



Critical Controls and Performance Requirements

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Introduction

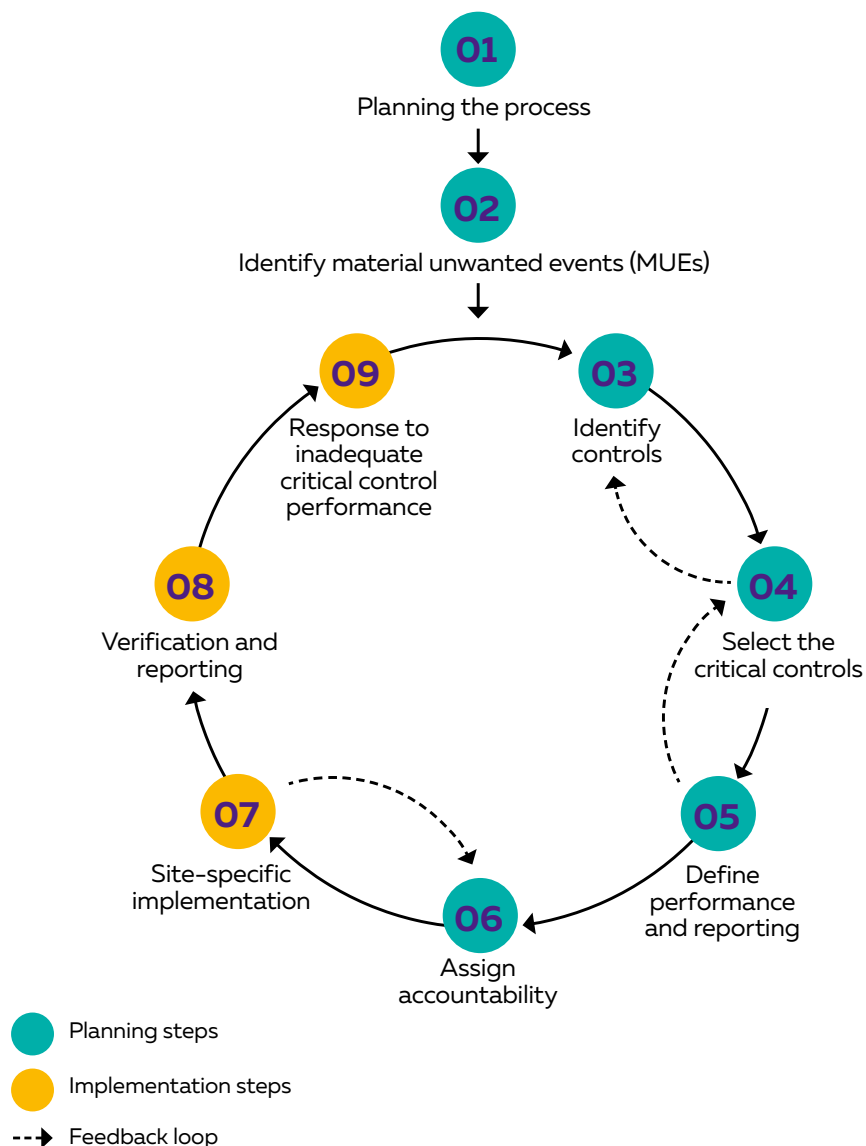
Ausgrid's Critical Control Management (CCM) Process for the management of Fatal Risks has been adopted from the CCM Process described by the International Council on Mining and Metals (ICMM) referenced at Figure 1.

The process is aimed at focusing Ausgrid resources on the controls that are considered critical to reducing risks. These are called Critical Controls.

The effective application of these Critical Controls ensures the prevention of fatalities and life changing injuries, and a decrease in high potential incidents, repeat incidents and repeat causes.

Every
Job,
Every
Time.

Figure 1. The Critical Control Management Process



Definitions

What are Safe Work Fundamentals?

The Safe Work Fundamentals are the foundational requirements that must be met before the commencement of any work, in addition to the Critical Controls and any other Controls.

What is a Fatal Risk?

A Fatal Risk is a risk category for an incident resulting in a fatality or the potential for fatality.

What is Critical Control Management?

CCM is the process of managing Fatal Risks, it involves a systematic approach to ensure Critical Controls are in place and effective for all high-risk activities.

What is a Control?

A Control is an act, object (engineered) or system (combination of act and object) intended to prevent or mitigate an unwanted event.

What is a Critical Control?

A Critical Control is a Control that is crucial to preventing a critical event or mitigating the consequences of a critical event. The absence or failure of a Critical Control would significantly increase the risk despite the existence of the other Controls. All Critical Controls **must be** applied on **every job, every time**.

What is a Performance Requirement and how do they relate to Critical Controls?

The performance requirements are standards to which a Control must perform to be regarded as effective at preventing or mitigating the risk. Each performance requirement is a specific, observable, measurable and auditable requirement that defines how the Control must be applied. This includes reference to how it can be checked and where further detail can be obtained when clarity is required.

How to read this document

The Critical Controls within this document are indicated by the **CC:** symbol.

Each Fatal Risk will have their Critical Controls indicated here in purple text

CC: Wear LV Insulating Gloves

- Complete an air-test before use and confirm gloves are in good condition
- Wear a low voltage insulating glove with a protective leather outer glove on each hand and only make contact with your insulated glove covered hands

The Performance Requirements of each Critical Control will be outlined here

Safe Work Fundamentals

The Safe Work Fundamentals are foundational requirements that must be met before the commencement of work.

The five Safe Work Fundamentals are:



1 Pre-Task Assessment.

Before starting work, identify the required resources, assess the risks and implement the necessary controls.

The Hazard Assessment Conversation (**HAC**) must be used to record the risk assessment, Safe Work Method Statement (**SWMS**) and Critical Controls used at each work site.



2 Training and Competency.

All workers must be trained and competent for the work they are undertaking.



3 Tools and Equipment.

All tools and equipment must be fit for purpose, in good condition and inspected before use. Personal Protective Equipment (**PPE**) must be worn as designed and intended for the task.



4 Fitness for Work.

All workers must be fit for their assigned work, including being functionally capable of carrying out the tasks and not impaired through drugs, alcohol or fatigue.



5 Incident / Emergency Response.

Suitable emergency response plans and equipment must be in place before work begins.

Exposure to Discharge of Electricity

Fatal Risk 1



Work on or Near Live Exposed LV Mains and Apparatus

CC: Wear LV Insulating Gloves

- Complete an air-test before use and confirm gloves are in good condition
- Wear a low voltage insulating glove with a protective leather outer glove on each hand and only make contact with your insulated glove covered hands

CC: Maintain Separation Between Uninsulated Parts of the Body and All Conductors

- Maintain a clear airgap between uninsulated parts of your body and all exposed conductors and conductors covered with temporary insulation

CC: Insulate All Other Potentials Within Reach

- Apply temporary insulation to all live exposed conductors that are within reach, other than the conductor being worked on
- Ensure the temporary insulation is in good condition, adequately secured for the task being performed and only used for inadvertent contact

Exposure to Discharge of Electricity

Fatal Risk 1



Work on or Near Live Exposed LV Mains and Apparatus

CC: Insulate Worker from Earth Potential (Ground)

- Insulate yourself from earth potential (Ground) by working from either:
 - › An insulated EWP; or
 - › Timber or fibreglass ladder, pole or platform; or
 - › An insulating mat; or
 - › Wearing rubber gumboots
- › Apply temporary insulation to any conductive material at earth potential that is within reach
- › Ensure mobile plant is connected to earth with an appropriate exclusion zone and no worker makes uninsulated contact with the plant or its load
- › Ensure the mobile plant or load (other than a timber or composite fibreglass pole) must not make contact with the temporarily insulated exposed conductors

CC: Work On One Potential at a Time

- Work on, and make contact with, one electrical potential at any given point in time
- Complete electrical tests before making connections to ensure that both conductors are at the same potential

CC: Safety Observer in Place

- Have an attentive Safety Observer in place monitoring the work and not carrying out any other duties while observing

CC: Rescue Equipment in Place (AED, Rescue Kits and PPE)

- Have rescue equipment in place, such as an AED, appropriate rescue kits and PPE

Exposure to Discharge of Electricity

Fatal Risk 1



Service Connection / Replacement

CC: Complete Service Wire Polarity Test

- Test to determine the phase and neutral conductors at the distributor mains
- Determine the polarity of the service wire, using independent earth connected to the consumers neutral

CC: Complete Customer Neutral Connection Integrity Check

- Complete the Neutral Integrity Test, confirming results within acceptable limits
- Re-insert the consumers neutral into neutral link on completion of tests

CC: Complete Customer Neutral Voltage Check

- Complete the Neutral Voltage Test, confirming results within acceptable limits

Record all test results in the appropriate system.

Exposure to Discharge of Electricity

Fatal
Risk 1



Operating Network Mains and Apparatus

CC: Wear Mandatory Personal Protective Equipment (PPE)

- Wear the required mandatory personal protective equipment (**PPE**) for the operating task being undertaken, in accordance with ESR 9.5.3 and relevant Operating Advices

CC: Maintain Adequate Separation from Live Exposed Mains and Apparatus

- Maintain adequate separation from live exposed mains and apparatus appropriate to the voltage level and scope of authority. Refer to:
 - › Minimum safe working distances (**ESR 7.1**);
 - › Reduced minimum safe working distances (**ESR 7.2**);
 - › Absolute limit of approach (**ESR 7.3**).
 - › Prove the mains & apparatus are de-energised using approved methods and detecting equipment, testing the equipment both immediately before and immediately after proving mains and apparatus are de-energised

CC: Safety Observer (verifier) in Place

- Have a Safety Observer (verifier) in place witnessing the work and/or assisting with the operating, in accordance with relevant Operating Advices

Exposure to Discharge of Electricity

Fatal Risk 1



Work on or Near De-energised Mains and Apparatus

CC: Mains and Apparatus Isolated and Proved De-energised

- Isolate the mains and apparatus, prove the isolation and secure all points of isolation with mechanical locks, danger tags and/or barriers
- Ensure that the:
 - › Mains and apparatus, isolations, earthing and other precautions are clearly specified and appropriate for the work being carried out
 - › Access authority/permit has been accepted by the Recipient and signed onto by all workers of the workgroup working on or near the network specified on the authority / permit

CC: Mains & Apparatus Proved De-energised at Worksite

- Prove the mains and apparatus de-energised at the worksite before commencing work

CC: Mains & Apparatus Earthed/Short-circuited

- Install earthing and short-circuiting equipment appropriate for the work and voltage

CC: Defined Safe Work Area

- Define a safe work area using:
 - › Taping and signage (barrier-in or barrier-out method), as appropriate in substations and switchyards
 - › Black and yellow rope barrier with "DANGER – HIGH VOLTAGE TESTING" notices, as appropriate when applying hazardous test voltages

Exposure to Discharge of Electricity

Fatal
Risk 1



Work in the Vicinity of Live Mains & Apparatus

CC: Maintain Minimum Safe Working Distances

- Maintain minimum safe working distances (worker, plant and materials) from live exposed mains and apparatus
- Install suitable barriers and warning signs where there is risk of breaching MSWD's (and an access permit is not required) to exposed live HV mains and apparatus
- Accompany unauthorised workers within substations, and other areas with live exposed conductors

Exposure to Hazardous Chemicals, Materials and Dangerous Goods

**Fatal
Risk 2**



CC: Wear Mandatory Personal Protective Equipment (PPE)

- Wear Mandatory Personal Protective Equipment (**PPE**) for the hazardous chemical, material or dangerous goods, appropriate to the level or interaction

CC: Encapsulation and Suppression of Dust

- If creating or disturbing dust, eliminate or minimise the creation of airborne dust using appropriate encapsulation and suppression methods (wet/dry methods)

CC: Materials Handled and Disposed Correctly

- Handle, transport, store and dispose of hazardous chemicals, materials and dangerous goods in accordance with the waste classification and licence requirements

Hazardous substances include asbestos, lead, synthetic fibre materials, crystalline silica dust, PCB's, mercury, CCA poles and chemicals.

Falls from Heights

**Fatal
Risk 3**



CC: Use Fall Protection Equipment

- Use fall protection equipment, such as edge protection or wear a harness fitted with an appropriate lanyard attached to a fall restraint or fall arrest system
- Visually check Scafftag to confirm scaffolding has been inspected within the last 30 days, if greater than four meters in height.

CC: Maintain Three Points of Contact with Stable Footing

- Maintain three points of contact with stable footing while working from a ladder via either:
 - › Two hands and one foot; or
 - › One hand and two feet, or
 - › Two feet and a work positioning system (e.g. belt and pole straps)
 - › Not carry tools or equipment by hand while ascending or descending a ladder
 - › Ensure portable ladders are stable and secured at the bottom before climbing and where reasonably practicable secured at the top

CC: Working at Height Observer in Place

- Have a Working at Height Observer in place, ready to initiate a rescue if required, when fall arrest equipment is used

Motor Vehicle Incident

Fatal
Risk 4



CC: Driver to Maintain Attention and Alertness

- While driving a vehicle maintain attention and alertness, including:
 - › Not using mobile devices unless through appropriate hands-free devices
 - › Stay below the posted speed limit and reduce speed where appropriate for the conditions
 - › Maintaining a safe distance between other vehicles and increase the gap in poor conditions

CC: Wear Seatbelt

- Wear a properly secured and adjusted seatbelt (driver and passengers)

CC: Restrain Vehicle Loads

- Restrain vehicle loads (tools & equipment) to prevent movement, maintain vehicle stability, and ensure loads do not exceed the vehicle mass and dimension limits

Incident Involving Mobile Plant

Fatal
Risk 5



CC: Setup Mobile Plant Correctly

- Setup mobile plant correctly on stable ground with appropriate stability controls to prevent plant from becoming unstable or collapsing, including;
 - › Stabilisers deployed with dunnage under each pad
 - › Handbrake applied and wheel chocks installed
 - › Plant operating within leveling limits with Sloping Kits used where required
 - › Plant operating within manufacturers safe Maximum Wind Speed
 - › Plant is being used within it's safe Working Load Limit (**WLL**)

CC: Establish an Exclusion Zone

- Establish and maintain an appropriate exclusion zone (delineated where practicable), while the plant is in operation (including slewing operations)
- Ensure staff are not working within or entering the exclusion zone, unless entry has been communicated and acknowledged by the Plant Operator and Observer

CC: Observer in Place

- Have an Observer monitoring the plant movement and maintaining communication with the plant operator

Struck by Falling or Moving Object

Fatal
Risk 6



CC: Establish a Drop Hazard Zone

- Establish and maintain an appropriate drop hazard zone (delineated where practicable), which is being continually monitored by an Observer

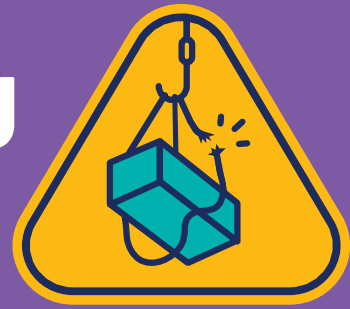
CC: Establish a Line of Fire Hazard Zone

- Establish and maintain an appropriate line of fire hazard zone (delineated where practicable), which is being continually monitored by an Observer

Ensure staff are not working within or entering the hazard zones, unless entry has been communicated and acknowledged by the Observer / Workers onsite.

Incident whilst Undertaking Lifting and Hauling Operations

Fatal
Risk 7



CC: Operate Plant and Equipment within their Rated Capacity

- Setup mobile plant correctly on stable ground with appropriate stability controls (**refer to FR5**)
- Attach the load via an appropriate and rated lifting point and method in accordance with the load lift study

CC: Establish an Exclusion Zone

- Establish and maintain an appropriate exclusion zone (delineated where practicable), with no entry unless communicated and acknowledged by the plant operator
- Ensure no person works or travels under a suspended load

Collapse of Excavation or Trench

Fatal
Risk 8



CC: Install Battering, Benching, Boxes and/or Shoring

- Batter, bench or shore excavations deeper than 1.5m to prevent collapse with appropriate safe access and egress established

CC: Establish an Exclusion Zone

- Do not store spoil within 1.5m of open excavation or trench
- For excavations deeper than 1.5m, establish an appropriate exclusion zone with physical barriers to prevent encroachment of materials, mobile plant or equipment
- For excavations shallower than 1.5m, not operate mobile plant within the zone of influence while any person is inside the excavation and within the immediate vicinity of the plant
- Install and secure appropriate barriers and/or covers at unattended excavations with signage in place

Breach of Controlled Worksite

Fatal
Risk 9



CC: Advance Warning Devices in Place

- Install signage and traffic control devices to effectively warn, inform and guide road users and pedestrians of temporary traffic arrangements including any temporary speed reductions for traffic travelling past or through the work area

CC: Delineate Work Area

- Establish a clearly defined worksite and work area with adequate separation or physical protection (e.g. barriers) in place between workers, pedestrians and live traffic
- Continually monitor the movement of traffic and pedestrians past and through the work area to ensure there is no unauthorised entry

Incident Involving a Confined Space

**Fatal
Risk 10**



CC: Atmospheric Testing in Place

- Undertake initial and periodic atmospheric testing of the confined space
- Continually monitor the atmosphere with one gas detector as close as practical to all workers within the confined space

CC: Standby Person in Place

- Have a dedicated standby person in place, controlling access to the confined space and maintaining communication with entrant/s and is prepared in the event of an emergency, in alignment with the access permit
- Wear a harness at all times while within the confined space



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