HSE_HIMP_Rev1.1

# Huracan Isolation Management Plan

Huracan Pty Ltd

Document Control: Public

Huracan Pty Ltd
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## Document Control

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## Revision History

| Rev | Author | Reviewer | Date | Revision Comments |
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| 1.0 | K. Hollingworth | J. Hollingworth | 14-Jun-2020 | First Edition of Document |
| 1.0 | K. Hollingworth | J. Hollingworth | 22-Jun-2022 | Document Review |
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# 1 DOCUMENT CONTROL

## 1.1 REVIEW AND UPDATE PROCEDURES

This document is a 'live' document that shall be reviewed and updated as per the Huracan Document Control and Revision Standard.

It is also to be reviewed immediately after any of the following occur;

- Major operational incident (i.e. increased apparent risk)
- Significant operational, procedural, work practice or technology change
- New or amended safety codes, safety requirements or standards are issued.
- When required by relevant State and Federal Government legislation.

Huracan Management is responsible for the review and revision of this document. The updated document is to carry a new revision date, and are circulated once the revision has been approved, by the following levels of Management:

- Operations Manager – Huracan.
- HSE Manager – Huracan.

## 1.2 DISTRIBUTION

Requested changes to the Distribution List are to be addressed to Huracan Management.

## 1.3 DOCUMENT UPDATES

Only registered copies of the document shall be updated. This document becomes uncontrolled when printed.

## 1.4 DOCUMENT PUBLICATION AND DISPLAY

This document shall be displayed at all times and shall be open for inspection by anyone to whom the plan or part of the plan may affect or apply to.

## 1.5 DISPLAY LOCATIONS

This document shall be available for display at the following locations;

- Huracan Office
- Huracan Internal Website

# 2 OVERVIEW

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## 2.1 HURACAN GENERAL CODE OF BEHAVIOUR

Huracan Management requires full compliance with the Standard. Infringement of the standards contained in this document shall be regarded as a serious breach of the Huracan code of behaviour and shall result in disciplinary action, which may include counselling or dismissal. Failing to follow safety instructions, deliberately interfering with safety equipment and systems, deliberate damage to equipment, stealing, vandalism, fighting, practical jokes and horseplay shall not be tolerated and are considered to be serious breached of the Huracan Code of Behaviour.

## 2.2 TERMINOLOGY

| Term | Definition |
|---|---|
| Authorised Person | A person with approval to issue permits and verify isolate plant and equipment with the aid of a certified or competent person for which is being maintained. Electrical isolations may only be carried out by a licenced electrician. |
| Competent Person | A person who is suitably qualified (by experience, training or both) to carry out the work or function described in the relevant regulation (as defined by the WHS Regulations 2011) |
| Electrical Plant | Plant which consumes, converts or generates electricity |
| Energy Source | Energy sources extend to a number of types including, but not limited to:<br>• Electrical<br>• Mechanical<br>• Hydraulic<br>• Pneumatic<br>• Thermal<br>• Gravitational<br>• Radiation<br>• Potential energy (stored or kinetic) |
| Isolation | The condition where an isolator makes an energy source incapable of being set in motion or releasing its energy |
| Isolation Procedure | A set of pre-determined steps that should be followed to keep the plant and its components from being set in motion or to prevent the release of stored energy, to protect the safety of persons during commissioning, plant inspection, repair, maintenance or cleaning activities. Includes a device that physically prevents the transmission or release of energy. |
| Lockout | A system or process designed to prevent all situations where unexpected energisation, start-up or release of stored energy of plant has the potential to endanger the health and safety of worker/s. |
| Lock-out – Tag-out | (LOTO) - A system or a process designed to prevent all situations where the unexpected energisation, start-up or release of stored energy of plant has the potential to endanger the health and safety or workers. In these situations, plant shall be:<br>• Appropriately isolated and any stored energy released<br>• Have a personal lock and danger tag applied to the isolating control.<br>• Out of service / Personal Danger tags are fitted to defective plant to indicate that no attempt is to be made to operate the plant until repairs are completed. |
| Out of Service Tag | Yellow and Black Tag indicating the plant or equipment poses risk if operating in current state and shall not, by any means, be operated until the defect is rectified |

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| | |
|---|---|
| Personal Danger Tag | Red and White Tag used as an **additional** lock out method but is not considered effective as a stand-alone lock |
| Personal Lock | Is used for personal protection and shall be accompanied by a Danger Tag to identify who has applied the locks |
| Plant | Includes any machinery, equipment, appliance, container, implement and tool and any component or fitting and thing connected to any of those things. Examples of plant range from lifts, cranes, computers, machinery, conveyors and forklifts to vehicles, power tools and amusement devices. |
| Permit To Work | A permit to work or work permit is a formal, written authority to operate a planned work procedure. It is designed to provide protection for employees who are working in hazardous situations. The permit to work process involves procedures to request, review, authorise, document a task. |

# 3 STATEMENT OF STANDARD

This document is intended to serve as the minimum Huracan requirements for management and mitigation of hazards through Isolation of Energy Sources before maintenance.

# 4 OBJECTIVE

The objective of this document is to formalise a system to ensure that all energy sources are isolated by means of a lock and tag system to ensure that injury or death does not occur while mainaenance is being performed on Plant and Equipment.

# 5 SCOPE

This Standard applies at all times to all Huracan locations, Huracan employees and relevant contractors.

# 6 RESPONSIBILITY

## 6.1 MANAGERS

Have the immediate responsibility to meet legislative and regulatory obligations in regards to providing a safe and healthy workplace including the safe management of plant.
Ensuring processes are in place for the execution of this procedure;
Ensure authorised personnel have been trained to confirm they are competent to comply with this procedure

## 6.2 EMPLOYEES AND CONTRACTORS

All employees and contractors must comply with this procedure and isolations system;
All employees and contractors shall be responsible for any locks or isolations they install and the integrity of the equipment applicable to;
Ensuring that isolations are effective for the task and will not reduce the integrity of the safety of the equipment



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## 7 PROCEDURE

An isolation procedure is a set of pre-determined steps that should be followed when workers are required to perform tasks i.e. maintenance, repairs, installation or cleaning of plant. Isolations should be used in accordance with the risk management process – identify, assess, control, monitor & review. Isolation procedures involve the isolation of all forms of potentially hazardous energy to prevent inadvertent movement or activation, and that entry to a restricted area is controlled for the duration of the specific task the isolation is required for. The lock-out process is the most effective isolation procedure, which includes:

1. Shut down the plant
2. Identify all energy sources and any other hazards present
    a. Refer to JSA and ensure thorough risk assessment has been conducted
3. Identify all isolation points
    a. Refer to OEM / SOP for further detail
4. Isolate all energy sources (consider):
    a. Electricity (mains);

i. Except in the case of equipment connected via a plug and sockets, all other electrical isolations shall be completed by a person who is also a qualified electrician.

    b. Battery or capacitor banks;
    c. Solar panels;
    d. Fuel;
    e. Heat;
    f. Steam;
    g. Fluids or gases under pressure (water, air, steam or hydraulic oil);
    h. Stored energy (i.e. compressed springs);
    i. Gravity; and
    j. Radiation.

- NOTE: Emergency Stops/Shut-Downs are not to be relied upon as the only isolation source as they will not necessarily achieve effective isolation i.e. they may not prevent unauthorised re-energising of the plant or provide adequate information to workers regarding the isolation requirements.

5. Control or de-energise all stored energy
    a. Must only be done by a competent person i.e. qualified electrician is able to de-energise electrical equipment, a mechanic can de-energise hydraulic energy, a trained operator can de-energise a pressurised line, a plumber is competent to de-energise domestic gas line etc.
    b. “Look close, look far, look for the hidden:”
        i. Inspect the plant to make sure all parts have stopped moving
        ii. Install ground wires

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iii. Relieve trapped pressure
iv. Release the tension on springs, or block the movement of spring-driven parts
v. Block or brace parts that could fall because of gravity
vi. Block parts in hydraulic and pneumatic systems that could move from the loss of pressure
vii. Bleed the lines and leave vent valves open
viii. Drain process piping systems and close valves to prevent the flow of hazardous material
ix. If a line must be blocked where there is no valve, use a blank flange
x. Purge reactor tanks and process lines
xi. Dissipate extreme cold or heat, or provide protective clothing
xii. If stored energy can re-accumulate, monitor it to make sure it stays below hazardous levels.
xiii. The first step in managing risks from carrying out manual tasks is to identify those tasks that have the potential to cause MSDs. Hazards that arise from manual tasks generally involve interaction between a worker and:
xiv. the work tasks and how they are performed
xv. the tools, equipment and objects handled
xvi. the physical work environment.

6. Lock out all isolation points:
    a. Built-in locks (lockable battery isolator, lockable switches);
    b. Chains;
    c. Safety padlocks.
        i. One person, one lock, one key – each person involved should have their own lock, tag and key with no duplicate keys for any lock (except a master key kept in a secure location to be used in an emergency).
        ii. In the event two or more people are working on plant that is isolated through several lockout points, each person shall attach a lock and tag to each lockout point or use a lock box.
    d. Lock box
        i. Used when multiple personnel are involved on the job, only one padlock is used on the isolation point with the keys locked in a box that has been locked separately by each worker.
7. Tag machinery controls, energy sources and other hazards;
    a. Personal tag;
    b. Out of service tag;
        - NOTE: A tag is not an effective isolation device on its own, only a lock is effective at isolating the energy source. A tag should be used as a

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means of providing information to others at the workplace about the lock.

8. Test the isolation is effective by trying to "reactivate" the plant (where possible without exposing anyone to risk). If the plant fails to reactivate, then the isolation/s is effective and the stored energies have dissipated. However, further measures may be required to ensure the plant is safe to work on, for example, hydraulic or pneumatic pressure, suspended weight or compressed springs would all require secondary controls to be implemented, such as install a chock to prevent a hydraulic energised component from failing or ensure a suspended weight is secured to prevent inadvertent movement. This is a critical step
    i. and must not be skipped under any circumstances.
9. Communication of isolation can be critical, failure to do so can be catastrophic.
    a. Use resources in place i.e. permits, handovers of specifics within JSA's/work program etc. tag-out register
    b. Provide detail. In the event another person is to carry on with the task, detail is critical to ensure the continuation of the job safely i.e. guards removed, safe re-activation of energy etc.
    c. In the event a person fails to remove their personal lock & tag, a competent person may:
        i. determine the method of installation in use & the reason for its implementation
        ii. review the risk assessment relating to the removal of the isolation device/s
        iii. if it is deemed safe to do so, the competent person may remove the lock & tag and re-energise the plant
        iv. monitor and review the operational safety of the plant once re-energised

For works conducted on a Drilling and Completion site, the preferred Wellsite Permit to Work Program assists in the control and isolation of hazards expected within operations. This process should be considered as a back-up check to the existing controls in place to effectively isolate plant to enable work, maintenance or repair to be conducted safely.

Specific isolation procedures for plant are detailed within QHSE resource documentation i.e. JSA's, SOP's and OEM's.

## 7.1 PRE-PLANNED WORK ISOLATION

This includes the interface between Client & Huracan personnel/work i.e. production equipment is isolated to allow work to be performed.
These isolations shall remain in place after work is complete & removed by the person who installed the isolation.

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Any isolation installed by another party (Client, contractor) must be communicated to Huracan prior to works commencing i.e. handover process, permitted activity. Personnel shall be suitably trained with all relevant evidence of qualifications identified prior to work commencing.

## 7.2 PERSONAL ISOLATION

### OUT OF SERVICE TAG

- Fitted to defective plant to indicate that no attempt is to be made to operate the plant until repairs are completed. The tags can be attached to non-powered plant such as ladders, jacks and trolleys as well as powered plant and should be attached to the main controls if possible or to a prominent part if there are no controls (such as in the case of a damaged ladder). While an out-of-service tag is attached to plant, it must not be operated or use.
- The information recorded on each tag must be completed in full.
- Tags should be securely fixed, so as to be clearly visible.
- An out-of-service tag should only be removed once the defect is rectified.
- Out of service tags are intended to convey a clear DO NOT OPERATE warning and that failure to comply may result in damage to the equipment and may cause injury to a person.
- Except in an emergency, out of service tags shall be only removed by an authorised person who is both familiar with the plant and fully conversant with the reason that the tag was placed i.e. the mechanic after fixing the fault.
- In the absence of any personal danger tag or lock, removal of an out-of-service tag releases plant for use, and must not be done prior to ensuring that:
    - All people known to have been working on the plant are clear of the plant; and
    - A documented inspection of the plant indicates that all machinery guards are in place, that all protective devices are functional, that all maintenance tools and aids have been removed, and that the equipment is safe for normal use.

### PERSONAL DANGER TAG

- Installed & removed by the same person.
- Added as extra protection at the discretion of the worker, a Personal Danger tag is not considered an effective isolation on its own and should accompany a personal lock;
- May be an identified control on the JSA, SOP and / or permit;
- In the instance a permit is closed out & work is unfinished, it may be necessary for an isolation to remain in place. If the isolation is required to be removed and the installers will not be available, alternate conditions should be agreed upon by the work party i.e. personal tag removed & replacement tag installed by appropriate person coming onto shift, communal lock (assigned to unit/plant) may require key to be handed over during shift change etc. This detail should be recorded on the permit and/or pre-start job meeting.

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## PERSONAL LOCK

- Installed & removed by the same person.
- May be accompanied by a Personal Danger Tag stating the detail of person engaging tag/lock

## LOCK BOX

To avoid the need for multiple locks on each lockout point, a lock box may be used. Under this system each lockout point is locked by only one lock and the keys to the locks of the plant's lockout points are placed inside a box which is locked by the individual locks of people working on the same plant.

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