



SPECIAL INSTRUCTIONS:

- 1. Isolation procedures for individual items of plant and machinery must be developed by persons who are conversant with the operation of the item, the means of supplying power or energy to the item, and the maintenance or other work to be carried out on the plant or machinery.
- 2. Only those persons who have been instructed in isolation procedures and who are authorised to do so are to place and remove isolation devices.

Sequence	Identified hazards	Key processes to be followed	Precautions / PPE required
1. General precautions	Inadequate procedures	Develop and test isolation procedures where possible before work is required to be	Restrict access to authorised persons only.
		carried out on plant or machinery.	Assess competency of workers in isolation
	Hazardous exposure	Instruct and train all relevant personnel in isolation and lock out procedures.	procedures by tests.
	Security of work area	Restrict access to plant or machinery whilst being worked on by barricading.	Post "NO ENTRY" signs to area.
2. Basic isolation		Inspect plant or machine, and identify all sources of energy to it.	Ensure that all sources are identified before
procedure	Moving parts	Block or brace moving parts of plant or machinery that will fall under their own weight,	isolating.
		or may move when stored energy sources are de-energised.	Ensure parts cannot move on own.
	Hazardous energy	Shut plant or machine down at control switch, and isolate and lock out all energy	Follow shut down procedure (if applicable)
		sources (including electricity, air, gas, steam, etc.).	before isolating.
		De-energise all stored energy sources (including air lines, hydraulic lines, capacitors,	Bleed pressure lines and vessels, and open
		etc.) before disabling interlocks and removing guards.	vents and drains.
		Lock out and tag controls, energy sources (switches, valves, etc.) and other potential	Ensure that all controls have been locked out
		hazards before commencing work.	and tagged.
3. Isolation of energy	Moving parts	1. Inspect plant or machine to ensure that all parts have stopped moving.	Authorised competent person with full
sources and materials		2. Install ground and anti-static wires to eliminate static build up.	knowledge and understanding of the plant or
		3. Relieve trapped pressure in pipelines and hydraulic systems.	machinery should perform isolation checks.
		4. Release spring tension, or block movement of spring-loaded parts.	Isolation checklist should be developed for
		5. Block or brace parts which could fall under gravity.	complex plant or shut-downs.
		6. Block parts in hydraulic or pneumatic systems which could move when pressure is	Recycle or dispose of materials in correct
		released.	manner.
		7. Bleed pressure lines and leave vents open.	Repair or replace faulty parts.
	Hazardous exposure	8. Drain process pipelines and close valves to prevent flow of materials. Use blanking	Wear PPE as recommended by MSDS – eye,
		plate to block line if no valve fitted or valve fails to shut completely.	face, hand, body, foot and respiratory
		9. Purge reactor tanks and process lines to remove hazardous material.	protection.
		10. Provide protective clothing if extreme heat or cold cannot be dissipated.	
		11. Monitor parts of systems where stored energy may re-accumulate.	
4. Isolation checks	Electric shock	Authorised competent persons only are to carry out electrical testing.	Appropriate PPE must be worn.
	Hazardous exposure	Use soapy water to test for air or gas leaks.	Ensure that tests selected are appropriate for
		Do not touch zones where hydraulic or other fluid under pressure may exist.	the substance being detected.
		Check condition of electrical isolators, and replace faulty units.	

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ISOLATION OF PLANT AND MACHINERY



Sequence	Identified hazards	Key processes to be followed	Precautions / PPE required
5. Return to service	Hazardous exposure	Ensure that all lockout devices and personal danger tags have been removed. If a	Isolation should not allow return to service
		lock or tag has not been removed, the person who placed the lock or tag is to be	until all locks and tags are removed from
		summoned to remove them personally. All persons who have been issued with lock	isolators.
		out devices must be able to account for each of the devices issued to them. Ensure	Establish control system for locks.
		that all non-essential persons are clear of the area before start up.	Follow documented start up procedures.
6. Lock out	Exposure to hazards	All persons should be issued with individual locks with individual keys.	Provide means of safe-keeping.
procedures		Where possible, all locks used by one person should be keyed identically.	Provide identification for key.
		Keys must remain in the possession of the person to whom they were issued.	Keys must not be given to another person
		Duplicate or master keys must not be readily available in work area.	for any reason.
		Where more than one person is working on plant, each person must attach their	All persons are to attach locks and tags
		own locks and tags to the isolator(s).	individually.
		If more than one energy source is to be isolated, each person must place their lock	Lock box may be used instead of multiple
		and tag on each of all isolators.	locks on isolators.
		A lockout on an isolator must be identified with the identifier of the person who	Only the person who placed the lock or
		placed it, together with the person's personal danger tag.	tag is to remove them.
7. Use of tags	Personal danger tags (red	Use of these tags is restricted to persons who are or will be working on plant, and	Personal danger tags must carry details of
	on white)	provide details of the person who placed the tag.	the person who placed it clearly and
		A completed personal danger tag must be attached with the lock.	indelibly.
		A personal danger tag must not be left on an item whilst not being worked on, but	Only the person who attached a personal
		be removed and replaced with an out of service tag.	danger tag may remove it.
	Out of service tags	Out of service tags should only be used on plant or equipment awaiting service or	Person carrying out work is to replace the
	(black on yellow)	repair, and should be replaced with a personal danger tag if a person is working on	out of service tag with their personal
		the plant or machinery.	danger tag.
		Out of service tags must be removed before the item is returned to service.	Do not use item or return to tool store with
		An item with an out of service tag must not be used until faults are rectified or the	out of service tag attached.
		item is declared safe to use by a competent person.	

PRECAUTIONS:

The following precautions are to be observed in areas where these procedures are carried out.



Additional PPE which may be required for use where chemicals may be present. (Refer to SDS for specific protection to be used when exposure to hazardous substances is possible).



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