedures and are not intended to replace existing procedures designed for complex (non-routine) work that may exist in the various workplaces.

Safety tags and lockout procedures are required where plant (equipment, machinery and fluid or gas power sources):

- is in a dangerous condition;
- is being worked on;
- has not been completely installed;
- is out of service for repair or alteration.

1 Risk Management

The five basic steps in the workplace health and safety risk management process set out in s27A of the Workplace Health and Safety Act 1995 must be followed to manage exposure to risks.

1.1 Preparation

Step 1 Identify all hazards.

Step 2 Assess the risks these hazards create.

Step 3 Decide on measures to control the risk.

Step 4 Implement appropriate control measures.

Step 5 Monitor the control measures and review the process.

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2 Personal Isolation

Isolation of Plant (equipment, machinery and fluid or gas power sources) in CQUniversity workplaces is conducted by personal isolation and **NOT** group isolation systems.

Each person working on plant shall be protected by their Personal Danger tag and lock. The Personal Danger tag and lock informs other workers and/or emergency services, that a worker is still working on this piece of plant and that there is a potential hazard associated with the plant. While Personal Danger tags and locks are two separate items, for the purpose of isolating plant on a CQUniversity workplace they will be used together. The completed Personal Danger tag formally identifies the attached lock and avoids potential confusion.

2.1 Before you begin work:

- Plan and discuss the job with your area manager/supervisor/foreman and co-workers as appropriate and identify the isolation points.
- Learn any 'local' procedures specific to the work site.
- Complete an 'Out-of-Service' tag and attach it to the isolation point of the plant to be installed, repaired or maintained.

2.2 Follow isolation procedures:

- Identify sources of energy coming into the plant or within the plant.
- Remember that energy fed into the plant may have more than one potential source and supply line and that there may be more than one potential source of energy (eg. contents or parts of the plant may be able to move).
- Isolate, dissipate and restrain all sources of energy and engage locking devices where available.
- Complete and attach your Personal Danger tag(s) and lock(s) at each isolation point.
- Recheck your controls. Ensure that all sources of energy have been isolated, dissipated and restrained and that all energy sources have been tagged and locked.

2.3 Checking for 'Dead' or positive isolation of Plant:

- Checking for 'Dead' or positive isolation of an item of Plant prior to commencement of work can be achieved by the use of meters or test equipment if necessary. Finally to determine that the equipment is 'Dead' ensure any guards are in place and engage the start mechanism of the plant.
- If the plant engages or moves, positive isolation has not been achieved and the plant controls are faulty, working on this item of plant could be very dangerous. Turn off the item of plant at the main isolator, remove your Personal Danger tags and locks replace them with Out of Service tags and inform your area manager/supervisor of the incident. You must submit a CQUniversity Incident Report.
- If you have achieved isolation you may now work on the item of Plant.

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3 Safety Tags

'Out of Service Tag'
(yellow & black)

Back Front

'Personal Danger Tag'
(red, white & black)

Front Back

4 Out of Service Tags

4.1 The Out of Service tag is black lettering on a yellow background with a caution symbol and complies with AS1319. Out of Service tags identify plant removed from service because a fault makes the plant unsafe to operate.

4.2 Anyone can place an Out of Service tag on equipment if they consider it to be unsafe or unserviceable and are required to immediately advise the appropriate maintenance service provider.

4.3 The Out of Service tag must be fully completed, signed/dated and indicate why the plant has been taken from service. It is attached in a suitable location to prevent the operation of faulty or unsafe plant. For example, a faulty electrical appliance would have a tag placed within 300mm of its plugged end.

4.4 Plant may need to be disconnected from energy sources, keys or other starting devices removed and locked away and/or locking devices installed to ensure that the plant cannot be operated.

4.5 Only the person originally attaching the Out of Service tag or a 'Competent Person' is permitted to remove an Out of Service tag e.g. an electrician would be a 'Competent Person'.

Plant is taken 'Out of Service' because it is unsafe to operate or there is a risk of causing damage to materials, plant or personnel if operated. Workers or others must not attempt to operate out-of-service plant until the fault(s) has been rectified and any Out of Service tag(s) or Personal Danger tag(s) and lock(s) removed.

An Out of Service tag indicates an item of Plant is unsafe to operate. It does not indicate that the Plant is safe to work on for maintenance or repair.

5 Personal Danger Tags

5.1 The Personal Danger tag is coloured red and black on a white background and complies with AS1319. It indicates that the plant to which the tag is attached is being worked on by the individual whose name appears on the tag and the plant cannot be operated. The tag must be completely filled in, signed/dated and indicate why the plant must not be operated.

5.2 Personal Danger tags and locks must be attached to all switches/valves or other means of operating the plant whenever the operation of the equipment may cause injury to workers or others. The Personal Danger tag and lock informs others that the plant is being installed or repaired and must not be operated.

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5.3 Personal Danger tags **must** be placed in a location that will achieve positive isolation. **Emergency stop buttons and similar controls must not be used for isolation.**

5.4 The person whose name appears on the Personal Danger tag is the only person permitted to conduct work under its protection. **You are not permitted to work under someone else's Personal Danger tag or lock.**

5.5 Personal Danger tags and locks must be removed by the worker at completion of a task or if the worker is required to leave the work site for any reason. If the task is not complete the worker is required to place a completed Out of Service tag in its place.

5.6 Both tags are single use only and when removed must be ripped in half and discarded appropriately.

5.7 All information placed on the various tags must be printed in ink, **not pencil.**

6 Safety Locks

6.1 Safety locks provide an additional level of protection when installing, repairing or maintaining plant.

6.2 Safety locks conjoined to a Personal Danger tag will be installed to secure the means of isolation. Locks will be affixed through the appropriate isolation point with the keys removed to prevent accidental removal. All keys to the lock will stay with the person responsible for applying the isolation.

6.3 In some instances the Plant isolation mechanism may not be physically large enough to restrain the large numbers of required isolation devices. In cases such as this a multiple lock device (lockout scissors) can be used to restrain the numerous devices for workers until the completion of the task**.**

Typical isolation of an electrical distribution board

7 Removing tags/locks

7.1 Check that the plant is safe to be returned to service and read the remarks on the Out of Service tag if affixed for additional information.

7.2 Tell everyone concerned that the plant will return to service and confirm that all guards have been reinstated.

7.3 Remove only the tag/lock with your own signature and destroy the tag.

7.4 Never remove or destroy another person's Personal Danger tag or locking device.

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7.5 Never operate plant while another person's Personal Danger tag or locking device is in place.

Any person finding a loose completed isolation tag shall assume that it has been unintentionally detached from the isolation device and will immediately notify the work area manager/supervisor. The area manager/supervisor will then ascertain which item of plant the tag belongs to and make the situation safe.

7.6 At times, a piece of plant is required to be returned to operation and the isolation point contains one or more Personal Danger tags of people absent from the workplace. This may occur because workers take a break without removing their tags or they have left the workplace to retrieve tools or other materials.

- The person requiring the plant will advise their area manager/supervisor of the situation.
- The area manager/supervisor will contact the individuals indicated on the tags and have them return to the site to remove the Personal Danger tags and locks.
- If this is not possible, or if the person cannot be contacted, the area manager/supervisor will personally nominate a 'Competent Person' to investigate the situation to ensure that no person or plant will be endangered or damaged by the removal of the tag/lock by other than the signatory.
- The area manager/supervisor along with the nominated 'Competent Person' would co-sign the Personal Danger tags, remove the locks and tags and submit them, along with a CQUniversity Incident Report detailing the event, to the area manager/supervisor within 24 hours of the incident occurring.

8 Supplies of Safety Tags

Safety tags will be available from the Health, Safety, Environment and Training Unit. A 'Plant Isolation – Danger and Caution Tag Order Form' can be downloaded the website.

9 Competency Section

9.1 For various reasons it will be necessary to achieve a level of competency within various departments and schools through the University. An assessment paper has been provided as part of this document to assist departments and schools to check for competency of participants and record these outcomes.

9.2 The assessment is in two parts. Firstly a theory section comprising of six questions will be undertaken and a practical section that will be conducted by the area manager/supervisor or mentor. The participant will be required to obtain 100% accuracy to achieve competency.

9.3 The CQUniversity person responsible for conducting this assessment is required to firstly determine if the participant has read these procedures. If for some reason the participant cannot read or has difficulty understanding the content of these procedures, the area manager/supervisor or mentor should read and explain the procedures to the participant.

9.4 The area manager/supervisor or mentor is to conduct this assessment on an individual basis with the participant. Records of training and participant's assessment are to be kept for a period of seven years or for the period of the participant's employment with CQUniversity.

9.5 Training materials required for this section will include:

- a copy of the CQUniversity Plant Isolation, Safety Tag and Lockout Procedures;
- CQUniversity 'Out of Service' tag and 'Personal Danger' tag;
- padlock and keys, a length of string, pen and other isolation covers/devices as required;

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- a piece of plant that would normally be found in the participant's workplace and is suitable for this assessment.

9.6 After successful completion of this assessment session the area manager/supervisor or mentor can present the participant with an Out of Service Tag and a Personal Danger tag and lock for use within the area.

9.7 Area managers/supervisors are required to contact the Health, Safety, Environment and Training Unit for the assessment paper.

DEFINITIONS

Competent Person means a person who has acquired, through training, qualifications, experience or a combination of these, the knowledge and skill enabling the person to inspect, test and repair plant/equipment. *(Electrical Safety Regulation 2002 - Schedule 9)*

Electrical equipment is any apparatus, appliance, cable, conductor, fitting, insulator, material, meter or wire:

a used for controlling, generating, supplying, transforming or transmitting electricity at a voltage greater than extra low voltage; or

b operated by electricity at a voltage greater than extra low voltage; or

c that is, or that forms part of, a cathodic protection system.

However, "electrical equipment" does not include any apparatus, appliance, cable, conductor, fitting, insulator, material, meter or wire forming part of a vehicle if:

a it forms part of a unit of the vehicle that provides propulsion for the vehicle; or

b its source of electricity is a unit of the vehicle that provides propulsion for the vehicle.
(Electrical *Safety Act 2002 s14)*

Electrically Safe means:

a for a person or property, that the person or property is free from electrical risk; and

b for electrical equipment or an electrical installation, that all persons and property are free from electrical risk from the equipment or installation; and

c for the way electrical equipment, an electrical installation or the works of an electricity entity are operated or used, that all persons and property are free from electrical risk from the operation or use of the equipment, installation or works; and

d for the way electrical work is performed, that all persons are free from electrical risk from the performance of the work; and

e for the way a business or undertaking is conducted, that all persons are free from electrical risk from the conduct of the business or undertaking; and

f for the way electrical equipment or an electrical installation is installed or repaired, that all persons are free from electrical risk from the installing or repairing of the equipment or installation.
(*Electrical Safety Act 2002 s10 (2))*

Electrical Safety for a person or property, means the person or property is electrically safe. (*Electrical Safety Act 2002 s10)*

Electrical Work is the manufacturing, constructing, installing, testing, maintaining, repairing, altering, removing, or replacing of electrical equipment.

Examples of electrical work:

- Installing low voltage electrical wiring in a building.
- Installing electrical equipment into an installation coupler or interconnector.
- Replacing a low voltage electrical component of a washing machine.
  (*Electrical Safety Act 2002s18)*

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Isolated means disconnected from all possible sources of supply and rendered incapable of being made live without premeditated and deliberate operation. Under section 20(2) of the Regulation, a suitable warning safety sign must be attached.

Examples of how isolation can be achieved is by: opening isolators, racking out circuit breakers, removing fuses or links, inhibiting the operation of a mechanism by locking, or a combination of these measures.

Isolation involves the use of suitable warning or safety signs and involves locks, rendering mechanisms inoperative or a combination of these. *(Electrical Safety Code of Practice 2010 - Electrical Work)*

Plant includes:

a machinery, equipment, appliance, pressure vessel, implement and tool;
b personal protective equipment; and
c a component of plant and a fitting, connection, accessory or adjunct to plant.

(Workplace Health and Safety Act 1995 - Schedule 3)

RECORDS

All records relevant to these procedures are to be maintained in a recognised University recordkeeping system in accordance with the Queensland State Archives Retention and Disposal Schedule.

DOCUMENTATION

Queensland Parliamentary Counsel, *Workplace Health and Safety Act 1995*, Reprint No 9D [on line] http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/W/WorkplHSaA95.pdf [Accessed October 2010]

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Related Documents	

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