

Permit Manager Training Guide

Apply for Permit to Isolate High Voltage

Details of revisions			
Level	Details	Date	Initial
01	Creation of initial document for use	06-01-17	J.O'S
02	Revisions from Permit Workshops	15-03-17	J.O'S

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1 Introduction

1.1 Purpose

This guide provides information to Curtin University's Permit Manager and the role of the Permit Applicant, Permit Manager as part of the High Voltage Isolation process.

1.2 Inclusion Group

This guide is intended for any organisation that is,

- engaged by Curtin University to perform work on the Estate
- nominated to the Permit Applicant as the representative of the University.

2 High Voltage Isolations

High Voltage is defined as a voltage in excess of nominal 1000 Volts AC or 1500 volts DC. The company wishing to undertake High Voltage Isolations is required to comply with the Permit to Isolate Process as outlined within this training guide, and also adhere to all items within the High Voltage Systems Safety Management Plan.

2.1 Existing High Voltage

Curtin owns and operates an extensive High Voltage Network on its Bentley Campus. This network is supplied from the Western Power Bentley Zone Substation via four 22,000V dedicated feeds that to the Curtin Terminal Substation (Building 156). The Western Power Bentley Zone Substation has a capacity of 70MW, this capacity is potentially expandable to 105MW. The Curtin current Maximum Demand is around 10MW.

2.2 Stakeholder Consultation

Investigations by the Permit Applicant with the relevant Curtin stakeholders prior to application for a Permit to Isolate is one of the most integral steps to ensuring a permit can be approved, and an isolation can subsequently occur. The Process section below outlines this in further detail.

2.3 Risk Management

The Isolation Permit Procedure and the Permit to Isolate application are designed to guide parties wishing to Isolate through a structured risk assessment process.

Additional systems for risk assessment and analysis may also be necessary to effectively mitigate risk, particularly where higher risk services are involved.

The hierarchy of risk control can be applied to Isolation planning to ensure that all options to reduce likelihood, consequence or both of an Isolation causing damage to existing services or persons are properly considered prior to work commencing.

Table 1. Hierarchy of Control

Control	Test
Elimination	Can the Isolation be avoided completely?
Substitution	Can the location of works be altered to avoid Services?
Engineering	Can alternate design be used to reduce extent of isolations necessary?
Administrative	You must have the required Permits.
Personal Protective Equipment	You must have developed suitable SWMS during Isolation planning.

In addition to the Isolation activity itself the type, size location and age of the service are important considerations when planning an Isolation. It is important to recognise that each site and each set of circumstances represent a different risk exposure and as such each Isolation needs to be properly risk assessed and the relevant controls defined.

Different controls are possible for both likelihood and consequence and the Isolation plan should seek first to reduce:

- The likelihood of damaging existing infrastructure by ensuring the best data possible is obtained and verified on site.
- Consultation with the relevant Curtin University Stakeholders should verify whether other works recently completed, or works in progress have installed additional Services to those shown on obtained data.
- The location where the Isolation is being undertaken, adjacent works and whether this occurs in a live environment are all items to be considered in the Isolation risk assessment. The combination of these factors will assist to define the skills required on site during the Isolation to ensure that existing assets are not damaged with workers and patrons remaining safe.

2.4 Length of Isolation

The duration of the Isolation is required to be carefully considered as this has a significant impact on Curtin University assets, its tenants and patrons.

There are three (3) types of High Voltage isolations that are able to be carried out:

- Type 1) Daily Isolation
- Type 2) Extended Isolation - With Daily Reinstatement
- Type 3) Extended Isolation - With No Daily Reinstatement

Daily Isolation

An isolation that will be complete and reinstated within a single day.

Extended Isolation - With Daily Reinstatement

This type of isolation is to be selected within the online webform when there is an isolation that will have to occur over a number of consecutive days for a period of under 12hrs per shift and the service will be reinstated after hours (i.e. overnight). Extended isolations will only be permitted under certain circumstances. This is to be determined with the project team during Step 3.2 and 3.3 of the process workflow (refer to Section 3 below).

Extended Isolation - With No Daily Reinstatement

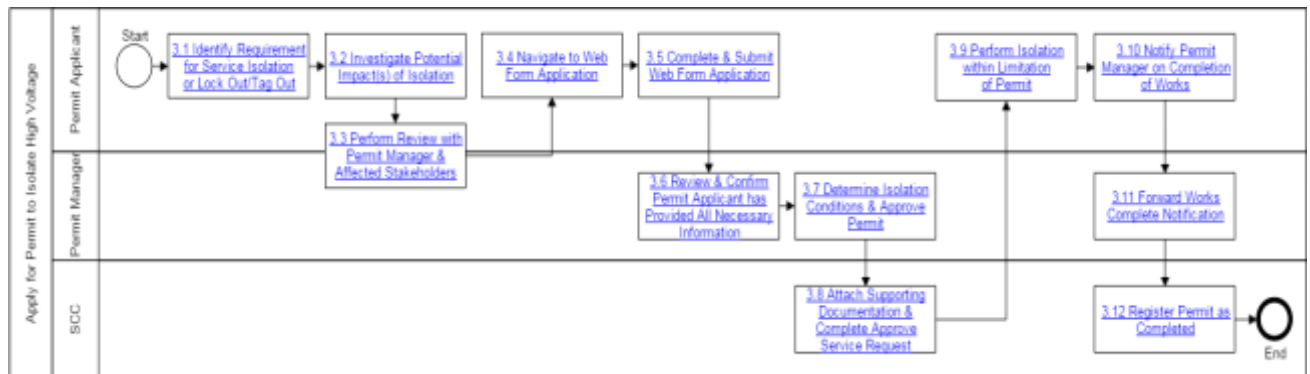
This type of isolation can only be applied for if it is absolutely necessary. This type of isolation involves having the services isolated for a period of 12hrs or more and will remain impaired/isolated after hours (i.e. overnight). Extended isolations will only be permitted under certain circumstances. This is to be determined with the project team during Step 3.2 and 3.3 of the process workflow (refer to Section 3 below).

3 Process - Apply for Permit to Isolate HV

1 Context

The Curtin University estate contains a significant amount of services. It is imperative that these services be identified prior to the commencement of any works, and interruptions be kept to a minimum. A permit is required when isolating any energy source, such as electricity, fire, gas, water, groundwater, air conditioning, data or telecommunications services from the source of supply, prior to servicing, repair or routine maintenance etc. 10 working days from the date of Permit Approval should be allowed by the applicant for the isolation to be performed.

2 Workflow Diagram



3 Process

3.1 Identify Requirement for Service Isolation or Lock Out/Tag Out

Accountability: *Permit Applicant*

- Encounter a situation where isolation is required
- Curtin Lock-out tag-out procedures must be followed during isolations, and referenced in Safe Work Method Statement

3.2 Investigate Potential Impact(s) of Isolation

Accountability: *Permit Applicant*

- Undertake all necessary investigations, seeking assistance from the Permit Manager (if required)
- Verify any information obtained from Curtin University's Drawing Office prior to use
- Determine suitable controls/hours of works to minimise impact and maintain operations
- Provide a clear plan, or mark-up of location of the isolation

- Provide details of the works, including details of the person physically carrying out the isolation
- Prepare a 'methodology of works' outlining step-by-step how the isolation will be performed from the navigation to site, isolation being performed, re-energisation and department from site
- Ensure that the isolation has been instituted before proceeding with any works

3.3 Review Permit & Affected Stakeholders Prior to Application

Accountability: *Permit Applicant in conjunction with Permit Manager*

- Ensure the content of the permit application is reviewed with the Permit Manager prior to the online application
- any necessary amendments must be made prior to completion of the online application form

3.4 Navigate to Web Form Application

Accountability: *Permit Applicant*

- Complete the Application for Permit to Isolate from the Properties Website:
<https://properties.curtin.edu.au/workingwithus/permits.cfm>

3.5 Complete & Submit Web Form Application

Accountability: *Permit Applicant*

- Complete all sections of the "Apply for Permit(s) to Work" application form after selecting the service to be isolated from the options available
- All specified supporting documentation must be attached
- Submit the application form (an automated notification confirming receipt will be issued)

3.6 Review & Confirm Contractor has Provided All Necessary Information

Accountability: *Permit Manager*

- Receive an automated 'Authorisation Requisition' email notification (with a unique Service Request ID) containing the Permit Applicant's completed online web permit application details along with the Specified Supporting Documentations as attachments
- Review and confirm Permit Applicant has provided all necessary information

3.7 Determine Isolation Conditions & Approve Permit

Accountability: *Permit Manager*

- Determine isolation conditions and approve permit
- Forward authorisation email to the SCC with a copy to relevant stakeholders
- The acceptable email is the 'authorisation' text extract from the automated 'Authorisation Requisition' email notification
- The Permit to Isolate application form should demonstrate the Permit Applicant has planned for the works, identified risks and has adequate mitigation strategies to safely execute the works

- If deficiencies or further clarifications are identified, the Permit Applicant is advised to assist with the completion and approval of the permit application

3.8 Attach Supporting Documentation & Complete Approve Service Request

Accountability: **SCC**

- Attach the supporting documentation to the corresponding Service Request ID and complete the 'Approve Service Request' function in Archibus.
- Once completed, both Permit Manager and Applicant will receive an automated email notification containing the approved Isolation Permit.

3.9 Perform Isolation within Limitation of Permit

Accountability: **Permit Applicant**

- Upon receipt of the email notification containing the approved Isolation Permit, ensure that the isolation is only undertaken within the limitations as authorised on the Permit.
- ensure that up to 10 working days have been allowed for an isolation to be performed by a Curtin Facilities Maintenance resource (or by the Permit Applicant under direct Curtin Supervision)

3.10 Notify Permit Manager on Completion of Works

Accountability: **Permit Applicant**

- Notify the Permit Manager via email that all works associated with the Permit have been completed, ensuring that the corresponding Service Request ID is quoted

3.11 Forward Works Complete Notification

Accountability: **Permit Applicant**

- Forward works complete notification to the SCC and relevant Stakeholders via email, notifying that all works associated with the Permit have been completed

3.12 Register Permit as Completed

Accountability: **SCC**

- Receive 'Works Complete' notification
- Register corresponding Service Request ID as 'Completed' in Archibus
- relevant Permit Manager & Contractor will receive an automated email notification of closure if the above action has been successfully completed



Related Tools

- Application for Permit to Isolate
- Archibus
- Risk Assessment / Risk Register (Contractor's own template)
- Safe Work Method Statement (Contractor's own template)
- Workplace Health & Safety Management Plan (Contractor's own template)



Related Knowledge

- Curtin Health, Safety & Emergency Management
- Curtin Risk Management
- Matrix
- Permit Manager Training Guide - Apply for Permit to Isolate High Voltage



Associated Processes

- Nil for this process

4 Roles & Responsibilities Matrix

Table 2. Isolation Process Roles & Responsibility Matrix

Responsibilities	Permit Applicant	Services Protection Officer (arranged & controlled by the Permit Applicant)	Permit Manager / Project Manager	SCC
Ensuring that any Permit Applicant, their employees and University staff are aware of the requirement for a permit to isolate, prior to any works being undertaken.	R1		R2	
Ensuring that for each and every Isolation activity on the Curtin University estate, a person within the company responsible for the Isolation, is to be identified as the Service Protection Officer (SPO)	R1	R2		
Consulting relevant Curtin University Stakeholders as identified by the Permit Manager to verify impacts and actions necessary for their management	R1		R2	
Applying for online Permit to Isolate and producing all required plans, drawings and Specified Supporting Documentation	R1		R2	
Identifying and coordinating resolution of deficiencies or areas requiring further clarification, following review of the Permit Applicant's online Isolation Request application.			R1	
Checking online permit application for accuracy and adherence to previous discussions prior to authorisation.			R1	
Forwarding an authorisation email and its attachments approving the Permit application to the SCC, with a copy to the relevant Stakeholders.			R1	R2
Attaching the Supporting Documentation to the relevant Service Request ID in Archibus and completing the 'Approve Service Request' function in Archibus				R1
Familiar with and understands the Isolation Permit prior to works commencing	R2	R1		
Has a full copy of the Permit in their possession at all times when Isolation is occurring.	R2	R1		
Facilitation of an OSH Works Planning Meeting on site, prior to works commencing to discuss OSH risks associated with the contracted works and to determine adequate control processes to deal with risk occurrence.	R1		R2	
Confirming with each trade involved in the work that they have checked that the actions they plan to undertake will not damage any Curtin asset on the site causing injury (or) death, rather than assuming the tradespeople fully understand.	R2	R1		
During the isolation, take all necessary precautions to ensure Services or any other assets on the Curtin estate are not damaged during the Isolation activity.	R2	R1		
Ensuring that isolation is only undertaken to the approved service, by the isolation method, and to confirm as part of their methodology that the isolation has been instituted before proceeding with any works by the specified isolater and within the limitations of the authorised Permit.	R1		R2	
Ensuring that Curtin University's Lock-out Tag-out (LOTO) requirements are satisfied.	R1	R2		
Ensuring a physical presence at the area where the isolation is occurring 100% of the time during the Isolation.	R2	R1		
During daily isolation, ensuring the service is re-energised following Curtin University's	R2	R1		

Responsibilities	Permit Applicant	Services Protection Officer (arranged & controlled by the Permit Applicant)	Permit Manager / Project Manager	SCC
LOTO procedures if the SPO needs to leave the site, even for a short period of time.				
Proactively monitoring isolation progress, key milestones and identifying risks, and managing specific risk issues	R1		R2	
Ensuring that Permit Applicant(s) remain on site until the de-isolation is complete and Curtin assets are confirmed as being successfully de-isolated/re-energised to the satisfaction of the relevant Curtin service manager.	R2	R1		
Intervening if any activities are likely to cause damage to Curtin assets (or) Injury / Death.	R2	R1		
Prior to de-isolation/re-energisation, assets and new works are assessed to mitigate risk of system false alarms, faults or leaks. For e.g. site generated dust is to be allowed to settle prior to removal of dry fire dust caps, and all altered or new connections on wet fire systems checked.	R2	R1		
Ensuring prior to any concealment of new services installed, modified services or undocumented services identified, a Surveyor is contacted to complete a survey of any installed Services, and the 'as-constructed' drawings set provided to the Permit Manager.	R1	R2		
Forwarding of a 'Works Complete' email quoting the corresponding Service Request ID to the Permit Manager	R1		R2	
Forward the 'Works Complete' email to the SCC and relevant Stakeholders notifying that all works associated with the Permit have been completed. Note this should only be done if works have been completed to the satisfaction of the Permit Manager.			R1	R2
Completing the 'Completed' function in Archibus and registering the Permit as 'Completed'				R1
Ensuring 'as-constructed' drawings pertaining to any new or installed services are forwarded to Curtin University's Drawing Services Team.			R1	

Legend	Key	Explanation
R1	Primary Responsibility	Responsible for directly actioning.
R2	Secondary Responsibility	Responsible for monitoring tasks performed by others.

5 Glossary of Terms

Table 3. Isolation Process Glossary of Terms

Term	Definition
Application For Permit To Isolate	A documented request for an Isolation Permit along with the Specified Supporting Documentation submitted to the Permit Manager by the Permit Applicant.
Application For Permit To Isolate Review	A due diligence type review of an Application For Permit To Isolate completed by the Permit Manager, the results from which are recorded in the Application For Permit To Isolate.
Close Proximity of Gas Electrical Equipment / Authority To Work In The Vicinity Of Electrical Apparatus	Means, for Gas, locations on installations, where deliberate, accidental or inadvertent contact with electrical equipment is possible, either by a part of the body touching a live part or indirectly through tools, long objects, drills, cutting blades or dropped conducting objects. The definition does not apply if the uninsulated and energised part of the installation has been safely and securely shielded, and protected with barriers or shrouding to guard against unintended contact. Additional consideration should be given if working in HV switchyards with exposed conductors as to minimum clearances required.
Permit Applicant	An organisation that is engaged by Curtin University to perform work on the Estate.
Isolation Permit	A Permit acknowledged by a Curtin University Representative that is provided following submission of an Application For Permit To Isolate. No Isolation can take place before an Isolation Permit is issued.
Isolation	De-energisation of any energy source, such as electricity, fire, gas, water, groundwater, air conditioning, data or telecommunications services from the source of supply, prior to construction activities, servicing, repair or routine maintenance.
Isolation Location Plan	A scaled plan that shows the location of the proposed Isolation on the site in relation to nearby buildings, rooms, roads & other infrastructure.
High Risk Activity (HRA)	Includes High Risk Work described in Schedule 6.3 of the <i>Occupational Safety and Health Regulations 1996</i> and additional Activities that will have an impact on Curtin University's infrastructure, services, operations, staff or students, including: <ul style="list-style-type: none"> • Isolation
Inspection	A process of checking that Workplace physical conditions are at an acceptable standard and that people are undertaking Activities consistent with expectations.
OSH Works Planning Meeting	A meeting, prior to works commencing, facilitated by the Permit Applicant, attended by the Permit Manager, and if required an OSH representative, to discuss OSH risks & appropriate Risk Management as identified by the Permit Applicant associated with the contracted works.
Non-Destructive Testing	The use of various non-invasive forms of detection which does not disturb or damage existing infrastructure. Some of these are; <ul style="list-style-type: none"> • Ground penetrating radar (GPR). • Radio detectors. • Metal detectors. • Acoustic detection.
Permit	Written authorisation to undertake HRA which must be received before proceeding with any HRA.
Permit Applicant	A Head Permit Applicant representative who submits an Application For Permit To Isolate Form, along with all Specified Supporting Documentation.
Permit Manager	The person authorised by the University to manage the Permit process, including receiving and endorsing applications for further action.

Term	Definition
Project Manager	The person managing the project on behalf of the University.
Risk	The chance of something happening that will have an impact upon objectives of Curtin University. It is measured in terms of Consequences and Likelihood.
Risk Assessment	A systematic use of available information to determine how often specified events may occur and the magnitude of their consequences.
Risk Management	The systematic application of management policies, procedures and practices to the tasks of establishing the context, identifying, assessing, treating and monitoring Risk.
Risk Treatment	Selection and implementation of appropriate options for dealing with risk.
Safe Work Method Statement (SWMS)	A statement submitted & reviewed by a Permit Applicant that describes the methods that will be applied to complete work safely.
Services	Any existing service on or adjacent to the Permit Applicant's site, such as electricity, gas, fuel, water, drainage and telecommunications infrastructure.
Services Location Plan	A Plan to be attached to the Application For Isolation which comprises a Service Location Plan for the Isolation Area and with any other surveyed services that are identified. This should clearly identify any difference between the Plan location of identified services and the outcome of on-site service location activities (surveys).
Services Protection Officer	A person arranged & controlled by the Permit Applicant, who fulfils the functions of the Services Protection Officer during Isolations.
Specified Supporting Documentation	Supporting documents required to be provided by the Permit Applicant, when submitting the Application For Permit To Isolate for the High Risk Activity.
Stakeholders	A group who has a stake in the permit procedure and who may be impacted by its outcome. Curtin University's Quick Response Group Manager is a permanent Stakeholder in the permit procedure.
Undocumented or Unknown Services	Any service which is encountered which is not present on any other known documentation. A survey of undocumented services is to be carried out, provided to the Curtin University Drawing Services Team, and included on as-constructed drawings.
Work Area	An area where Activities are being undertaken by Employees and/or Contracted Personnel.
Work Methodology	A statement submitted by the Permit Applicant that describes the tasks that will be completed as part of the Permit to Isolate.

Table 4. Isolation Process Document Types

Activity Register	Formal list of all Activities.
Form	Logically structured document with a fixed arrangement of captioned spaces, designed for entering, extracting, or communicating the required information.
Plan	Written account of intended future course of action (scheme) aimed at achieving specific goal(s) or objective(s) within a specific timeframe.
Plant & Equipment Register	A formal list of all Plant & Equipment.
Procedure	A fixed, step-by-step sequence of activities or course of action (with definite start and end points) that must be followed in the same order to correctly perform a task.
Process	Sequence of interdependent and linked procedures which, at every stage, consume one or more resources (employee time, energy, machines, money) to convert inputs (data, material, parts, etc.) into outputs.
Process Map	A visual representation of a procedure defining information flows and connections to documents and other procedures.
Program	A plan of action aimed at accomplishing a clear business objective, with details on what work is to be done, by whom, when, and what means or resources will be used.
Report	A document containing information organized in a narrative, graphic, or tabular form, prepared on ad hoc, periodic, recurring, regular, or as required basis.
Review	Orderly recall of past information in summary form for its re-examination.

Risk Register	A formal list of all risks.
Spot Check	Unscheduled inspection at random intervals.
Template	A file that serves as a starting point for a new document.

6 Reference Material

- Curtin University - Health, Safety and Emergency Management
http://healthandsafety.curtin.edu.au/safety_management/policies.cfm
- Curtin University - Risk Management webpage
https://riskmanagement.curtin.edu.au/risk_management/DF3C8A0E25244A9B45EDA0D35834999.cfm
- High Voltage Systems Safety Management Plan
[000012 Knowledge - High Voltage Systems Safety Management Plan.](#)