ISOLATION

PURPOSE AND SCOPE

The intent of this document is to eliminate or minimise the risks of fatalities, injuries and incidents arising from any activity that involves the isolation of stored energy, live services, static and mobile plant, and equipment at Gamuda Australia (GA) projects / workplaces.

CRITICAL CONTROLS
– Unless tested for dead, all cables, stored energy sources, plant and/or equipment are to be considered and treated as live
– Isolations for all potential harmful energy sources are identified by competent persons
– Isolation procedures are determined by risk assessment and specific to the needs of the activity
– Personnel undertaking the isolation are trained and competent
– Roles are nominated to manage isolations – Authorised Isolator, Permit Issuer and Permit Holder and personnel are trained and competent in the permit process.
– Isolation permits are in place for all complex* isolations prior to work commencing
– Isolation devices, locks, tags, and equipment are in place
– A physical isolation integrity test (check for dead) is conducted prior to work commencing
– Stored energy is safely released / discharged prior to work commencing
– Isolations must be in place for servicing and maintenance activities

**Refer to Simple and Complex Isolations below.*

Note: The above controls are to be read in conjunction with the Regulations, Standards and Codes listed below.

RISK MANAGEMENT – PLANNING

A Safe Work Method Statement (SWMS) must have been completed prior to the works commencing and cover the entire activity from preparation of works, isolation processes and return to service / re-energised. The SWMS shall identify all hazardous energy sources that may potentially re-activate the service, plant or equipment and may include, but not limited to the following.

– electrical (electrical power supply, static charges, batteries, capacitors)
– pressure (compressed air, vacuum, hydraulics)
– mechanical (mechanical drives, moving and rotating machinery, guarding)
– gravitational (counterweights, inadvertent vehicle movements, suspended material, etc.)
– potential (springs, structural strain)
– thermal (hot or cold surfaces and substances, heat radiation)
– noise and vibration
– ionising radiation (X-rays, radioactive sources)
– non-ionising radiation (lasers, welding, electro-magnetic fields, microwaves);
– hazardous substances (corrosive, poisonous, asphyxiant, flammable, explosive, reactive substances)
– biologic hazards (bacteria, insects, reptiles, etc.).

ISOLATION – SIMPLE AND COMPLEX

Simple isolations, including but not limited to:

- Isolation of a single energy source;
- Isolations in place for one shift period or less;
- Isolation of a single isolation point; and
- Isolations involving up to five personnel.

The task risks and controls must be outlined in an approved safe work method statement detailing the lock out / tag out process. Personnel undertaking and/or involved with any simple isolation must be trained in the project-specific isolation training program.

Complex isolations, including but not limited to:

- Isolation of more than one energy source;
- Isolations in place for more than one shift period;
- Isolation of multiple isolation points;
- Isolation of safety critical equipment of systems;
- Isolation of high voltage, and
- Isolation of hazardous materials.

As a minimum, the task risks and controls must be outlined in an approved safe work method statement detailing the lock out / tag out process and an approved isolation permit **GA-FRM-HSE-135 Permit to Isolate** must be completed for all complex isolations. Personnel undertaking and/or involved with any complex isolation must be trained in the project-specific isolation training program.

ISOLATION INTEGRITY & EFFECTIVENESS

During normal work, personnel are typically protected from contact with significant sources of energy, plant and equipment by established controls (separation, guarding, and other engineering controls and administrative controls), or because the source of energy is contained within the plant or equipment.

Where guards, interlocks and other safety devices may have to be removed or by-passed, or where tasks may involve exposure to hazardous materials or energy sources, isolations must be used.

Conventional emergency stop buttons (E-Stops), conveyor lanyards, and other similar control circuit devices are not suitable for use as a primary means of isolating energy sources.

LOCKING OF ISOLATION POINTS

Prior to commencement of work on any plant or equipment that requires isolation, it is essential that thorough consideration be given to how the isolation is to be carried out and how the effectiveness of the isolation can be proved.

When selecting and affixing isolating devices, proof that the devices have functioned correctly (testing for dead) can be accomplished by visual inspection, opening drain valves, attempting to start or operate the equipment, and can be supported by observing indicator lamps, use of test instruments or other appropriate means.

Isolation: Personal danger locks are to be used for the isolation of plant or equipment that may otherwise place an individual at risk of being injured when in the confines of a machine or working on live plant and equipment. Each person working on a piece of plant or equipment must attach their own personal Danger Lock.

One person, one lock: If more than one person is working on the same plant, each person should attach their own lock to prevent the isolator being opened before all locks have been removed or opened.

Each lock must display the name and contact details of the person placing it. A Personal Danger Lock may only be removed by the individual who placed it on the isolation point. The use of 'attached' DANGER or OUT OF SERVICE tags should be regarded as an additional safeguard which is supplementary to isolation padlocks and under no circumstances should DANGER tags or OUT OF SERVICE tags serve as a primary method or as a substitute for isolation padlocks.

REGULATIONS, STANDARDS AND CODES

- Work Health & Safety Regulation 2011 (QLD, ACT), 2012 (SA), 2017 (NSW, NT) and 2022 (WA)
  - Part 4.7 Electrical Safety and Energised Electrical Work; Chapter 5; Plant & Structures
- Occupational Health and Safety Regulations 2017 (VIC), Part 5 Plant
- SafeWork Australia Code of Practice Managing Risks of Plant in the Workplace
- AS/NZS 4024 – Safety of Machinery - Prevention of unexpected start-up
- AS/NZS 4836 – Safe working on or near low-voltage electrical installations and equipment
- SafeWork Australia: Code of Practice Managing Risks of Plant in the Workplace

FORMS AND CHECKLISTS

- **GA-FRM-HSE-135** Permit to Isolate