Safe Work Practices

Revision 3.0

Effective from 1st June 2018

NOTE: As approved by the A&I Leadership team, the Safe Work Practices Handbook is gradually being withdrawn from use. Sections of this document which have been superseded by other documents or processes within Hydro Tasmania have been removed and, where relevant, links have been provided to the appropriate reference document.

The original version of this document is available on request from the WHS Team.

This is an ongoing activity and the source of truth must always be the electronic version available directly from the Hydro Intranet.

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Contents

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Document History

This section has been removed as part of the staged removal of the Safe Work Practices Handbook

Sectional Version Summary

This section has been removed as part of the staged removal of the Safe Work Practices Handbook

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This section has been removed as part of the staged removal of the Safe Work Practices Handbook

1.0 Introduction

1.1 Purpose

All workers undertaking work on work sites controlled by Hydro Tasmania must adhere to these Safe Work Practices (SWP) which provide:

a) reasonable HSE instruction to workers on HT's HSE requirements;

b) the minimum HSE requirements for workers to ensure health, safety and wellbeing of all personnel so far as is reasonably practicable (SFARP) and to eliminate or minimise environmental harm; and

c) key information and references to Hydro Tasmania's (HT) broader HSE management system and associated standards and procedures.

1.2 Scope

For the purposes of these Standards, HT means the broader Hydro Tasmania Group including its subsidiary companies.

The SWP must be issued or made available to all persons who may be associated with planning, design, construction, commissioning, operating, or maintaining HT works.

It is the duty of all such persons to make themselves thoroughly conversant with the SWP.

In the case of unapproved use of this information by external parties, HT takes no responsibility for any loss or liability of any kind suffered by any party in reliance upon its contents whether arising from any error or inaccuracy in the information or any default, negligence or lack of care in relation to the preparation of the information within.

1.3 Introduction

These practices are supplementary to, and are to be observed in conjunction with, the Tasmania's Work Health and Safety Act and Regulations, HT's HSE Management System, and General Safety Instructions.

Other State and Federal Acts and Regulations also contain safety provisions relevant to HT activities, and these have to be considered and complied with where workers are engaged on work covered by such an Act or Regulation.

The SWP may be supplemented by HT Policies, Procedures and Instructions, provided that such Policies, Procedures and Instructions neither conflict with nor relax any of the principles laid down in these Standards.

1.4 Change Management

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Management of Change procedure.

This procedure is available for internal workers here: Management of Change procedure

Or at the following location for those accessing the external portal: Management of Change procedure

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

1.5 Document Control

This section has been removed as part of the staged removal of the Safe Work Practices Handbook

1.6 Hydro Tasmania Health, Safety and Environment (HSE) Management System

This section has been removed as part of the staged removal of the Safe Work Practices Handbook

The WHS Management System is available for internal workers here: Workplace Health and Safety

Or at the following location for those accessing the external portal: Workplace Health and Safety

1.7 Vision

This section has been removed as part of the staged removal of the Safe Work Practices Handbook

1.8 Our Values

This section has been removed as part of the staged removal of the Safe Work Practices Handbook

1.9 Life Saving Rules

This section has been removed as part of the staged removal of the Safe Work Practices Handbook. The source document is available for internal workers here: Life Saving Rules

Or at the following location for those accessing the external portal: Life Saving Rules

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

1.10 Risk Management Approach

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Hazards, Risks and Opportunities procedure.

The procedure is available for internal workers here: Hazards, Risks and Opportunities

Or at the following location for those accessing the external portal: Hazards, Risks and Opportunities

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

2.0 Inductions

2.1 Inductions

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the WHS Training, Awareness and Competency procedure.

The procedure is available for internal workers here: WHS Training, Awareness and Competency procedure

Or at the following location for those accessing the external portal:
WHS Training, Awareness and Competency procedure

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

2.2 General Site Entry and Departure

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the WHS Training, Awareness and Competency procedure and the HSE Induction.

2.3 Entry / Departure Arrangements

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the HSE Induction process

2.4 Visitors

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the HSE Induction process, the WHS Training, Awareness and Competency procedure and the HSE Induction Guide.

2.5 Apprentices and Trainees

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Apprentice Rotation Guidelines.

2.6 Electrical Safety Management Scheme

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the relevant Electrical Safety Management Schemes as below:

Hydro Tasmania Electrical Safety Management Scheme

Entura Electrical Safety Management Scheme

TVPS Electrical Safety Management Scheme

2.7 Regulatory Representatives

This section has been removed as part of the staged removal of the Safe Work Practices Handbook

2.8 Entry to Hazardous, Restricted Areas and Construction Sites

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the HSE Induction process

2.9 Minimum Entry Requirements to Hazardous, Restricted Areas and Construction Sites

This table outlines the minimum requirements for entry to HT hazardous, restricted areas and construction sites including assets, infrastructure, client sites, in state, interstate and overseas inclusive of:

a) power stations;

b) switchyards;

c) pole and transmission structures;

d) intake structures (e.g. intake gate buildings, hilltop valve houses, dam and dam galleries); and

e) project and construction sites.

✓= Required ★ = May be required	Level 2 Induction	First Aid See section 3.1.7	Construction Industry White Card	Level 3 Induction	Accompanied by approved person	PTW – Instructed Person	PTW – Person in Charge	PTW – Issue a Permit to Work	PPE – See section 7.5
Unaccompanied Entry	✓	★	✓	✓		✓	★	★	✓
Accompanied Entry			★	✓	✓	★		★	✓
Visitor Entry	★			★	✓				✓

Table 2: Minimum entry requirements to hazardous, restricted areas and construction sites

2.10 Entry to Lands and Buildings

This table outlines the minimum requirements for entry to HT land and buildings including client sites, in state, interstate and overseas, such as buildings, dams, canals, roads, lakes and rivers.

✓= Required ★ = May be required	Level 2 Induction	First Aid – See section 3.1.7	Construction Industry White Card	Level 3 Induction	Accompanied by approved person	PTW – Instructed Person	PTW – Person in Charge	PTW – Issue a Permit to Work	PPE – See section 7.5
Unaccompanied Entry	✓	★	★	✓		★	★	★	✓
Accompanied Entry			★	★	✓	★		★	✓
Visitor Entry	★			★	✓				✓

2.11 HSE Consultation and Communications

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Communication, Consultation and Collaboration procedure.

The procedure is available for internal workers here: Communication, Consultation and Collaboration

Or at the following location for those accessing the external portal:
Communication, Consultation and Collaboration procedure

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

2.12 Hazard Identification Tools

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Hazards, Risks and Opportunities procedure.

The procedure is available for internal workers here: Hazards, Risks and Opportunities procedure

Or at the following location for those accessing the external portal:
Hazards, Risks and Opportunities procedure

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

3.0 Incident Response and Management

3.1 Incident response

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Emergency Preparedness Standard and Site Incident Response Plans.

These are available from the Emergency Management Intranet page here: Emergency Management

Or contact your Hydro Representative for further information

3.1.1 Work Specific Site Incident Response Plans

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Emergency Preparedness Standard and Site Incident Response Plans.

These are available from the Emergency Management Intranet page here: Emergency Management

Or contact your Hydro Representative for further information

3.1.2 Evacuation

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Emergency Preparedness Standard, Site Incident Response Plans and the Site Based Induction process.

The Emergency Management document are available on the following intranet page: Emergency Management

Or contact your Hydro Representative for further information

3.1.3 Fire Prevention

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Hot Work and Fire Management procedure.

The procedure is available for internal workers here: Hot Work and Fire Management procedure.

Or at the following location for those accessing the external portal: Hot Work and Fire Management procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

3.1.4 Fire Extinguishers

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Hot Work and Fire Management procedure.

The procedure is available for internal workers here: Hot Work and Fire Management procedure.

Or at the following location for those accessing the external portal: Hot Work and Fire Management procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

3.1.5 Automatic Control

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by established Isolation processes.

3.1.6 First Aid

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the First Aid procedure.
The procedure is available for internal workers here: First Aid.

Or at the following location for those accessing the external portal: First Aid.

3.1.7 First Aid Personnel

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the First Aid procedure.

The procedure is available for internal workers here: First Aid.

Or at the following location for those accessing the external portal: First Aid.

3.1.8 Oxygen Revivers and Defibrillators

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the First Aid procedure.
The procedure is available for internal workers here: First Aid.
Or at the following location for those accessing the external portal: First Aid.

3.1.9 Self-Rescue Breathing Apparatus

Self-rescue units are provided at Hydro Tasmania power stations and administrative centres based on risk. The intent is that self-rescue units be taken to site and either carried during walk-around inspections or stored on shelves or hooks within 10 – 15 metres of the work area. All people must have completed training as part of their site-specific induction on the use of self-rescue equipment prior to entering areas where this may be required.

3.1.10 Security / Intruder Response

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Emergency Preparedness Standard and Site Specific Incident Response Plans and the Physical Site Security Procedure.

3.1.11 Unauthorised Entry or Suspicious Activities

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Emergency Preparedness Standard and Site Specific Incident Response Plans and the Physical Site Security Procedure.

3.1.12 Spill Response

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Environmental Management System, the Emergency Preparedness Standard and Site Specific Incident Response Plans.

These systems and documents are available below:

Environmental Management System

Emergency Preparedness Standard

Site Specific Incident Response Plans

3.1.13 Emergency Scenarios

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Emergency Preparedness Standard and Site Specific Incident Response Plans.

These documents are available below:

Emergency Preparedness Standard

Site Specific Incident Response Plans

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4.0 Incident Process

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Incident Management Procedure.

The procedure is available for internal workers here: Incident Management Procedure

Or at the following location for those accessing the external portal: Incident Management Procedure

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Incident Management Procedure.

The procedure is available for internal workers here: Incident Management Procedure

Or at the following location for those accessing the external portal: Incident Management Procedure

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Incident Management Procedure.

The procedure is available for internal workers here: Incident Management Procedure

Or at the following location for those accessing the external portal: Incident Management Procedure

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Incident Management Procedure.

The procedure is available for internal workers here: Incident Management Procedure

Or at the following location for those accessing the external portal: Incident Management Procedure

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Incident Management Procedure.

The procedure is available for internal workers here: Incident Management Procedure

Or at the following location for those accessing the external portal: Incident Management Procedure

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

4.5 Guide to Fair Play

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Guide to Fair Play.

This document is available for internal workers here: Guide to Fair Play

Or at the following location for those accessing the external portal: Guide to Fair Play

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

5.0 Permit to Work

5.1 Permit to Work

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Permit to Work (PTW) procedure.

The procedure is available for internal workers here: Permit to Work (PTW) procedure.

Or at the following location for those accessing the external portal: Permit to Work (PTW) procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

5.2 Isolation Procedure

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Isolation Procedure.

The procedure is available for internal workers here: Isolation Procedure.

Or at the following location for those accessing the external portal: Isolation Procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

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6.0 HSE Management of Contractors and Suppliers

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Management of Contractors and Suppliers procedure.

The procedure is available for internal workers here: Management of Contractors and Suppliers procedure.

Or at the following location for those accessing the external portal:
Management of Contractors and Suppliers procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

6.1 Site Supervision of Contractors (Construction or Maintenance Works)

6.1.1 Site Supervision

Site supervision means the general direction, coordination and oversight of the onsite work processes as delegated through the PTW system and/or the specification for contract and associated works management system. HSE supervision involves:

a) confirming and monitoring safe access to HT owned and operated sites;

b) deciding when particular contractors or phases of the construction process can commence, and when it is necessary to suspend a process;

c) coordinating simultaneous construction or operational activities by providing reasonable instruction and coordination for work associated with one process so as not to endanger persons engaged in other processes;

d) on becoming aware of an unsafe condition, work practice or situation, issuing prompt directions necessary to safeguard site personnel and/or the general public from harm; and

e) monitoring the general conduct of work for compliance with the builders' and/or contractors' HSE procedures and safe work method statements.

Supervision is a shared responsibility and is dependent on what skill, experience and functional roles there are within the workgroup. For example, an electrical worker's responsibility to supervise an electrical trainee is not diminished by the appointment of a Person in Charge of work workgroup for the purposed of a PTW.

The responsibility of a contractor's need to offer an adequate level of supervision is also not diminished by HT actions to exercise control at a site. Contractors also have a duty to provide the necessary degree of supervision to their workers to enable them to perform their work in a manner that is safe and without risks to health.

Any supervision provided must be commensurate with the level of HSE risk (residual) associated with the scope of works.

6.1.2 Delegated Supervision

For supervision to be effective, the supervisor must have the clearly delegated authority to:

a) make prompt decisions on behalf of HT;

b) issue directions on matters that could adversely affect the health or safety of on-site personnel or the general public; and

c) in all other respects, act on HT's behalf in discharging HT's on-site HSE responsibilities.

The above aspects can be managed in different ways, through the Permit to Work process, specification for contract or by other documented means.

6.1.3 Competent Supervision

Competent supervision is when:

a) the supervisor has a general understanding of the construction sequences, processes and work practices associated with the type of construction being undertaken at the site;

b) the supervisor has a general awareness of the hazards and risks associated with the types of materials, chemicals, plant and equipment used at the site;

c) the supervisor has an understanding of the minimum controls necessary to safeguard site personnel and the general public from harm;

d) timely direction is available in the event of uncertainty on what is required to safeguard health, safety and the environment; and

e) monitoring of HSE measures are actively delegated to the contractor where direct site supervision is limited. This includes understanding any limits to the decision-making responsibility where the HT supervisor's availability is limited.

6.1.4 Records of Supervision

To avoid doubt, it is recommended that HT supervisors keep brief but clear records, such as:

a) diary notes of site visits and verbal HSE instructions;

b) copies of any written HSE site directions issued; and

c) copies of inspections performed (e.g. Safety Walks, Loss Prevention Inspections, Safe Interactions etc.).

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7.0 HSE Procedures

7.1 Alcohol and Other Drugs

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Alcohol and Other Drugs procedure and our HSE Induction process.

The procedure is available for internal workers here: Alcohol and Other Drugs procedure.

Or through the HSE induction process for contractors and other workers.

7.2 Transmissible Infections and Diseases

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is covered within the First Aid procedure and the International Travel procedure.

These procedures are available for internal workers here:

First Aid procedure

International Travel procedure

Or at the following locations for those accessing the external portal:

First Aid procedure

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

7.3 Fatigue Management

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Fatigue Management procedure.

The procedure is available for internal workers here: Fatigue Management procedure.

Or at the following location for those accessing the external portal: Fatigue Management procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

7.4 Smoke Free Workplace

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is delivered through the HSE induction process

7.5 Personal Protective Clothing and Equipment

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Personal Protective Equipment (PPE) procedure.

The procedure is available for internal workers here: Personal Protective Equipment (PPE) procedure.

Or at the following location for those accessing the external portal: Personal Protective Equipment (PPE) procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

7.5.1 Visitors Personal Protective Clothing and PPE

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Personal Protective Equipment (PPE) procedure.

The procedure is available for internal workers here: Personal Protective Equipment (PPE) procedure.

Or at the following location for those accessing the external portal: Personal Protective Equipment (PPE) procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

7.5.2 Jewellery and Adornment

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Personal Protective Equipment (PPE) procedure.

7.5.3 Eye and Face Protection

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Personal Protective Equipment (PPE) procedure.

The procedure is available for internal workers here: Personal Protective Equipment (PPE) procedure.

Or at the following location for those accessing the external portal: Personal Protective Equipment (PPE) procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Personal Protective Equipment (PPE) procedure.

The procedure is available for internal workers here: Personal Protective Equipment (PPE) procedure.

Or at the following location for those accessing the external portal: Personal Protective Equipment (PPE) procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

7.5.4 Hand Protection

Hand and finger injuries are one of the most common injuries for a tradesperson. We often wear gloves to protect ourselves from injury and they need to be readily available for use. But remember, PPE is the least preferred level of control and if there are better ways to reduce the risk of a hand injury we should adopt it.

The type of gloves used should be appropriate for the scope of work and anticipated hazards. Gloves should be attached to a waist band/belt/belt hoop via a plastic glove clip, except where there is a risk of entanglement or as defined in a risk assessment.

Gloves should be worn as a minimum when:

a) handling material that has the potential to burn, cut, tear or otherwise cause injury to the skin;

b) working in inclement weather conditions; or

c) walking over rough terrain where a fall could occur.

Cleaning gels and barrier creams should be made available as appropriate, to reduce the risk of dermatitis. Even though gloves are worn, hands must still remain clear from the “line of fire” or risk of entanglement from rotating or moving equipment.

EN 388 Standard applies to all kinds of protective gloves in respect of physical and mechanical aggressions caused by abrasion, blade cut, puncture and tearing. The ‘mechanical risks’ pictogram is accompanied by a 4-digit code which provides an indication of performance as detailed in the below table. The test results vary according to the fibres, materials, stitching and coating used to make a particular glove. This information can be used to select a glove appropriate to the task.

TEST		Abrasion resistance (in cycles)	Cut resistance (factor)	Tear resistance in N	Penetration in N
Performance level	**1**	100	1.2	10	20
	2	500	2.5	25	60
	3	2000	5.0	50	100
	4	8000	10.0	75	150
	5	-	20.0	-	-

Table 5: Glove performance level

TASK	Range and types of gloves						
	Chemical	Cut resistant	Rigging	High vis	Extra light	Medium	Barrier cream
							
EN 388 Performance level	3132	4542	4441	4131	211-	322-	-----
Using portable electric hand tools *		✓✓✓	✓✓	✓✓	✓✓	✓✓✓	
Cable pulling & cable drum handling		✓✓✓	✓✓✓	✓✓		✓	
General light handling of materials (manual handling)		✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓
Handling abrasive & sharp objects (timber, steelwork)		✓✓✓	✓	✓			
Handling sharp-edged objects (knives, steelwork)		✓✓✓	✓	✓			
Handling corrosive materials or substances (refer SDS)	✓✓✓		✓				✓
Hot work (Hot objects)			✓✓				
Installing and handling concrete materials		✓✓	✓✓✓	✓✓	✓	✓✓	
Rigging (general)		✓✓✓	✓✓✓	✓✓	✓	✓	
Wire rope / catenary work		✓✓✓	✓✓✓	✓✓		✓	
Impact hand tools		✓✓	✓✓✓	✓✓		✓	

** If there is a risk of entanglement from rotating parts the use of gloves should be avoided unless deemed absolutely necessary to offer hand / skin protection. E.g. protection from exposure of a chemical substance.*

✓might be ok ✓✓can be better ✓✓✓preferred

Table 6: Hand protection guide

7.5.5 Hearing Protection

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Personal Protective Equipment (PPE) procedure.

The procedure is available for internal workers here: Personal Protective Equipment (PPE) procedure.

Or at the following location for those accessing the external portal: Personal Protective Equipment (PPE) procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

7.5.6 Ultraviolet Radiation

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Personal Protective Equipment (PPE) procedure.

7.5.7 Respiratory Protection

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Personal Protective Equipment (PPE) procedure.

The procedure is available for internal workers here: Personal Protective Equipment (PPE) procedure.

Or at the following location for those accessing the external portal: Personal Protective Equipment (PPE) procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

7.6 High Risk Work

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Hazards, Risks and Opportunities procedure.

The procedure is available for internal workers here: Hazards, Risks and Opportunities procedure.

Or at the following location for those accessing the external portal: Hazards, Risks and Opportunities procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

7.7 Ergonomics

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Hazardous Manual Tasks procedure.

The procedure is available for internal workers here: Hazardous Manual Tasks procedure.

Or at the following location for those accessing the external portal: Hazardous Manual Tasks procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

8.0 Hazardous Materials and Substances

8.1 Asbestos Management

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Asbestos Management procedure.

The procedure is available for internal workers here: Asbestos Management procedure.

Or at the following location for those accessing the external portal: Asbestos Management procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

8.2 Asbestos Removal Work

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Asbestos Management procedure.

The procedure is available for internal workers here: Asbestos Management procedure.

Or at the following location for those accessing the external portal: Asbestos Management procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

8.3 Hazardous Substance Management

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Hazardous Chemicals management procedure.

The procedure is available for internal workers here: Hazardous Chemicals management procedure.

Or at the following location for those accessing the external portal: Hazardous Chemicals management procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

8.4 Gas Cylinder Safety and Storage

When not in use, gas cylinders must be returned to designated storage positions at each facility. Where there is no planned work using gases, cylinders must be returned to a workshop, welding bay or bulk store for storage.

Gas cylinders must be:

a) stored vertically;

b) stored with valves closed and valve protection caps and plugs in place;

c) secured by chain, cable or rope to prevent falling;

d) free from the risk of fire and away from sources of heat or ignition;

e) not stored in or near access or egress passageways;

f) stored in a well-ventilated area regardless of whether the cylinders are full or empty; and

g) stored at least three metres away from fuel gas cylinders such as LPG and acetylene if it is an oxidising gas such as oxygen.

Where used on a work site, a single oxygen and acetylene cylinder may be stored together, provided they are:

a) secured to prevent fall;

b) in a location free from the risk of collision; and

c) not impacting access or egress.

If in doubt, the cylinders should be returned to the designated storage position.

8.4.1 Transport

Whenever possible, use a cylinder trolley for transporting cylinders.

The following points must be considered and applied when transporting cylinders:

a) if transporting cylinders by commercial vehicle less than 2.5 tonnes, the total weight of cylinders should not exceed 250 kg;

b) cylinders transported in the upright position must be restrained to the vehicle body or contained in a purpose-built frame with at least two horizontal straps applied. Where this is not possible, cylinders can be transported lying down but they must be placed lengthwise on the deck on chocks to prevent them rolling sideways, with the valve facing rearwards, and be secured by at least two tie-down strap;

c) flammable liquefied gas must be transported vertically;

d) ensure the cylinder label can be clearly seen without repositioning the gas cylinder, so that in an emergency those responding can identify the nature of the gas being transported. Do not cover with tarpaulins;

e) avoid transporting gas cylinders inside the passenger compartment of vehicles. However if this was to occur due to an emergency situation, the following must apply:

   i. secure the cylinders, using a suitable method of tie down, behind a fixed metal partition separating the boot/cargo area from the passenger compartment;

   ii. ensure the vehicle is well ventilated leaving at least two windows open;

   iii. gas cylinders must not be left in a stationary vehicle for extended periods, e.g. more than one hour.

8.5 Waste Management

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Hazardous Chemicals management procedure and the Environmental Management System.

The procedure is available for internal workers here: Hazardous Chemicals management procedure.

The Environmental Management System is available here: Environmental Management System

Or at the following locations for those accessing the external portal:

- Hazardous Chemicals management procedure
- Waste Management Procedure

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

8.6 SF6 Management

Sulphur hexafluoride (SF6) is an insulating and arc-quenching gas used in some electrical equipment. SF is a tasteless, odourless, non-toxic, inert and heavier-than-air gas.

If an SF gas concentration exceeds 35% by volume in air, there is danger of suffocation due to lack of oxygen.

SF6 insulated equipment must be clearly identified and its presence included in the hazard assessment and signage for a facility.

Local procedures must be followed for the maintenance and emergency management of SF6 equipment, and under no circumstances must any person enter a room or enclosure after abnormal equipment operation or failure without first conducting a risk assessment and, where required, using the protective clothing and breathing apparatus provided in the SF6 emergency kit.

Hydro Tasmania is required to report on various greenhouse gas emissions including SF6. Emissions are estimated based on the NGER (Measurement) Determination. Technical guidelines provide additional guidance and commentary to assist reporters in estimating greenhouse gas emissions for reporting under the NGER system.

Toxic decomposition products can be formed when SF6 is subject to severe electrical arcing. These include metal fluorides and gaseous products, such as sulphur monofluoride (S2F2) and sulphur tetrafluoride (SF4). The latter is particularly unstable and quickly reacts with oxygen, moisture and other materials within the compartment to produce a more stable gaseous mixture.

Some of these gases are considered hazardous and have therefore been assigned Exposure Standards by Worksafe Australia. Workers maintaining or performing corrective maintenance on SF6 equipment must identify safety control measures to reduce the risk SFARP.

8.6.1 Precautions

The following precautions will be observed:

a) work will not begin until all protective clothing and equipment for handling the SF6 decomposition products are available and worn;

b) unless full protective clothing is worn, enclosed compartments must not be entered until they have been cleaned and ventilated;

c) work on plant containing contaminated SF6 must be performed by at least two competent persons;

d) due to the risks associated with SF6 a risk assessment shall be completed based on the activities being performed. e.g gas sampling and top up maintenance;

e) if during work on previously decontaminated equipment, skin irritation, eye irritation or nose irritation occurs, the work area must be vacated and the decontamination process repeated;

f) persons working with SF6 plant and equipment must observe a high standard of personal hygiene;

g) eating, drinking and smoking must be prohibited in the work area; and

h) if it is necessary to wipe nose, eyes or face, leave the contaminated zone and remove gloves before so doing.

8.6.2 Protective Measures for Personnel

Protective clothing must include:

a) pocket-less, hooded, non-permeable (for example bonded polypropylene), disposable, industrial-grade overalls having elastic ankle and wrist grips that overlap the footwear and gloves;

b) disposable neoprene or nitrile gloves;

c) disposable waterproof over-boot covers;

d) face shield/mono goggles/safety eyewear;

e) an SF6 detector capable of detecting 20ppmv, 200ppmv and 1 000ppmv SF6 in air;

f) dry air supply – any type of clean, oil-free dry air supply may be employed that is suited in delivery capacity to provide the purging and ventilating rates required;

g) suitable equipment for protection of the respiratory tract. The choice of equipment will depend upon the situation:

   i. for work in an enclosed area where decomposed SF6 has been discharged, or inside an SF6 enclosure, a full face mask respirator with air supply according to European Standard EN 136 or equivalent is recommended;

   ii. for short-term inspection and work where ventilation can be provided but where the concentration of used SF6 may exceed the appropriate maximum level, a face mask with cartridge filter is recommended. European Standards EN 140, EN 141 and EN 143 specify masks, gas filters and particle filters respectively. Combined filters of type A2/B2/E2/K2/P3 manufactured to these standards are available and can provide protection against gaseous and solid SF6 decomposition products including particles of greater than 1 mm diameter;

h) bottled MediAir; and

i) cleaning solvent – denatured ethyl alcohol.

Note: Different solvents may be specified for cleaning insulation and metallic components in a manufacturer's maintenance manuals.

8.6.3 Protective Measures for Plant

Metallic fluoride dust is very hygroscopic i.e. it absorbs moisture very rapidly from the air. The result is a greasy, semi-conducting substance. It is therefore of the utmost importance that once the plant has been opened, insulating parts, contact parts and housing walls which must be overhauled and returned to service are immediately cleaned. Before the plant is opened, it is important to ensure that all preparations have been made for cleaning.

Dust should be cleaned from the plant using a vacuum cleaner.

Very adhesive dust should be wiped from components with clean, dry, lint-free cloth and residue-free solvent or as instructed by the manufacturer.

Note: AS2791-1996 Para 6.5.6 describes that parts that are to be removed from the plant should be immersed or washed thoroughly in a neutralising solution prior to further handling of parts. This complies when medium and high decomposition arcing is suspected.

9.0 Working in Hazardous Environments

9.1 Work Area Delineation and Signage

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and the information can be found in other documents, including the Permit to Work procedure, Isolation procedure, Work at Heights procedure and the Incident management procedure.

These procedures are available for internal workers here:
Permit to Work procedure

Isolation procedure

Fall and Height Safety procedure

Incident Management procedure

Or at the following locations for those accessing the external portal:
Permit to Work procedure

Isolation procedure

Fall and Height Safety procedure

Incident Management procedure

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

9.2 Concealed Services

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Concealed Services and Excavation procedure.

The procedure is available for internal workers here: Concealed Services and Excavation procedure.

Or at the following location for those accessing the external portal: Concealed Services and Excavation procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

9.3 Hot Work

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Hot Work and Fire Management procedure.

The procedure is available for internal workers here: Hot Work and Fire Management procedure.

Or at the following location for those accessing the external portal: Hot Work and Fire Management procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

9.4 Lifting, Rigging and Slinging

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Lifting and Rigging procedure.

The procedure is available for internal workers here: Lifting and Rigging procedure.

Or at the following location for those accessing the external portal: Lifting and Rigging procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

9.5 Working in or near Water

Where personnel are required to perform work near or over a body of water, an adequate barrier or other form of separation is the first measure that must be assessed to minimise the risk to personnel.

A personal flotation device (PFD) must be worn whenever there is potential for a person to slip or fall into the water. Personnel working on the back of a vessel with no stern rail are to wear a PFD, and all personnel working on the water must be trained in the use of life saving equipment.

In the event that it is impracticable to wear a PFD, a full body harness, compliant to AS/NZS 1891, must be worn and used in restraint configuration.

A safe work method statement must be completed before working in or near water. The SWMS must address the potential risks:

a) drowning and/or engulfment;

b) exposure or hypothermia;

c) collision with boats or infrastructure; and

d) snagging and entanglement.

All electrical power tools, equipment, and extension leads used over or near water must be connected to a residual current device; be prevented as far as practical from falling into water or being inadvertently splashed; and if exposed to moisture, removed from service.

Refuelling and spillage control measures must be in effect for diesel-powered plant (e.g. diesel-powered welders, generators). Bunding containers or double-skinned fuel tanks must have sufficient capacity to contain 110% of the possible contaminants (fuel, oil, water, etc.) stored within the device.

Refuelling or servicing items of plant while situated over water is to be conducted in a manner that will minimise the risk of spillage. A person must be present at the outlet end at all times, to ensure that nozzles and service attachments do not become dislodged from the particular machine during the refuelling or servicing process.

Specific training may also be necessary to fulfil the associated responsibilities and/or to manage the risks associated with working in or near water. Where workers are required to access or negotiate pathways along unprotected water's edge on a regular basis, self-rescue training (e.g. swift water rescue) should be considered as a control measure.

Current and predicted weather and water conditions must be reviewed prior to beginning work in water, and work postponed if weather conditions are considered unsuitable for the scope of works.

9.5.1 Personal Safety Equipment

Upper level control measures should be applied that minimise the need for PFDs. The risk assessment must determine the controls required to enable the task to be performed in a manner that personnel are not exposed to hazards.

PFDs must provide sufficient freedom of movement and sufficient buoyancy in a safe floating position. They must be easily secured to the body, be readily visible and not prone to snagging under water. Retro-reflective strips and clip-on self-igniting lights must be fitted when undertaking night operations.

Personal Safety Equipment Type	Wading	Boats	Electrofishing	Work near a waters edge where there is
Personal flotation device – Level 50 (similar to PFD Type 2), Level 100 (similar to PFD Type 1), and Level 150 (similar to inflatable PFD Type 1)	✓ 2	✓	✓	✓
Rafting helmet (EN 1385-compliant)	✓ 3	1		
High traction footwear (consider chains, studded etc)	✓			
Waders or rubber boots			✓	
Quick release footwear (e.g. laced boots with zippers or elastic sided boots)		✓		✓

1 When instructed by coxswain or identified through a risk assessment.

2 Not all Wading operations require the wearing of a PFD. It is the responsibility of the PCMW to decide whether Wading activities require a PFD after assessing the Risk via a Take 5 or SWMS. Refer HSEP0941 Appendix D Wading Guidelines.

3 For Underground or Tunnel work an approved Mining or Caving Helmet

Table 9: Personal Safety Equipment Type

9.5.2 Water Safety for Small Vessels and Wading Procedure

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Water Safety for Small Vessels and Wading procedure.

The procedure is available for internal workers here: Water Safety for Small Vessels and Wading procedure.

Or at the following location for those accessing the external portal: Water Safety for Small Vessels and Wading procedure.

The following login and password may be required:

Username: hydrocontractor Password: $DsX0!gd7

9.5.3 Small Boats

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Water Safety for Small Vessels and Wading procedure.

9.5.4 Wading

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Water Safety for Small Vessels and Wading procedure.

9.5.5 Diving Operations

This section has been removed as part of the staged removal of the Safe Work Practices Handbook.

9.5.6 Snorkelling

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Scientific Snorkelling procedure.

The procedure is available for internal workers here: Scientific Snorkelling procedure.

Or at the following location for those accessing the external portal: Scientific Snorkelling procedure

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

9.5.7 Backpack Electrofishing

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Water Safety for Small Vessels and Wading procedure.

9.6 Confined Space

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Confined Space procedure.

The procedure is available for internal workers here: Confined Space procedure.

Or at the following location for those accessing the external portal: Confined Space procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Confined Space procedure.

The procedure is available for internal workers here: Confined Space procedure.

Or at the following location for those accessing the external portal: Confined Space procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

9.7 Lone and Isolated Work

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Remote and Isolated Work procedure. See the following page for more details.

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Remote and Isolated Work procedure.

The procedure is available for internal workers here: Remote and Isolated Work procedure.

Or at the following location for those accessing the external portal: Remote and Isolated Work procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

9.8 Underground Safety

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Underground Safety procedure.

The procedure is available for internal workers here: Underground Safety procedure.

Or at the following location for those accessing the external portal: Underground Safety procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

9.9 Step, Touch and Transferred Potentials

Among other control measures, a power station and associated switchyards are designed to reduce as far as practical any adverse prospective step or touch voltage hazards by the installation of an earth grid. Fault current is designed to dissipate through the earthing grid and earthing medium if a fault to earth occurs in electrical equipment. The voltage reduces (voltage drop) as the distance from the origin of the fault to earth increases. However, if a conductive path to an earth is placed further away from the source of the fault to earth, a hazardous difference of potential may exist.

For example, it is an unsafe practice to set up a work area outside an earth matted area and supply electrical hand tools and equipment by running an extension lead from a supply source originating from an earth matted area. Therefore, when setting up work areas the extent of the earth mat should be positively identified with the Asset Owner or delegate and measures put in place to manage the electrical risk as far as reasonably practicable.

Control measures that could be applied to manage the risk include:

a) move the work area to the power outlet so it is at the same earth potential as the power source;

b) use an isolation transformer;

c) use a separate power supply, such as a portable generator; and

d) engineer a solution and extend the earth mat out to where the work is occurring.

9.10 Electromagnetic Fields (EMF)

Hydro Tasmania is aware of research and questions being raised as to whether exposure to power frequency electric or magnetic fields may be harmful to health. Scientists have not yet been able to provide a definitive answer to this. There are a few recent complex international standards/guidelines (for different metrics and different frequencies). However, there is no reliable scientific basis for the adoption of arbitrary low exposure limits or setbacks or for a specific exposure level at which precaution should apply.

However, until definitive evidence is available, prudent avoidance is recommended where levels and the frequency of exposure is elevated. Across a range of Hydro Tasmania power generating assets, some readings were found in excess of 30,000 milligauss (mG). This measurement was taken in very close proximity to areas such as machine terminals, HV switchgear and transformer HV cable entry. It should be noted that these readings reduced significantly within a distance of one metre, to levels well below the recommended guidelines. This indicates that distance as well as isolation can be used as a control against exposure.

Elevated readings of non-ionising radiation must be signposted. Work exceeding a 2-hour limit in these areas will be accompanied by measures to limit exposure, including rotation of resources, maximising distances from the source, and isolation measures. These measures should be documented in the supporting risk management documentation for the scope of works.

9.10.1 Medical Implants

Medical devices or implants such as insulin pumps or cardiac pacemakers may be susceptible to interference from external fields, including radio-frequency fields and power-frequency EMF. As the susceptibility of medical implants to EMF interference can differ, there is a need for a case-by-case risk management approach in consultation with the wearer's treating physician.

Workers fitted with medical implants should discuss their work and working environment with their treating physician and provide their manager with a letter from their treating physician describing the circumstances in which the proper functioning of the medical device or implant may be at risk. A documented risk management plan should be developed in consultation with all parties which clearly defines any restrictions and strategies to manage the risk.

9.10.2 Survey Requirements

Where there are significant changes to plant that have a material effect on increasing EMF levels, a survey must be conducted. Any changes must be made available in a survey report, updated in the HT documentation system and added to risk registers along with the installation of signage and control measures appropriate to the hazard.

10.0 Operating Plant and Vehicles

All operating plant and vehicles must comply with the Workplace Australia national standard for plant and the certification standard for users and operators of industrial equipment. These form the basis for technical and operations business standards for operating plant, including mobile plant.

Plant operators must:

a) have the appropriate licences, competency and have received instruction through verification of competency on the range of operations of the plant;

b) complete pre-operational checks including confirming that the warning and emergency devices are operational;

c) where available, review documented service history prior to operation to confirm it is in serviceable condition;

d) record and notify relevant personnel of any faults or corrective maintenance identified;

e) remove plant from service by placing a 'hazardous or unusual condition' tag where a fault is considered to contribute to an unacceptable work health and safety risk;

f) use personal protective equipment as outlined by the manufacturer's recommendations or hazard assessment; and

g) operate the plant and set up the work area to manage risk to personnel, equipment or the environment to an acceptable level.

Note: Vehicles must be reverse parked at all HT own and operated sites.

Construction work in an area with movement of powered mobile plant requires a safe work method statement.

10.1 Transporting Loads

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Chain of responsibility guidelines available on the internal intranet and training provided via Success factors.

The Chain of Responsibility guidelines are available on the intranet here: Transport intranet page.

10.1.1 Load Restraint

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Chain of responsibility guidelines available on the internal intranet and training provided via Success factors.

The Chain of Responsibility guidelines are available on the intranet here: Transport intranet page.

10.1.2 Transporting Dangerous Goods

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Hazardous Chemical Management procedure, Hazardous Substance Transport Checklist and the Checklist for Transporting Controlled Waste & Oil (New/Used).

These procedures are available for internal workers here:

- Hazardous Chemical Management procedure
- Hazardous Substance Transport Checklist
- Checklist for Transporting Controlled Waste & Oil (New/Used)

Or at the following location for those accessing the external portal:

- Hazardous Chemical Management procedure
- Hazardous Substance Transport Checklist
- Checklist for Transporting Controlled Waste & Oil (New/Used)

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

10.2 Use of Vehicles and Fuel Burning Plant in Underground Locations

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Use of Vehicles and Fuel Burning Plant in Underground Facilities procedure.

The procedure is available for internal workers here:
Use of Vehicles and Fuel Burning Plant in Underground Facilities procedure.

Or at the following location for those accessing the external portal:
Use of Vehicles and Fuel Burning Plant in Underground Facilities procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

10.3 Excavation

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Concealed Services and Excavation procedure.

The procedure is available for internal workers here: Concealed Services and Excavation procedure.

Or at the following location for those accessing the external portal: Concealed Services and Excavation procedure.

The following login and password may be required:
Username: hydrocontractor Password: $DsX0!gd7

10.4 Crane Use

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Lifting and Rigging procedure.

The procedure is available for internal workers here: Lifting and Rigging procedure.

Or at the following location for those accessing the external portal: Lifting and Rigging procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

10.5 Forklift Use

All forklift drivers must be competent for the task and possess a current high risk work licence for forklift trucks. Workers do not require a licence if operating a pedestrian walk behind a forklift or pallet truck.

When operating a forklift an operator must:

a) travel with the forks approximately 150 mm (6 inches) from the ground so they clear any uneven surfaces;

b) review the planned route to confirm clearance and headroom for operation and travel;

c) travel in reverse or ask another worker to act as a guide when carrying a load that obstructs a clear view;

d) not carry passengers unless specifically designed for that purpose;

e) sound the horn when turning a blind corner;

f) confirm the forklift and any associated attachments and load weights do not exceed floor limits;

g) operate within its limits of travel (e.g. not turned while on a ramp or incline); and

h) never obstruct fire protection equipment, emergency exits, or park in a manner that would obstruct a person from exiting the area.

At the completion of the operations the forklift must be parked in a way that does not obstruct pedestrian or other plant access. The forklift keys must be removed from the ignition and secured to manage unauthorised operation.

10.6 Road Safety

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Fleet and Travel Intranet page.

This page is available for internal workers here: Fleet and Travel Intranet page.

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Fleet and Travel Intranet page.

This page is available for internal workers here: Fleet and Travel Intranet page.

11.0 Hand and Power Tools

All hand and power tools must be unmodified and comply with original manufacturer's supply. All portable hand and power tools must be inspected before use, maintained in a safe condition and used in a safe manner. Tools found to be in an unserviceable condition must be tagged with a 'hazardous or unusual condition' tag until repaired by a competent person or disposed of. As a minimum, a Take 5 should be used to identify the risks associated with the use of hand and power tools, which may lead to the need to introduce a PTW to manage the risks (e.g. hot work)

11.1 Guarding

When power operated tools are designed to accommodate guards, they must be equipped with such guards when in use. A manufacturer's designed guards must not be modified or repositioned.

Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating or moving parts of equipment must be guarded if such parts are exposed to contact by workers or otherwise create a hazard. All guarding must be in accordance with a manufacturer's requirements.

One or more methods of machine guarding must be provided to protect the operator and other workers in the machine area from hazards such as those created by point of operation, in-running nip points, rotating parts, flying chips, and sparks. Examples of guarding methods are barrier guards, two-hand tripping devices, electronic safety devices, and interlocks.

Point of operation is the area on a machine where work is actually performed on the material being processed. The point of operation of machines whose operation exposes a worker to injury must be guarded. The guarding device must be in conformity with any appropriate Australian standards or, in the absence of specific standards, must be so designed and constructed as to prevent the operator from having any part of their body in the danger zone during the operating cycle.

Special hand tools for placing and removing material must be such as to permit easy handling of material without the operator placing a hand in the danger zone. Such tools must not be in lieu of other guarding required by this section, but can only be used to supplement the protection provided.

Machines designed for a fixed location must be securely anchored to prevent 'walking' or moving. Safety guards of the types described in this section, where the operator stands in front of the opening, must be constructed so that the peripheral protecting member can be adjusted to the constantly decreasing diameter of the wheel. The maximum angular exposure above the horizontal plane of the wheel spindle, as specified in this section, must never be exceeded, and the distance between the wheel periphery and the adjustable tongue or the end of the peripheral member at the top must never exceed 6 mm.

11.2 Switches

All hand-held powered tools, such as circular saws, chain saws, and similar percussion tools, grinders, jigsaws etc. should be equipped with a constant pressure switch that will shut off the power when the pressure is released. (Exception: This paragraph does not apply to concrete vibrators, concrete breakers, powered tampers, jack hammers, rock drills, and similar hand operated power tools.)

All switches must operate as per manufacturer's requirements and methods for relieving switch pressure must not be permitted i.e. jamming open or tying off.

11.3 Hand Tools

Wrenches, including adjustable, pipe, end, and socket wrenches, must not be used when the jaws are sprung to the point where slippage occurs. Impact tools, such as drift pins, wedges and chisels, must be kept free of mushroomed heads. The wooden handles of tools must be kept free of splinters or cracks.

Note:

a) Keep tools stored in an orderly manner on tool benches or in tool chests to prevent possible damage;

b) Use the proper tool for the task. Never subject a tool to a strain beyond its capacity;

c) Tools are not to be left lying on moving or vibrating machinery/equipment or on pipes or structures where they may be dislodged and fall;

d) All tools including wedges and drifts that may spring, fly or fall to lower levels upon impact must be fitted with an attachment which attaches a safety 'lanyard' to a solid structure to restrain the impact tool from becoming a projectile; and

e) All hand tools used in elevation areas that may be dropped or fall to lower levels must be fitted with safety lanyards and attached to solid structures or, in the case of podgers, scaffold keys etc., attached by wrist lanyard to the user.

11.4 Electric Powered Tools

Electrical power tools must be of the approved double-insulated type. The electric cords must not be used for hoisting or lowering of the tool.

Loose clothing and jewellery that could get caught in the machinery should not be worn when using powered tools. Always disconnect the power source before repairing, servicing or adjusting power tools.

Keep body parts and loose clothing away from the point of operation.

Electrical power tools must be fitted with the current inspection tag.

11.5 Portable Generators

Correct earthing of mobile generating sets must be adhered to. Generators supplying only portable equipment, not supplied via a switchboard with an MEN connection, do not need to be earthed. If the generator is supplying fixed wiring via a switchboard (e.g. a portable office building) then it must be provided with a main earth. The wiring arrangements shown in AS/NZS 3010 should be followed.

Where the direction of rotation is critical, mobile generating sets must be checked for correct phase rotation before being placed in service.

11.6 Pneumatic Powered Tools (Compressed Air)

Compressed air must not be used to clean clothing. The stream of air must not be directed at the operator or workers. Inspect air hoses and couplings before use to confirm they are in good condition and connected securely. Only approved fittings must be used.

Hoses with larger than 30 mm bore must be coupled with the correct clamps provided with the couplings (double acting fittings). These hoses should also be fitted with an internal steel cable connected to each coupling with locking pins. A whip check or chain must be used on the outside of couplings.

Before turning on the compressed air supply to a machine or air tool, ensure the controls are in the off position. The air supply must be turned off and air discharged before disconnecting tools or equipment.

Never use compressed air to pressurise or blow out drums or tanks. These containers are seldom, if ever, constructed for use as pressure vessels, and serious damage or injury may result should the vessel rupture.

Pneumatic power tools must be secured to the hose or whip by approved positive means to prevent the tool from becoming accidentally disconnected. Safety clips or retainers must be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled.

All pneumatically driven nailers, staplers, and other similar equipment provided with automatic fastener feed, which operate at more than 100 kPa pressure at the tool, must have a safety device on the muzzle to prevent the tool from ejecting fasteners, unless the muzzle is in contact with the work surface.

Compressed air must not be used for cleaning purposes except where reduced to less than 30 kPa, and then only with effective chip guarding and personal protective equipment. The 30 kPa requirement does not apply for concrete form, mill scale and similar cleaning purposes. Hoses exceeding 12 mm inside diameter must have a safety device at the source of supply or branch line to reduce pressure in case of hose failure. The hoses on pneumatic tools must not be used for hoisting or lowering of the tools.

Airless spray guns of the type which atomize paints and fluids at high pressures (1,000 pounds or more per square inch) must be equipped with automatic or visible manual safety devices which will prevent pulling of the trigger to prevent release of the paint or fluid until the safety device is manually released. A diffuser nut which will prevent high pressure, high velocity release while the nozzle tip is removed, plus a nozzle tip guard which will prevent the tip from coming into contact with the operator or other equivalent protection, must be provided in lieu of the above.

Abrasive cleaning nozzles must be equipped with an operating valve which must be held open manually. A support must be provided on which the nozzle may be mounted when it is not in use.

Energy sources must be disconnected before performing any repairs, servicing or adjustments.

11.7 Fuel Powered Tools

Fuel powered tools must be shut down when being refuelled, serviced, or maintained. Fuel must be transported, handled, and stored in approved safety cans. Fuel powered tools are not to be used in enclosed or confined spaces.

Before repairing or servicing fuel powered tools, always remove the spark plug wire.

11.8 Hydraulic Power Tools

Hydraulic power tools must use only approved fluid that is fire resistant and must retain its operating characteristics at the most extreme temperatures to which it will be exposed. The manufacturer's safe operating pressures for hoses, valves, pipes, filters and fittings must not be exceeded.

Before making any repairs, servicing or adjustments, all sources of energy must be removed and isolated in accordance with HT isolation procedures.

Always check the manufacturer's manual before disassembling any hydraulic power tool, as the accumulator may be under pressure and create a significant hazard.

11.9 Angle Grinders

No worker must use an angle grinder 230 mm (9 inch) or above for cutting. Grinders above 170 mm (7 inch) may be used for grinding.

Preferred options for cutting are:

a) 220 mm (9 inch) demolition saw with enclosed guard and bull handles;

b) 100 mm (4 inch) grinder with less power and greater control;

c) drop saw with enclosed guard and vice.

d) cold cutting saw

e) Sparks and off-cuts must be managed to reduce the risk of fire. An operator must:

f) use a guarded tool;

g) never force a wheel or disk onto a tool;

h) replace a wheel or disk that has been dropped or otherwise damaged;

i) avoid using excessive tool force;

j) remove themselves from the line of fire; and

k) ensure the right wheel or disk is used for the material and speed.

Airborne health hazards may come from abrasives and bonders in wheels or disks and also from the materials on which the grinders are used. All workers must wear appropriate respiratory protection where airborne health hazards are identified. Eye protection must be used in conjunction with a face shield or a combination eye/face protection devices rated high impact resistant must be worn to protect a worker from physical hazards when working with or in proximity of grinders (refer to section 17).

11.10 Bench and Pedestals

Before use, ensure that:

a) the side guard is in place;

b) the tongue guard extending down from the top of the grinder is in place and within 6 mm of the grinding wheel;

c) the work rest is tight and adjusted to within 3 mm of the grinding wheel;

d) eye shields are clean and properly adjusted;

e) PPE is worn as defined in Section 17 of this procedure;

f) the grinding wheel is dressed and in good working condition; and

g) the wheel is designed for the purpose

11.11 Chainsaws

Workers must not use a chainsaw unless they are competent and have completed an accredited chainsaw training course.

The operator must check that the throttle trigger, safety lock, stop switch and chain brake are in good working order. Prior to use, hazards must be assessed and a plan established that includes escape routes, when felling trees, and control site access. A safety observer should be used where possible. In addition to, or in replacement of, standard PPE, the operator must ensure that the following PPE is worn at all times when operating the chainsaw:

a) chainsaw pants (chaps);

b) hearing protection (ear plugs or ear muffs);

c) protective eyewear;

d) safety helmet with full face visor for eye and face protection;

e) safety footwear; and

f) high grip gloves.

11.12 Explosive Powered Tools

No person must use an explosive powered tool unless accredited and licensed. Explosive powered tools need to be approved for use on Hydro Tasmania sites.

11.13 Hydraulic Spanner

The hydraulic spanner is a complex tool and as such has many inherent risks. These include high pressure oil, reaction points, heavy head units with ridged leads and a variety of attachments for different situations.

Workers must ensure they are competent and authorised by Hydro Tasmania to use the device. Ensure that the device is in a serviceable condition, the head unit is suitable and appropriate for the task being performed, the reaction point and alignment are suitable, and the hydraulic spanner checklist is used.

Authorisation recognises prior learning and, where applicable, formal assessment and training by a Hydro Tasmania representative. This authorisation must be recorded in the person's passport and also in the PTW authorisation register. Initial training will include both a theory and practical assessment. Reauthorisation will require evidence of competent hydraulic spanner work and proof to support competence within any two-year period. Refresher training and written assessment must be completed every two years.

The people physically undertaking the work must either be directly supervised by an authorised person or be assessed as competent for the particular work setup by an authorised person immediately prior to work beginning.

Considerations include:

a) minimum requirements for PPE:
   I. safety helmet with full face visor;
   II. gloves;
   III. overalls; and
   IV. safety footwear.

b) the hydraulic spanner is to be operated by a minimum of two experienced workers who are assessed by an authorised person as competent in the use of the hydraulic equipment in the specific work setup before beginning;

c) wherever practicable, the hydraulic pump operator should be in line of sight with the hydraulic head handler, and clear communication must be established;

d) operate the hydraulic spanner on the floor to check correct mechanical operation; set the correct pressure and check for oil leaks;

e) ensure torque (pressure setting) is known and applied to the specific head unit being used;

f) ensure only sockets or spanners that are approved and identified for hydraulic spanner use are used;

g) ensure the socket or spanner selected is the correct fit to the nut or bolt before applying pressure;

h) ensure all of the hydraulic fittings are of the correct pressure rating; and

i) use hydraulic spanner checklist or full details on hydraulic operation.

11.14 Welding

Electric shock from open-circuit voltages greater than 48 volts AC and 113 volts DC can be fatal. A welder can be exposed to these voltages when changing the electrode or when welding:

a) in damp or wet areas on concrete or wet ground;

b) in humid areas;

c) in conductive spaces such as penstocks and pipelines; and

d) on steel structures such as scaffolds and buildings.

All welders must have a voltage-reduction device (VRD) fitted. A VRD is built into or adapted to a welding machine. The VRD keeps the no-load voltage at the handpiece at low volts until welding is required. The VRD is activated by scratch and strike of the electrode when ready to weld or, in some configurations, by pressing a button on the handpiece, similar to using a MIG gun trigger.

The following safety precautions must be adhered to when welding:

a) DC welders are preferred rather than AC welders;

b) ensure the welding machines, welding cables and welding appliances are in good condition;

c) ensure the welding machines, welding cables and welding appliances have been regularly checked by a competent person and defective equipment is restored to a fit-for-purpose state prior to use;

d) wear appropriate PPE to avoid radiation burns;

e) use dry welding gloves;

f) wear dry approved clothing with no exposed steel cap boots;

g) use leather cushions, rubber matting, wooden duckboards or other means to insulate the welder from the conductive environment;

h) ensure leads and welding equipment are inspected prior to use, and all joints and connections are secure and insulated;

i) keep the work area clear of rubbish and leads; and

j) always use screens to protect people around you from welding flash.

11.15 Grit Blasting and Painting

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the High Pressure Spraying and Blasting.

The procedure is available for internal workers here: High Pressure Spraying and Blasting.

Or at the following location for those accessing the external portal: High Pressure Spraying and Blasting.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

11.15.1 Removal of Minor Quantities of Lead Based Paint

'Minor' removal is defined as less than 0.5 metres squared surface area. For the removal of minor quantities, the removal of minor quantities of lead-based paint checklist must be used. If unsure, assume that all painted surfaces contain lead. If possible, sample material to confirm. Contracted services should be engaged to remove larger quantities.

11.15.2 Removal of Lead Based Paint using Wet Scraping / Sanding Method

Wear respirator with P2 cartridge to protect self from dust and fumes during removal and clean-up. Limit the use of power grinder. Clear lead dust remaining on equipment or structures near paint removal area. Ensure personal hygiene – thoroughly wash hands and face after completing work tasks.

11.15.3 Managing Lead Based Paint Waste

Bag, seal, clearly label and store waste, including rags used for cleaning, in a temporary location until professional removal takes place.

For all lead-based paint work, an HSE waste management/disposal form must be completed and kept with the project documentation.

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12.0 Working at Heights

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Fall and Height Safety procedure.

The procedure is available for internal workers here: Fall and Height Safety procedure.

Or at the following location for those accessing the external portal: Fall and Height Safety procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

12.1 Working at Heights Risk Management

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Fall and Height Safety procedure.

The procedure is available for internal workers here: Fall and Height Safety procedure.

Or at the following location for those accessing the external portal: Fall and Height Safety procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

12.2 Rescue Plans

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Fall and Height Safety procedure and the Rescue Plan template.

These documents are available for internal workers here:
Fall and Height Safety procedure
Rescue Plan template

Or at the following locations for those accessing the external portal:
Fall and Height Safety procedure
Rescue Plan template

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

12.3 Training and Competency

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Fall and Height Safety procedure.

12.4 Overhead Work – Falling / Dropped Objects

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Fall and Height Safety procedure.

The procedure is available for internal workers here: Fall and Height Safety procedure.

Or at the following location for those accessing the external portal: Fall and Height Safety procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

12.5 Elevated Work Platform

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Fall and Height Safety procedure.

The procedure is available for internal workers here: Fall and Height Safety procedure.

Or at the following location for those accessing the external portal: Fall and Height Safety procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

12.5.1 Work Platform Access and Egress

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Fall and Height Safety procedure.

The procedure is available for internal workers here: Fall and Height Safety procedure.

Or at the following location for those accessing the external portal: Fall and Height Safety procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

12.5.2 Training and Competency

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Fall and Height Safety procedure.

The procedure is available for internal workers here: Fall and Height Safety procedure.

Or at the following location for those accessing the external portal: Fall and Height Safety procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

12.6 Workbox

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Fall and Height Safety procedure.

The procedure is available for internal workers here: Fall and Height Safety procedure.

Or at the following location for those accessing the external portal: Fall and Height Safety procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

12.7 Portable Ladders

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Fall and Height Safety procedure.

The procedure is available for internal workers here: Fall and Height Safety procedure.

Or at the following location for those accessing the external portal: Fall and Height Safety procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

12.8 Scaffolding

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Scaffolding procedure.

The procedure is available for internal workers here: Scaffolding procedure.

Or at the following location for those accessing the external portal: Scaffolding procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

12.9 Safe Walkways and Working Areas

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Fall and Height Safety procedure.

The procedure is available for internal workers here: Fall and Height Safety procedure.

Or at the following location for those accessing the external portal: Fall and Height Safety procedure.

The following login and password may be required:
Username: hydrocontractor
Password: $DsX0!gd7

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13.0 Electrical Safety

For the purpose of this section, a competent electrical worker is defined as a licensed electrical practitioner, a person holding a restricted electrical licence, or a person authorised under the electrical safety management system. Only competent and authorised electrical workers must work on electrical equipment.

The basic safety principle for low voltage (LV) work is that all low voltage electrical conductors or parts must be treated as live until the low voltage electrical conductors or parts are isolated and proved de-energised.

13.1 Apprentices and Trainees

An apprentice or trainee is not considered a competent electrical worker and requires direct or general supervision consistent with their level of competence. Further guidance on the suitable level of supervision for apprentices and trainees can be found on the Workplace Safe Tasmania website under Legislation and Codes.

13.2 Electrical Safety Management Scheme and Restricted Electrical Licence

In addition to electrical technicians holding an electrical practitioner licence, non-electrical workers may be covered by the electrical safety management scheme (ESMS).

The ESMS is specifically designed to cover non-electrical trades and allows for operation, removal from service (isolation), restoration and fault-finding processes on approved electrical equipment.

13.3 Competent Assistant

If there is a danger of accidental direct contact with exposed live low or high voltage conductors or exposed live parts of electrical equipment, then the worker must be accompanied at all times by a competent assistant.

The competent assistant must be trained in the work required to be performed and must have received, in the previous 12 months, training in:

a) resuscitation;

b) releasing a person from live LV electrical apparatus;

c) if appropriate, rescuing a person from a pole, structure or elevating work platform; and

d) if appropriate, rescuing a person from a confined space.

The competent assistant must remain within sight and calling distance of the person working on the electrical conductors or parts.

If it should be necessary for the competent assistant to leave the vicinity of the work temporarily, the person working on the electrical conductors or parts must withdraw so there is no danger of accidental direct contact with exposed live electric lines or exposed live parts of electrical equipment.

13.4 Work Planning

All work that is to be carried out on or in close proximity to exposed live low voltage electric lines and equipment must be authorised and planned in advance.

Before work begins, each worker to be engaged in the work must ensure that:

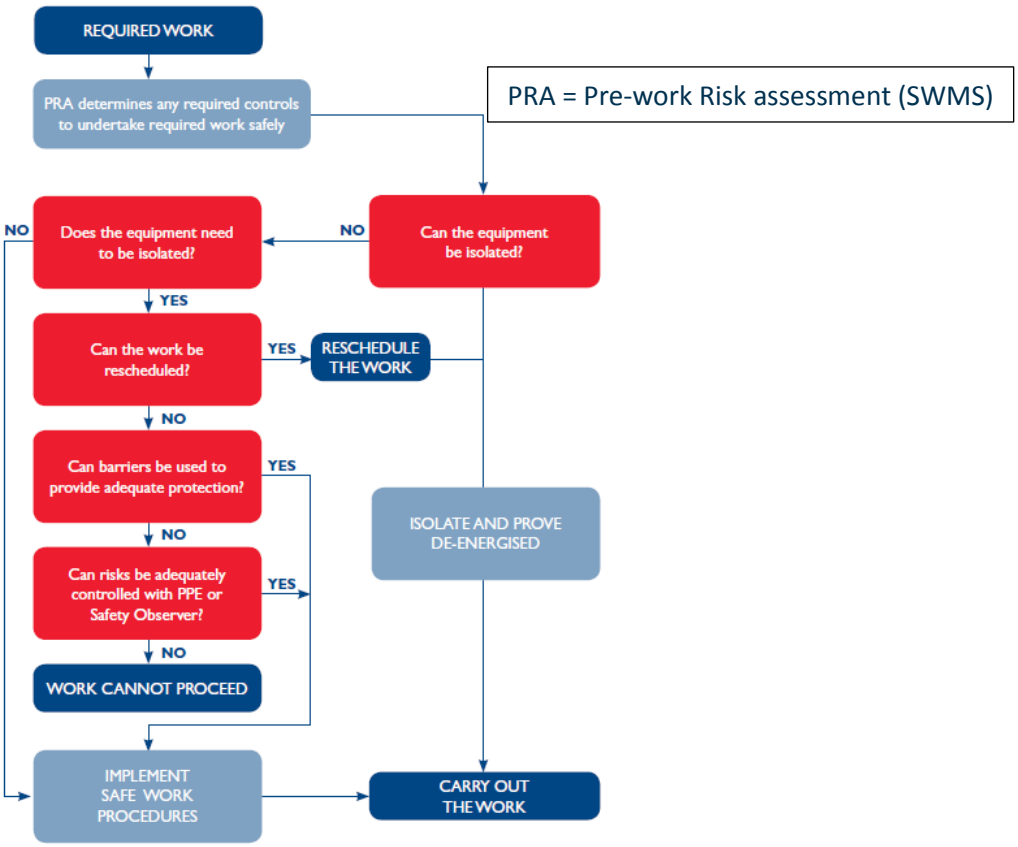
a) they have a complete understanding of the requirements of the task – if in doubt, ask;

b) everything required for the work, including all necessary materials, tools and protective devices, is on site and ready for use;

c) all other members of the work party are also well prepared in respect of each of the requirements in paragraphs (a) and (b) above; and

d) a safe work method statement and job hazard analysis is completed to identify the appropriate control measures to be applied (refer to HSEP0301 Hazard Identification and Risk Management

Low Voltage Risk Assessment Process



13.5 De-energised Low Voltage Electrical Lines and Electrical Equipment

Before starting work on or near low voltage electrical conductors or parts, an authorised person must have carried out all of the following steps:

a) positively identify the electrical conductors or parts to be worked on;

b) isolated the electrical conductors or parts from all possible sources of supply and secured the isolation (refer to isolation section); and

c) proved that the electrical conductors or parts are de-energised;

If necessary, isolation barriers may be required to guard against inadvertent contact with electrical conductors or parts.

In some unusual situations, low voltage electrical conductors or parts may also need to be earthed and short circuited using approved equipment.

Note: All electrical conductors and parts, including neutral and earthing conductors, must be treated as energised until proven de-energised.

13.5.1 Proving Low Voltage Electrical Conductors or Parts are De-energised

Approved test equipment must be used to prove that low voltage electrical conductors or parts are de-energised.

When voltage testers are used to prove de-energisation, they must be tested for correct operation immediately before use and again immediately after use, particularly if the test result indicates zero voltage, to confirm that the instrument is still working correctly.

The use of testers that detect an electric field surrounding an energised conductor are not suitable for cables that are surrounded by a metallic screen, cables carrying direct current and in similar circumstances.

Any voltage tests used to prove de-energisation must be conducted in the following sequence:

STEP 1 test the voltage tester on a known voltage source for correct operation;

STEP 2 test between all conductors and a known earth;

STEP 3 test between all conductors; and

STEP 4 retest the voltage tester on a known voltage source for correct operation.

Where a known voltage source is unavailable, a proving device should be used. This device further reduces risk of shock and arc flash by removing unnecessary exposure to a potentially hazardous electrical environment while verifying the functionality of test tools before and after absence or presence of voltage is checked.

If regular calibration checks are required, personnel must ensure that the test equipment check date is not overdue. The test equipment must be suitable for the voltages being tested.

13.5.2 Identifying Low Voltage Cables

Cable must not be worked on unless it has been positively identified at the worksite. Cable must be identified by:

a) being visually traced from the point of isolation to the worksite and, where possible, visual tracing must be independently verified by another worker;

b) live cables may be identified by using equipment such as square-wave signal generators and detectors; and

c) cable ends that have been proved to be de-energised may be identified by approved methods with a Megger or resistor.

13.6 Testing of Low Voltage Switchgear Busbars

Multimeters or other portable equipment must not be used directly to indicate or measure voltage on live, high capacity, low voltage busbars or their direct connections unless approved fused leads are used that are in accordance with the manufacturer's code of use and the correct current or voltage fuses are used.

13.7 Covering of Electric Lines and Earthed Metal Work

Where work is being carried out on, or within reach of, exposed live electric parts, which form part of low voltage switchboards, control panels and similar installations, approved insulating gloves, insulating mats, covers and sleeving must be applied where existing control measures do not reduce the risk as far as reasonable practicable.

Where use of approved insulating gloves, covering with insulating mats and sleeves is not practical and the risk remains high, work must not continue until a formal risk assessment is completed. Personnel are required to contact their immediate supervisor.

13.8 Working on or in Close Proximity to Live Low Voltage Electrical Conductors or Parts

Wherever practicable, work on or in close proximity to live low voltage electrical conductors or parts must be carried out while they are de-energised. Where it is not practical to carry out the work de-energised, the work must be planned as outlined in Section 26.4 and consideration must be given as to whether the work can safely continue.

The manager or delegate responsible for the electrical work must ensure that a safe work method statement is in place for the scope of the work.

Where it is reasonably considered that the approved control measures applied do not reduce the risk to an acceptable level, personnel will not continue with the electrical work. Electrical work will only continue when control measures are applied that reduce the risk to an acceptable level. This may mean that electrical conductors or parts are to be isolated and that work is required to be rescheduled as a result. (e.g. an outage is to be arranged)

13.9 Working in Electrical Environments

Clothing which complies with, but is not limited to, the following must be worn when conducting work on or near exposed energised electrical conductors:

a) properties not inferior to 185 gsm 100% cotton drill and which comply with AS 2919 – Industrial Clothing;

b) worn so that the body is covered from neck to wrist to ankle;

c) worn underneath clothing consisting of materials such as nylon/polyester (e.g. rain gear);

d) having non-metallic fasteners or fasteners protected by a layer of the same material as that of the garment on both the top and undersides; and

e) arc flash – see electrical safety section for specific PPE requirements.

13.10 Arc Flash

Arc flash and arc blast occur as a result of a low impedance fault on equipment failure while opening and closing through insulation failure or through accidental shorting during work. Low voltage arc flash consequences can be greater than those of high voltage, depending on the fault current levels and protection clearance times. Over current circuit protection might not operate and should not be relied on to safeguard the worker.

Arcs that are produced under these conditions have the energy to heat the air to temperatures as high as 19,000°C and vaporise metal in the equipment. The arc flash can cause severe burns to the face and eyes and injury through impact from flying debris or dislodged components. Heating air and vaporising of metal create a pressure wave (arc blast) that can damage hearing, cause concussion and other injuries. Flying metal parts are also a hazard.

Minimum PPE for electrical work where there may be a risk of arc flash includes:

a) fire resistant 185 gsm cotton clothing covering ankle-wrist-neck;

b) face shield, while switching locally; and

c) insulated gloves of the appropriate rating (HV or LV).

Where specific risks are identified, the level of PPE must include flame-resistant clothing and a hood designed for arc flash protection – Refer to HT 'Electrical Equipment Arc Flash Hazard Guidelines' GG-AM-112.

a) local switching or racking of HV metal clad switchgear; and

b) where equipment is marked as a result of an arc flash study.

Note: Exposed jewellery or adornment must not be worn when working on or in close proximity to exposed live low voltage electrical conductors or parts.

13.11 Live Low Voltage Work

Where practical, all sources of supply within an enclosure should be isolated to provide an electrically safe environment for work. Where this is not practical, measures must be taken to prevent inadvertent contact with exposed live electrical conductors or parts.

Live work must not be undertaken without a documented risk assessment approved by a manager or delegate.

Generally, live electrical work is deemed an unacceptable practice. The only exception is when the electrical work is necessary in the interests of safety and the risk of harm would be greater if the circuits and equipment were de-energised before the work started. In this situation, the work must be carried out in accordance with AS 4836 as a minimum with approved control measures.

Note: Work on or near low voltage exposed energised conductors or live conductive parts' does not apply if the uninsulated and energised part is safely and securely shielded by design, or segregated and protected with barricades or insulated shrouding or insulating material to prevent inadvertent or direct contact.

13.12 Risk Controls for Live Work

Risks associated with the electrical work, including the presence of adjacent energised circuits and equipment, must be assessed with all necessary control measures established prior to starting work. The following control measures should be used as a minimum to ensure the work is carried out safely:

a) positively identify the circuits and equipment to be worked on and the appropriate sources of power supply;

b) de-energise the circuits and equipment and isolate them from all sources of supply;

c) ensure the supply remains isolated by locking off and/or tagging the isolation point;

d) test to prove low voltage electrical conductors or parts are de-energised;

e) insulate or segregate any part of the installation that remains energised to eliminate or control the risk of inadvertent contact or flashovers;

f) use appropriate clothing and PPE;

g) provide workers with adequate information, instruction, training and supervision regarding the risk control measures to be implemented;

h) use a competent safety observer when both the following apply:

   I. the electrical work is necessary in the interests of safety and the risk of harm would be greater if the circuits and equipment were de-energised before the work commenced;

   II. a risk assessment undertaken before electrical testing confirms that a safety observer is required; and

   III. when leaving unfinished work, ensure that it does not present a hazard to others at the workplace, and clearly communicate and sign its condition.

Note: Testing high voltage equipment to prove it is de-energised must only be performed by an authorised person.

13.13 Removing Redundant Cables (Cable or Wire Cutting)

Cutting cables or wires during removal is a hazardous activity and must only be undertaken by a competent or authorised electrical worker after an appropriate risk assessment. This should include the following actions:

a) barrier-off any equipment, terminals, cables or wires not covered by the PTW;

b) ensure both ends of the cable/wire can be identified; and

c) prove dead by testing for AC and DC voltages and currents (use tong tester where appropriate).

13.14 Batteries

When working on batteries and DC systems, there are risks of explosion from flammable gases, chemical burns and arc flash. The following precautions must be taken:

a) read the operations and maintenance manual for safety directions;

b) read the SDS for the battery type and implement the safety and emergency procedures;

c) do not do hot work;

d) provide access to eye wash facilities where required; and

e) use PPE where required because of arc flash.

If handling battery electrolytes, wear rubber apron, gloves and goggles as per SDS

13.14.1 Storage and Disposal

The optimum storage conditions for batteries depend on the active chemicals used in the cells. During storage, the cells are subject to both self-discharge and possible decomposition of the chemical contents. Over time, solvents in the electrolyte may permeate through the seals, causing the electrolyte to dry out and lose its effectiveness. In all cases, heat accelerates these processes and it is wise to store the cells in a cool, benign environment to maximise their shelf life. Information on storage handling and use can be found on the Safety Data Sheet for the type of battery used.

A designated area and/or vessel must be used to store unused or used batteries. Used batteries must be separated by a gap or non-conductive material and in stored in a cool and dry environment. Exposed battery terminals likely to be bridged must be covered to prevent the risk of an arc flash and subsequent injury or fire.

Batteries are made up of heavy metals and other toxic elements, including nickel, cadmium, alkaline, mercury, nickel metal hydride, and lead acid. It is these elements that can threaten the environment if not properly discarded and/or recycled. Hydro Tasmania's preferred supplier for waste management should be used to dispose of stockpiled batteries.

13.15 Electric Shock

Hydro Tasmania workers experiencing an electrical shock must receive a medical examination. This applies to all Hydro Tasmania sites. (Refer electric shock procedure.)

If it can competently be determined without doubt that the shock was a static electric shock or an extra low voltage shock (<50 volts AC or <120 volts DC), a medical examination is not required. If in doubt as to the nature and severity of an electric shock, a medical examination must be undergone.

13.16 Working in the Vicinity of High Voltage

Any worker engaged to work in the vicinity of high voltage (HV) equipment must be as a minimum trained as an instructed person (IP) in Hydro Tasmania's PTW and isolation procedures. A PTW must be issued when working near exposed live electrical parts any one of the following categories:

a) work undertaken by other than Hydro Tasmania workers, e.g. contract vegetation control;

b) work that is a non-routine activity not defined as part of the maintenance program;

c) work that requires mobile plant, e.g. vehicles, cranes or work platforms;

d) work that requires isolation; and

e) work that breaches a specified safe approach distance (SAD) – see the table below.

Where the work is routine, has an approved SWMS, and is conducted by a competent Hydro Tasmania worker or contractor, a PTW may not be required.

Electrical equipment must never be assumed to be dead, de-energised or isolated, and unnecessary approach to electrical equipment or unnecessary contact with parts regarded as live must be avoided. Clearances must be maintained until the proven status of electrical equipment, application of the PTW and appropriate isolation and earthing have been undertaken.

Safe approach distance for working near exposed live electrical parts or lines (Note 1*) under Permit to Work conditions				
Voltage Range	**Instructed Person**			**Ordinary Person**
	Working	**Mobile Operating Plant**		**Working**
		With Safety Observer	**Without Safety Observer**	
Up to 1000 V	500 mm	1000 mm	3000 mm	2000 mm
Above 1000 V up to and including 22 kV	700 mm	1200 mm	3000 mm	2000 mm
Above 22 kV up to and including 110 kV	1000 mm	1800 mm	3000 mm	3000 mm
Above 110 kV up to and including 220 kV	1800 mm	2400 mm	6000 mm	4500 mm

Table 10: Safe Approach Distance to Uninsulated Conductors

Note 1: Further guidance on clearances can be found in the relevant codes and practices.
Note 2: See earthing of mobile plant below.

A safety observer must be posted to monitor and alert mobile plant operators of potential dangers or potential breaches to the unsafe approach to energised equipment in accordance with the safe approach distances described in the table above.

13.17 Earthing

Earthing is carried out to ensure that an effective discharge of electrical energy to the general mass of earth is maintained and also to maintain a zone of equipotential at the worksite for the reasons of personal safety.

Application and removal of approved operational earths is only to be carried out by the authorised issuing officer (AIO). Operational earths are to be applied prior to the issuing of a PTW and removed after the cancellation of the PTW.

Application and removal of appropriately rated portable/working earths can only be carried out when the PTW is in force. Portable/working earths may be applied by PIC or IP with approval of the AIO and authorised as part of a PTW.

13.17.1 Temporary Earthing Equipment

All operational portable earth leads must be of a highly visible colour. Portable earths must be inspected periodically in order to determine the integrity of the multiple strand cables and end fitting condition.

13.17.2 Operating Sticks

All operating sticks must have a current test label attached before use. Faulty operating sticks must be tagged and must not be used.

13.17.3 Inspection Prior to Use

All temporary earthing equipment must be inspected prior to use.

13.17.4 Earthing Mobile Plant

Trailing and portable working earths are required for mobile plant when they are in a switchyard, substation boundary or working in the vicinity of any high voltage electrical conductor, to safely direct electrical energy, induced voltage and accidental contact with live equipment to the facility's earth mat away from workers.

Portable earths or trailing earths must be considered fit for purpose and be designed to securely attach to plant. Earthing is required for mobile plant as soon as it is stationary and/or less than six metres away from energised equipment.

Portable/working earths must be applied by a PIC or IP as part of a PTW.

Trailing earths must be galvanised, mild steel chain of 10 mm size, which must be attached / clamped to the mobile plant or vehicle's chassis. At least 1000 mm is to contact the ground surface. Trailing earths must be applied by a PIC or IP as part of a PTW.

13.17.5 Earthing of Scaffold

Scaffolding that is erected in a switchyard or substation must be earthed via the use of an approved portable/working earth as soon as the first piece of scaffolding is in place.

13.18 Disconnecting or Connecting Conductors

Where conductors including earths are to be disconnected or connected within an isolated and earthed section, additional work earths, short circuits or bonds must be applied at the work site to ensure equipotential work area conditions are maintained.

13.19 Working on High Voltage Equipment

Work requiring access to high voltage equipment will be done in accordance with the isolation and PTW procedure.

All HV electrical work must be done between earthing devices. If, due to lack of space or design standard, it is not physically possible to apply earths to all sources of HV supply, no work must commence on isolated equipment until it has been positively identified and proven de-energised and earthed visibly either side of the work location.

A risk assessment considering the potential for the person to become part of the circuit must be undertaken and additional safety measures applied.

In addition to operational earthing requirements, work earths must be used during work to minimise the effect of electromagnetic and electrostatic induction through creating and maintaining an equipotential work environment.

13.20 Electrical Equipment Test and Tag

Notwithstanding the need to maintain and inspect electrical equipment on a regular basis, it does not negate the requirement of a worker to perform pre-use inspections on all electrical equipment before use and again after, before returning the equipment. Any electrical equipment that is not in test date or damaged must be removed from service by placing a 'hazardous or unusual condition' tag on the device.

The Work Health and Safety Regulations requires electrical equipment to be regularly inspected and tested by a competent person, if that equipment is supplied by electricity through a plug and socket arrangement and the equipment is used in an environment or where operating conditions will increase the risk of damage or reduce usage life expectancy. This includes exposure to environmental factors such as moisture, heat, vibration, mechanical damage, corrosive chemicals or dust.

While the requirements of the Regulations may initially indicate that an item such as a desktop computer that never leaves a clean, dry office would not require any testing, the Code of Practice for the Management of Electrical Risk indicates that guidance on the requirements for the inspection and testing of electrical equipment should be taken from AS/NZS 3760 – In-service safety inspection and testing of electrical equipment; and the manufacturer's recommendations. Table 4 of AS/NZS 3760 provides the following guidance for determining the appropriate inspection and testing timeframes (see below).

TABLE 4 – Indicative testing and inspection intervals for electrical equipment
(CAUTION: This page must be read in conjunction with AS/NZS 3760 as a whole, and particularly 2.1)

Type of environment and/or equipment	Interval between inspection and tests				
	Equipment including Class I equipment, Class II equipment, cord sets, cord extension sets and EPODs	Residual current devices (RCDs)			
		Push-button test – by user		Operating time and push-button test	
(a)	(b)	Portable (c)	Fixed (d)	Portable (e)	Fixed (f)
1 Factories, workshops, places of manufacture, assembly, maintenance or fabrication	6 months	Daily, or before every use, whichever is the longer	6 months	12 months	12 months
2 Environment where the equipment or **supply** flexible **cord** is subject to flexing in normal use OR is open to abuse OR is in a **hostile environment**	12 months	3 months	6 months	12 months	12 months
3 Environment where the equipment or **supply cord** is NOT subject to flexing in normal use and is NOT open to abuse and is NOT in a **hostile environment**	5 years	3 months	6 months	2 years	2 years

Electrical equipment in a power station or stores area under normal operating

Portable laptop charger cord

Desktop computer in an office

Hydro Tasmania considers compliance with the relevant Australian Standards to be the minimum standard that we should operate at where our own procedures do not specifically provide guidance. Therefore, electrical equipment that is connected via a plug and socket in any of our workplaces must be inspected and tested in accordance with the requirements of the Table.

13.20.1 Construction Site

A construction site is anywhere that Hydro Tasmania undertakes construction work. Construction work is any work carried out in connection with the construction, alteration, conversion, fitting-out, commissioning, renovation, repair, maintenance, refurbishment, demolition, decommissioning or dismantling of a structure. On Hydro Tasmania sites this is generally where we are undertaking new construction or major project work, but may also include certain routine maintenance activities that are not considered minor in nature.

The Work Health and Safety Regulations requires all electrical work and equipment to be done and used in accordance with the requirements of AS/NZS 3012 – Electrical installations on construction and demolition sites. Table 7 of this Standard provides the requirements for the periods of testing (see below). Essentially, all portable electrical equipment being used on a construction site must be inspected and tested every 3 months. Routine testing of residual current devices (RCD), portable or permanently installed, must record the trip time of the device.

PERIODIC VERIFICATION INTERVALS

1	2	3	4	5	6	7
Environment	**Transportable structures, Class I (earthed conductive parts) and Class II (doubled insulated) electrical equipment**		**Residual current devices (RCDs)**			
	Transportable structures[1], fixed and transportable equipment[2] and construction wiring[3] including switchboards	**Portable equipment[4]**	**Pushbutton test (by user)**		**Operating time (RCD tester)**	
			Portable[5]	**Non-portable fixed[6]**	**Portable[5,7]**	**Non-portable fixed[6]**
Construction and demolition sites in accordance with Clause 1.1	6 months	3 months	After connection to a socket or before connection of equipment, and at least once every day in use.	1 month	3 months	12 months

14.0 Travel and Transport

14.1 Domestic Travel

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the Domestic Travel standard and the Travel - Domestic and Overseas intranet page.

The procedure is available for internal workers here: Domestic Travel standard.

The relevant intranet page is available here: Travel - Domestic and Overseas

14.2 Overseas Travel

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the International Travel procedure and the Travel - Domestic and Overseas intranet page.

The procedure is available for internal workers here: International Travel procedure.

The relevant intranet page is available here: Travel - Domestic and Overseas

14.3 Aircraft Practices

This section has been removed as part of the staged removal of the Safe Work Practices Handbook and is superseded by the International Travel procedure and the Travel - Domestic and Overseas intranet page.

The procedure is available for internal workers here: International Travel procedure.

The relevant intranet page is available here: Travel - Domestic and Overseas

15.0 Appendix D: Definitions

Refer to HSEREF0801.2 – Work Safe Roles and HSE Glossary for abbreviations and definitions used in this document.

TERM	DESCRIPTON	COMMENTS
Aboriginal relic	Any object made or created by any of the original inhabitants of Australia or their descendants	*HSEP0912 – Cultural Heritage Management Procedure*
ACM	Asbestos Containing Material (ACM)	*HSEP0924 – Asbestos Management Procedure*
AF**ARP**	As Far As Reasonably Practical • AFARP is the objective of Risk Management; • it is judgemental based on Net Risk Benefit, Cost and Feasibility; • it is judged by management level assigned approval authority; • AFARP does not relate to any absolute criteria; • AFARP is normally reached when the next increment in Risk reduction does not justify the increment in cost; and • AFARP is often achieved by combination of a number of Control Measures	*HSEP0301 – Hazard Identification and Operational Risk Management Procedure*
Animal Research	Any procedure, test, experiment, inquiry or study on an animal in an area of teaching and research	*HSEP0202 - Animal Ethics Permit Procedure*
Aspect	Element of an organisational activity, product, and / or service that can interact with the health and safety of people or property or environment. **Note: A significant aspect is an aspect that has, or can have, a Significant Impact**	
Asset Owner (AO)	A person delegated by an Officer, who is in charge of a facility or Worksite; and is in control of the approval of all work (Permitted or otherwise) to be conducted at the facility or Worksite. The AO must ensure co-ordination of all work on their facility or Worksite	
Authorised Issuing Officer (AIO)	A Worker authorised by HT, who acts on behalf of the Asset Owner (AO) to issue Permits for approved work; and who is qualified, and authorised to give permission to commence work and accept the hand back of the Worksite	
Awareness	To be conscious that particular HSE Risks are associated with work performed and with the Workplace, and that certain Control Measures are required to manage those Risks and comply with HT's HSE Management System	
BAU	Business as Usual	
Bund	An embankment, wall, or temporary structure that may form part or the entire perimeter of a compound, where oil is present in a plant / equipment or stored in a container, for the purpose of containing any oil spillage so it is not released to the environment	
CEMP	Construction Environmental Management Plan	
CFO	Chief Finance Officer	

TERM	DESCRIPTON	COMMENTS
Chemicals	Substances that are used for designated tasks because of their Chemical properties, e.g. adhesives, paints, acids, detergents, solvents, pesticides. Chemicals include Dangerous Goods and Hazardous Substances, oils and fuels	
ChemAlert	A proprietary computer-based system on MyHydro that provides information about Chemicals and their management	
Communication	The flow of information between people	
Competency	The demonstrated ability to apply knowledge and skills consistently, acquired through education, training, experience or past performance deemed suitable to manage the potential HSE Risks associated with a work activity	
Competent Person	In relation to the doing of anything, means a person who has, through a combination of training, education, assessment and experience, demonstrated the ability to correctly and competently perform a specified task	
Compliance	Ensuring that the requirements of laws, regulations, industry codes and organisational standards are met	
Conformance	Ensuring the requirements of the HT's HSEMS are met, including responsibilities to ensure environmentally acceptable outcomes and meet legal compliance requirements	
Consequence	Consequence is a measure of severity. It is the result of exposure to a Hazard. **It is used to determine the Risk score through Risk Assessment processes**	*HSEP0301 – Hazard Identification and Operational Risk Management Procedure*
Conservation Management Plan (CMP)	A document written to guide the care of a place of cultural significance based on an understanding of its significance and prepared as part of *the Burra Charter process*, recording investigations and making recommendations	*HSEP0912 - Cultural Heritage Management Procedure*
Containment	The act of preventing the loss of material from a container or plant / equipment to the environment	
Contractor	Any individual or organisation, including Workers and technical specialists, who are not employees, but contribute to HT's service. Contractor refers to suppliers, consultants, or any organisation or person providing materials or services to HT and includes alliance and joint venture partners. **Note: Contractor also includes Entura staff in their capacity as service providers**	
Controlled (Residual) Risk	The level of Risk that remains after Control Measures have been applied	*HSEP0301 – Hazard Identification and Operational Risk Management Procedure*
Controlled Waste	Waste that has regulatory requirements regarding disposal	*HSEP0914 – Waste Management Procedure*
Critical Controls	Mitigation or Control Measures that are included in the EMP that relate to the management of High or Extreme Risks, or legal / licence requirements. Critical Controls trigger the requirement for auditing to be incorporated into the EMP	

TERM	DESCRIPTON	COMMENTS
Cultural Significance	Means aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting use, associations, meanings, records, related places and related objects. Places may have a range of values for different groups or individuals	*HSEP0912 - Cultural Heritage Management Procedure*
Dangerous Goods	Substances as described in the Australian Dangerous Goods Code or defined by the Chief Inspector, Dangerous Goods. Dangerous goods are classified on the basis of the immediate physical or Chemical effects that may impact on people, property or the environment and they include classes of Substances or articles that are explosive, flammable, corrosive, Chemically reactive, highly combustible, acutely toxic, radioactive or have infectious properties. The majority of Dangerous Goods also meet the Hazardous Substances criteria.	
Document	Information documented in paper, electronic or in photographic format and maintained for reference by Workers. This includes procedures, forms and templates. **Note: Documents (excluding Records) may be reviewed regularly and are considered as active documents**	*HSEP0801 - HSE Document and Records Management*
Documentation	A generic term referring to both *Documents* and *Records*	
DPIPWE	Department of Primary Industries, Parks, Wildlife and Environment	
Duty Holder	Any person who owes a work health and safety duty under the WHS Act including a person conducting a business or undertaking (PCBU), designer, manufacturer, importer, supplier, installer of products or plant used at work (upstream Duty Holders), an Officer and Workers. More than one person can concurrently have the same duty in which case the duty is shared. Duties cannot be transferred	*Guide to the Model Work Health and Safety Act*
Emergency Response Plan (ERP)	A document that describes how a specific Emergency at a particular Site will be combated. It includes specific information and detailed procedures or guidelines for responding to damaging events	
Employee	A person employed directly by The Organisation, and on HT's staff payroll, on a full-time permanent, full-time temporary, part-time or casual basis	
Engage	To use dialogue to create mutually understanding, trusting and cooperative relationships	
Environmental Harm	Any adverse effect on the environment (of whatever degree or duration) and includes an environmental nuisance	
Environmental Impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from activities, products or services of an organisation	
Environmental Impact Assessment (EIA)	The process of identifying, predicting, and evaluating the effects of activities on the environment. This is done to ensure that environmental considerations are explicitly addressed and incorporated into the decision making process. These provide input to management plans for the mitigation of adverse impacts	*HSEF0301.1 Environmental Impact Assessment and Management Plan*

TERM	DESCRIPTON	COMMENTS
Environmental Incident	An event, situation or activity arising, including from an Emergency, accident or malfunction, that has the potential to cause or has caused environmental harm or environmental nuisance e.g. oil spill	
Environmental Management Plan (EMP)	A plan detailing the management actions, including objectives and targets, that addresses the environmental issues raised by an Environmental Impact Assessment (EIA)	
Event	Something happening that has or could impact on the health and safety of people, property or the environment. An event includes an impact activity and is: • an activity, product, or service that could affect the environment and has not previously been identified and Risk / opportunity assessed e.g. project activities; • an activity, product, or service that has changed; • discovery of unsuitable, inadequate, or ineffective Control Measures; and • occurrence of an Incident, Near Miss, or complaint that requires corrective / preventive action An event can cause: • reactions e.g. to an Non-conformance or Incident; and • pro-actions e.g. planning for a change or a project	
Hazard	A Hazard is an energy source with the potential to cause harm. Examples are stored energy; electricity; gravity; chemical; moving objects. It is also a source with the potential to cause harm to persons, or loss to property or process, measured in terms of degrees of danger	
HEC	Hydro Electricity Commission, now HT	
Heritage Impact Assessment (HIA)	An assessment, together with supporting information, addressing: • why the item is of historic heritage significance; • what impact the proposed works will have on that significance; • what Control Measures are proposed to mitigate negative impacts; and • why more sympathetic solutions are not viable. A Heritage Impact Assessment is required for Sites of High or Very High value, or where a Conservation Management Plan (CMP) applies, and may be undertaken as part of an Environmental Impact Assessment	

TERM	DESCRIPTON	COMMENTS
High Risk Work	High Risk work is any work activity that involves any of the following activities or Risks: It involves: • demolition of a load-bearing structure, or structural alterations or repairs that require temporary support to prevent collapse; • the possible disturbance of Asbestos Containing Material (ACM); • the use of explosives; • the possibility of a person falling more than 2 metres; • tilt-up or precast concrete; • any movement of powered mobile plant on Site; • artificial extremes of temperature; • working in or near water or otherwise involves a Risk of drowning; and • diving It is carried out on or near: • a telecommunication tower; • a Confined Space; • a shaft or trench (depth greater than 1.5 m) or tunnel; • pressurised gas distribution mains; • piping Chemical, fuel or refrigerant lines; • energised electrical installations or services; • a road, railway, shipping lane or other traffic corridor; and • an area that may have a contaminated or flammable atmosphere (As per *regulation 291 of the Work Health and Safety Regulations 2012*) It also includes any work activity that is assessed as a High Risk using *HSEP0301 – Hazard Identification and Operational Risk Management Procedure*	*HSEP0924 – Asbestos Management Procedure; HSEP09037 – Seismic Survey Safety Procedure; HSEP0942 – Working at Heights Procedure HSEP0927 – Diving Operations Procedure; HSEP0941 – Water Safety for Small Vessels and Wading Procedure; HSEP0936 – Scientific Snorkelling Procedure; HSEP0926 – Confined Space Procedure; HSEP0925 – Concealed Services and Excavation Work Procedure; HSEP0921 – Oil and Chemical Management Procedure; HSEP0929 – Hot Work Procedure; and HSEP0301 – Hazard Identification and Operational Risk Management Procedure*
Historic Heritage Significance	Significance to any group or community in relation to the archaeological, architectural, cultural, historical, scientific, social or technical value of the place	*HSEP0912 - Cultural Heritage Management Procedure*
HSE	Health, Safety and Environment	
HSE Management System (HSEMS)	Health, Safety and Environmental Management System for HT. This system is based upon the management system standards *OHSAS18001 Health and Safety Standard* and *ISO14001:2014 Environmental Management System*	
HSE Objectives	The broad goals and overall aim, arising from the *OH&S Policy*, *Environmental Policy* and *Sustainability Code* that The Organisation, and particular specific Business Units, sets to achieve. These are quantified wherever possible	

TERM	DESCRIPTON	COMMENTS
HSE Plan	A document describing: • objectives and targets of The Organisation (at the strategic level) or particular Business Units (at operational and event levels); • how these are achieved; • how progress is monitored, measured, and reported; and • HSE Plans cover a specific period and may address an HSE Program. Longer-range Plans may be strategic in nature	
HSE Program	A strategic, longer-term, coordinated approach to the management of a particular HSE Risk or suite of Risks to ensure sustainable business outcomes	
HSE Review Panel	Consists of HSE representative(s) and other stakeholders (e.g. Subject Matter Experts SMEs)	
HSE Targets	Detailed and specific performance requirements, quantified and measurable whenever practicable that arise from HSE objectives. These targets need to be set and met in order to achieve HSE objectives	*Health, Safety, and Environment Improvement Plans*
HT	Hydro Tasmania	
Hydro Tasmania	HT – includes Momentum and Entura businesses	
Hydro Tasmania Group	The HT Group includes: Hydro Tasmania, Entura; and Momentum. Also referred to as “HT” in most HSE documentation	
IBRM	Integrated Business Risk Management	
Impact	Any change to the environment or the health and wellbeing of people, whether adverse or beneficial, wholly or partially resulting from activities, products, or services of The Organisation	

TERM	DESCRIPTON	COMMENTS
Impact Activity	Any works connected with HT's assets and activities, including those not previously performed or well understood, that have the potential for significant environmental impact e.g. Medium to Large scale operational, maintenance and construction works, including but not limited to: • work within the Tasmanian Wilderness World Heritage Area (TWWHA) or other reserved land; • construction of new or amended structures; • disturbance of vegetation, fauna or fauna habitat; • disturbing or covering ground surface; • modifying water levels or flows; • working on or crossing over land not owned by or vested in HT; • work involving use of oils, fuels or other Chemicals; • work involving management of waste materials including controlled wastes, stormwater & sewerage; • work involving emission, discharge, or release of anything to air, water, or land; • construction of new access and work areas; • work that is located over, on or below water; • work on items of moderate or greater heritage significance or covered by a Conservation Management Plan; and • works requiring the approval of a statutory authority / regulator	*HSEP0913.3 - Operation of HT's Mobile Washdown Trailer Procedure; HSEP0916 - Water Level Management Procedure; HSEP0921 – Oil and Chemical Management Procedure; HSEP0914 – Waste Management Procedure; HSEP0927 – Diving Operations Procedure; HSEP0941 – Water Safety for Small Vessels and wading Procedure; HSEP0936 – Scientific Snorkelling Procedure; HSEP0912 - Cultural Heritage Management Procedure; and HSEP0301 - Hazard Identification and Operational Risk Management Procedure*
Instructed Person	A Worker trained and competent in the application of the HT Permit to Work (PTW) and Isolation procedure	*HSEP0930 – Isolation Procedure;* and *HSEP0933 – Permit to Work Procedure*
ISO	International Organization for Standardisation	
ISO14001: 2014	International Standard – Environmental Management Systems – requirements with guidance for use	
Job Hazard Analysis (JHA)	The process and document used to assess and record Hazards, Risks, job steps and Control Measures to manage the identified Risks. This includes health safety and environmental Hazards	*HSEP0301 - Hazard Identification and Operational Risk Management Procedure;* and *HSEF0303.1 – JHA Template*
Job or Works Manager	A role taken on by a Worker responsible for the safe delivery of a scope of work	
Leadership Group (LG)	Comprising L1 and L2 Managers from each HT business area	General Managers Managing Directors Chief Finance Officer (CFO) Chief Operating Officer (COO)

TERM	DESCRIPTON	COMMENTS
Likelihood	Likelihood is a measure of probability. It is the chance that a particular Hazard will occur, usually within a defined time period. It is a factor used to determine the Risk score through Risk Assessment processes	*HSEP0301 – Hazard Identification and Operational Risk Management Procedure*
Line Manager	A Worker who holds authority in a vertical 'line' (chain of command) and to whom queries or approvals can be addressed e.g. a JHA or SWMS with a Controlled Risk Level of High requires approval by a Line Manager	
Major Change	Significant changes in operational procedures, processes, operating conditions, design & equipment	
Management Plan (MP)	A Plan detailing the management actions, including objectives and targets, that addresses the issues raised by a Risk Assessment	
Manager of the Health and Safety function	WHS & HSE Management Systems Manager (Assets and Infrastructure Operations Group)	
Safety Data Sheet (SDS)	Documents that provide the information necessary for the safe storage, transport and handling of Chemicals including Dangerous Goods and Hazardous Substances	
Minor Change	Insignificant change (i.e. spelling, formatting, correction in documents or changes to forms and checklists associated with procedures etc.)	
MOC – Management of Change	Management of Change (MOC) is the process used to review all proposed changes to materials, technology, equipment, procedures, Workers and facility operations before they are implemented to determine their effects on HSE vulnerabilities	*HSEP0802 – Management of Change Procedure*
Movable Cultural Heritage	Any non-living natural or manufactured object ranging from everyday items to technical or mechanical items. Such items may or may not be portable and may range from a single item to a group or part of a collection Items of Movable Cultural Heritage are items relevant to HT; either generated by, or relevant to, HT activities. They may include items acquired in the course of official duties, or items that represent major events, activities and initiatives, but are not those items required to be kept under *HT Information Management Policy*. The latter are often, but not limited to, paper based documents and records	*HSEG0912.3 – Movable Cultural Heritage Guideline*
Non-routine Activities	Can include: • projects; • corrective maintenance; and • new ventures For non-routine activities, HT may not have a very good understanding of the Risk and may not have documented Control Methods for the specific Risks at hand. (see Routine Activities definition below)	

TERM	DESCRIPTON	COMMENTS
Officer	An Officer is a person who makes decisions, or participates in making decisions, that affect the whole or a substantial part of a business or undertaking or has the capacity to significantly affect the financial standing of the business or undertaking. If a person is responsible only for implementing those decisions, they are not considered an Officer. An Officer of a PCBU must exercise due diligence to ensure that the PCBU complies with their duties under the WHS legislation. You are considered to be an officer if you are: an officer within the meaning of section 9 of the Commonwealth Corporations Act 2001; an officer of the Crown within the meaning of section 247 of the Work Health and Safety Act 2012; an officer of a public authority within the meaning of section 252 of the *Work Health and Safety Act 2012*	*Guide to the Model Work Health and Safety Act*
OHSAS18001	British Standards – Occupational Health & Safety Assurance Standard	
Oil	Hydrocarbon-based lubricants and insulating fluids. Oils include, but are not limited to: • Oil used because of its insulation or heat transfer properties for the immersion or filling of high voltage electrical equipment; • Hydraulic Oil; • Cable Oil; and • Lubricating Oil	
Operational Planning	Planning that occurs at the level in The Organisation where activities directly interact with the environment e.g. operation of a hydropower station	
Opportunity	An initiative leading to improvement of a process or situation that has the potential to impact on the environment or to impact on stakeholder relationships	
Person with Control or Management of the Workplace (PCMW)	A person delegated by the Officer, who is in charge of a facility or Worksite; and is in control of the approval of all work (Permitted or otherwise) to be conducted at the facility or Worksite. The PCMW must ensure coordination of all work on their facility or Worksite	
Person Conducting a Business or Undertaking (PCBU)	A PCBU conducts a business or undertaking alone or with others. The business or undertaking can operate for profit or not-for-profit. The definition of a PCBU focuses on the work arrangements and the relationships to carry out the work. Although employers are PCBUs, the term PCBU is much broader than this and may include a corporation or an association	*Guide to the Model Work Health and Safety Act*

TERM	DESCRIPTON	COMMENTS
Personal Protective Equipment (PPE)	Anything worn or used by a person to minimise Risk to the person's health and safety, including air supplied respitory equipment	*WHS Regulations 2012* and *HSES0934 – Personal Protective Equipment Standard*
Person In Charge (PIC)	A person trained and authorised to receive a Permit to Work (PTW), and to issue special permits for Confined Space, Concealed Services and Hot Work. They will understand and lead the work as defined in a PTW and be accountable for the safety of people; Instructed Persons (IP's); visitors or members of the public; and equipment within the scope of the work. An individual shall only assume the role of PIC where they have both the competence and confidence to fulfil the role. **Note: PIC training is required to undertake this role and reassessed every 2 years**	*HSEP0933 – Permit to Work Procedure*
Place (Cultural Heritage)	A location with associated cultural heritage significance, which includes, but is not limited to: • a Site, precinct or parcel of land; • any building or part of a building; • any shipwreck; • any item in or on, or historically or physically associated or connected with, a Site, precinct or parcel of land where the primary importance of the item derives in part from its association with that Site, precinct or parcel of land; and • any equipment, furniture, fittings and articles in or on, or historically or physically associated or connected with, any building or item	*HSEP0912 - Cultural Heritage Management Procedure*
Plant	Includes any machinery, equipment, appliance, container, implement or tool, and any component or anything fitted or connected to these things	*Code of Practice for Managing Plant in the Workplace*
Protected Object	An object that has been declared as protected under the *Aboriginal Relics Act 1975*	*HSEP0912 - Cultural Heritage Management Procedure*
Protected Site	An area of land declared by the relevant Minister, under the *Aboriginal Relics Act 1975* to ensure that where there is a relic on or in any land steps are taken to protect or preserve the relic	*HSEP0912 - Cultural Heritage Management Procedure*
Protected Species	Any plant or animal species that is protected under State or Commonwealth legislation including threatened species legislation. Plants and animals may be protected that are not at Risk of extinction, e.g. all native Australian marsupials and birds are protected species. There are different categories of protected species that provide different levels of protection	

TERM	DESCRIPTON	COMMENTS
Reasonably Practicable	In determining what is reasonably practicable, there is a requirement to weigh up all relevant matters including: • the likelihood of a Hazard or Risk occurring; • the degree of harm that might result if the Hazard or Risk occurred; • what the person concerned knows, or ought to reasonably know, about the Hazard or Risk and ways of eliminating or minimising it; • the availability of suitable ways to eliminate or minimise the Hazard or Risk; and • the cost of eliminating or minimising the Hazard or Risk. Costs may only be considered after assessing the extent of the Risk and the available ways of eliminating or minimising the Risk	*Guide to the Model Work Health and Safety Act*
Record	Document stating results achieved or providing evidence of activities performed. **Note: A Record is a type of Document that captures the story of something that has happened. Because it is a historical account, it does not change**	
Regulatory Requirements	The requirements of all binding laws, regulations, policies and plans established by federal, state or local government authorities, as interpreted through case law and as amended from time to time	
Resources	Any materials or items used in conducting business activities within HT	
Risk	Risk is the danger arising from the presence of a Hazard. It is the combination of the likelihood, or probability of occurrence, and the impact, resulting from exposure to a Hazard	*HSEP0301 - Hazard Identification and Operational Risk Management Procedure*
Risk Assessment	The overall process of Risk identification, analysis and evaluation and the application of Control Measures	*HSEP0301 - Hazard Identification and Operational Risk Management Procedure*
Risk Register	A Site specific Register containing a list of location based Hazards, Risk Levels, Control Measures and remedial actions to eliminate or minimise the overall level of safety, health and environmental Risk	*HSEP0301 - Hazard Identification and Operational Risk Management Procedure*
Routine Activities	Include: • preventative maintenance; • travel; • monitoring; and • Programmes For routine activities, HT should already have a good understanding of the Risks and knowledge of how to manage the Risk. These must be well documented. Databases such as, The *Workplace Hazard Register*, HT Web Map (GIS), HSE Strategic Risk Registers and HSE Program Risk Registers (see Non-routine Activities definition above)	

TERM	DESCRIPTON	COMMENTS
Safe Work Method Statement (SWMS)	Documented work methodology and Risk Management process required for all High Risk Work tasks	*HSEP0301 - Hazard Identification and Operational Risk Management Procedure; and HSEF0303.2 – SWMS Template*
Safety Observer	A Competent Person specifically instructed in their duties on each occasion. Any Safety Observer appointed SHALL be appropriately skilled in all respects of safety observation and be fully aware of the potential Risks associated with the work. Examples of where used: • Confined Space; • Hot Work; • Work in vicinity of H.V. and maintenance of Safe Approach Distances (SADs); and • Excavation / Concealed Services	
SEMP	Safety & Environmental Management Plan	
Shall	Mandatory requirement	
Should	Recommended requirement	
SMP	Safety Management Plan - is developed for a particular Workplace in response to the JHA or SWMS created for works to be performed at the Workplace	
SR Manager (SRM)	Sustainable Resources Manager	
Stakeholder	A Worker or external person or group of persons who affect and / or could be affected by The Organisation's activities, products or services and associated performance. Stakeholders do not include all those who may have knowledge of or views about The Organisation	
Strategic Planning	Management planning that occurs to help improve HSE performance, focus organisational effort, ensure common organisational goals, strategies, and methods, and provide the ability to assess and adjust The Organisation's direction in response to a changing environment. It is more focused on the longer term than operational planning	
Subject Matter Expert	Is a person who is an expert in a particular area or topic (i.e. technical expert)	
Take 5	A checklist used to determine Risk levels on the spot and for use for Low Risk work activities in lieu of a JHA	
The Organisation	This term is used when referring to all operations outlined within the scope of the HSE Management System. Effectively this is HT	
Threatened Species	Species of plants and animals whose survival is threatened that are protected under State or Commonwealth threatened species legislation (e.g. *Threatened Species Protection Act 1995*, *Environmental Protection & Biodiversity Conservation Act 1999*). This includes specific plant and / or animal populations or ecological communities (species assemblages) considered at Risk of extinction	*Threatened Species Protection Act 1995*; and *Environmental Protection & Biodiversity Conservation Act 1999*

TERM	DESCRIPTON	COMMENTS
Training	A suitably structured course or set of activities undertaken to provide knowledge and skills that are required to achieve competency	
Uncontrolled (Inherent) Risk	The level of Risk that exists before any Control Measures are put in place	*HSEP0301 - Hazard Identification and Operational Risk Management Procedure*
Waste	Primarily any material, whether solid, liquid or gas that is unwanted by and is of no further use to the owner. However, some waste may have further use to HT or to another party and may have disposal value. Wastes include, but are not limited to: • used oils and Chemical residues; • discharges to air, both point source and diffuse, licensed and unlicensed, controlled or escaped; • liquid effluent to waterways, sewer or stormwater; • contaminated stormwater or firewater runoff; • spills and used spill absorbents; • used drums, containers and other packaging; • contaminated protective clothing, redundant equipment and materials; • solid workshop wastes; • kitchen and other food wastes; and • office wastes	*HSEP0914 – Waste Management Procedure*
Waste Management	The management of wastes including all associated issues, such as waste reduction, storage, recycling, reuse, treatment, disposal, transport, costs, responsibilities, accountabilities and administration	*HSEP0914 – Waste Management Procedure*
Water Licence	The Special Licence granted to HT under s.307 and Schedule 4 Clause 7 of the *Water Management Act 1999* and the *associated Agreement* made pursuant to that Clause	*Water Management Act 1999;* and *associated Agreement*
Work Instructions	Work Instructions are written instructions for standardised tasks that outline the approved and preferred method of undertaking a task whilst emphasising ways to reduce any Risk(s) of harm to people, property, environment or production. These can include documents such as approved operational / environmental / safety procedures or plans, as well as routine maintenance or inspection instructions. Where a JHA, SWMS and / or EMP has been completed for a standard task (a repeated work activity that retains the same Risks), that assessment(s) may be used to generate a Work Instruction that describes how the work activity will be done. The Work Instruction may be used in place of other Risk Management documents only where the *work activity, Hazards and Controls have not changed*	
Worker	Any person who carries out work for a PCBU, including work as an employee, contractor, subcontractor (or an employee of a contractor or subcontractor), self-employed person, out-Worker, apprentice or trainee, work experience student, employee of a labour hire company placed with a 'host employer' and volunteers	*Guide to the Model Work Health and Safety Act*

TERM	DESCRIPTON	COMMENTS
Work Team Leader	An experienced worker who is deemed competent in the job scope, is responsible for writing the task JHA in consultation with the work group and is responsible for returning the completed JHA and work related documentation to the supervisor upon completion of the task.	*Particularly relevant to the JHA process*
Workplace	Any place where a Worker goes or is likely to be while work is carried out for a business or undertaking. This may include offices, factories, shops, construction Sites, vehicles, ships, aircraft or other mobile structures on land or water such as offshore units and platforms (that are not already covered under the Commonwealth's offshore WHS laws). A Workplace is one or more Worksites	*Guide to the Model Work Health and Safety Act*
Workplace Hazard and Risk Register	A Register containing a list of all known Hazards on a Site and Control Measures, identified through a Risk Assessment process	
Works or Job Manager	A role taken on by a Worker responsible for the safe delivery of a scope of work	
Worksite	Any working area under HT control where HT Workers undertake work. This could include Contractors	
WST	WorkSafe Tasmania	