



TRANSPOWER

# Site Specific Induction

Part A

# Preface

Transpower requires its assets to be maintained and tested to high standards of skill, professionalism and safety to ensure the satisfactory operation of the National Grid. To achieve the required quality standards, and to prevent injury to team members or other adverse events, the work must be carried out by individuals with competencies that are both appropriate and current.

## Acknowledgment

This document is the responsibility of Grid Skills. If you would like to make suggestions to improve this document, please contact us. We are happy to answer any questions you may have:

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## Disclaimer

This resource has been developed for training purposes only. It does not replace any existing health and safety requirement, or the standards and procedures of your company, Transpower or industry.

## Version

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# Contents

Using this resource	4
<b>Section 1: Understanding Policy</b>	<b>5</b>
Introduction	6
Working in a Transpower substation	7
Health and safety/keys to life	8
Site security	12
Emergency procedures	13
<b>Section 2: Managing Risk</b>	<b>15</b>
Minimum approach distance (MAD)	16
Worksite safety planning	17
Mobile risk slider	18
Drugs, alcohol and smoking policy	19
Personal protective equipment (PPE)	20
<b>Section 3: Work Management</b>	<b>23</b>
Incident reporting requirements	24
Ground disturbance (permit to dig)	25
Working environment	26
Test and tag electrical equipment	27
Chemicals and hazardous substances	28
Vehicle use and operation of mobile plant	29
House keeping	30

# Using this resource

## About this resource

Part A of this induction offers general substation entry and safe work information. Part B, when completed, will provide you with information specific to the substation you are entering.

## Warning and information boxes

You will come across the warning and information boxes listed below as you work through this booklet.



The Warning icon indicates information important for your safety.



The Reference icon indicates a reference to an external document or resource. Refer to these documents for more information on a topic.



# **Section 1:** **Understanding** **Policy**

# Introduction

Transpower puts safety first. Anyone working on, or around Transpower assets is required to take personal responsibility for their safety and the safety of others. This resource introduces the minimum requirements for working on Transpower assets in substations.



Fig. 1: Transpower put safety first

# Working in a Transpower substation

No one is permitted to enter a Transpower substation environment unsupervised without Substation Entry (SE2) competence. All short-term workers and sub-contractors working on a single site for a set duration are required to complete this Site Specific Induction (SSI) before commencing work. The SSI and safety briefing will be carried out by a person with a minimum of SE2 competency. The Site Supervisor is responsible for site security and safety, including management of hazards found in the substation environment.

You will need to work through this resource (Part A) and the person inducting you will complete the SSI Checklist (Part B) as they carry out the induction on site. Once you have completed this process, you will be able to work on site while under the close supervision of a competent person.

## Levels of supervision:

1. Direct and continuous.
2. Close supervision (6:1 ratio), within easy talking distance and in direct line of sight.
3. General supervision (as required).



**No one is permitted to enter a substation environment unsupervised without SE competence.**



# Health and safety/keys to life

Please read the following and ensure that you understand and comply with these requirements:

- You must understand and follow the Transpower Keys to Life.
- You have a personal responsibility to act safely to prevent harm to yourself or any other person while at work on Transpower sites.
- You must participate in identifying hazards in the workplace and contribute to the management of the associated risks.
- You must report any incidents and near misses immediately to the person supervising you.
- You must comply with all safety notices/signs.
- You must always observe safe working practices.
- You must ensure that you are familiar with the site, and the site emergency evacuation procedures.
- You are responsible for keeping your work area and the general workplace tidy and free from debris, rubbish and hazards.



**All Transpower staff and contractors are responsible for working safely and encouraging safe behaviours in others.**





**Transpower Keys to Life are our key safety expectations for Transpower staff and contractors. They are critical to individual safe work practices.**



#### **Know the Plan**

Fully understand the work plan and what your role is.

If you have questions, ask them! You need to be confident the work will be carried out safely.

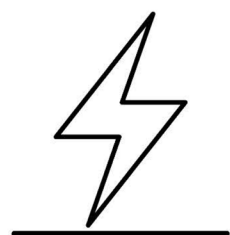
If things change, plan again.



#### **Identify Hazards**

Be involved in identifying and discussing hazards onsite before any work is started.

This is an ongoing process – keep looking for hazards so you stay safe, and discuss anything that concerns you with others.

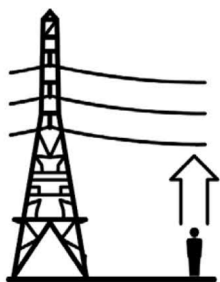


#### **Treat as live unless proven dead**

Always treat all electrical conductors as live until proven otherwise.

Test before touch!

Ensure you establish effective equipotential earthing and bonding zones to keep you and your team safe.



#### **Maintain Minimum Approach Distance**

You must not use plant or equipment within 4m of electrical conductors, unless you have written approval.

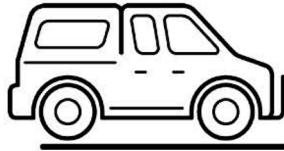
Be particularly careful when using mobile plant so that no part of it encroaches the MAD.

Keeping at least 4m away from high-voltage assets helps you stay safe.

**Switch On**  
HEALTH + SAFETY

Page One

**Transpower Keys to Life are our key safety expectations for Transpower staff and contractors. They are critical to individual safe work practices.**



#### **Operate vehicles safely**

You and your vehicle must be fit to drive safely, and the vehicle must be appropriate for the trip.

Plan your journey.

Drive to the conditions.

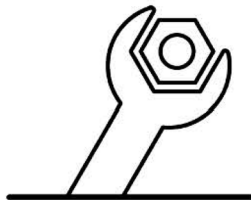


#### **Wear the right PPE**

Always wear the right PPE for the job and wear it correctly. PPE helps keep you safe.

Wear: flame-retardant body cover, safety boots, hard hats, eye protection. Wear additional PPE if it's appropriate for the job: gloves, hearing protection, a mask, harness and fall restraints.

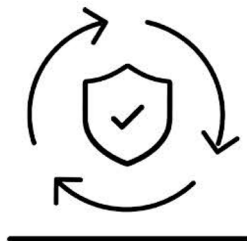
Don't wear: jewellery or anything conductive.



#### **Use the right equipment**

Ensure you have the right equipment and tools to complete the work.

If you don't have the right equipment and tools, stop work. Plan the work again using the right equipment and tools so that you're kept safe.



#### **Follow the procedure**

Know and follow the appropriate procedures for the work you are doing. If you have a question, ask it!

Procedures are designed so that the work can be carried out safely.

**Switch On**  
HEALTH + SAFETY

Page Two

# Site security

Transpower site security measures exist to protect the safety of the public, and our assets.

All access ways need to be secured, especially if vehicles are used or brought on site. The SE2 Competency Certificate holder and/or your supervisor will be responsible for the entry and exit process to the site, as well as to restricted areas such as the outdoor switchyard (ODS).

When you enter or exit this site there is a signing on/off process to follow, the person inducting you will show you how when going through the site checklist with you. This is important because in an emergency the site supervisor/emergency services will need to know who actually is on site.



Fig. 2: Outdoor switchyards are restricted areas

# Emergency procedures

In an emergency – stay calm.

Please make sure that you stay familiar with the emergency procedures. While you are working on site, make sure that you know the location of the nearest emergency exit point to where you are working, as well as the emergency assembly area.

Note: all emergency exits in the ODS can be opened without the need for a key. Therefore if something should happen to the person supervising you, you can still exit the area to raise the alarm if needed.

Emergency preparedness and response applies to all employees, contractors and visitors to the site. It covers the following:

- electric shock
- serious accident/serious harm
- medical emergency (e.g. heart attack)
- earthquake
- fire
- spill or uncontrolled release of a hazardous substance
- extreme weather event.



## Where can I go for further information?

Site specific Emergency Plans will be included in the Project - Health and Safety Management Plan.



**Stay familiar with the site Emergency Plan and know where your nearest exit gate is. In an emergency, you may not be able to use normal exit points if they are blocked.**

## Notes:



## **Section 2:** **Managing Risk**



# Minimum approach distance (MAD)

At high voltages, electricity can 'jump' to you if you get too close. Therefore, minimum approach distances (MAD) have been established to keep you out of harm's way. The distances change with operating voltages of equipment, and as there are many different voltages in a substation, your supervisor will identify the nearest live point(s) and inform you of the relevant MAD.

Always maintain at least FOUR (4) meters between you and any live conductors unless instructed otherwise by your supervisor. These distances apply to any part of your body or clothing and to anything in contact with you e.g. tools, ladders and scaffold poles. Your supervisor will ensure the correct MADs are maintained.



- Keep your hands below your shoulders.
- Use two people to carry long objects.
- MADs should be noted in the Worksite Safety Plan.



## Where can I go for further information?

- SM-EI 1.602 Minimum Approach Distances.
- SM-EI 2.1201 Minimum Approach Distances for employees near exposed live conductors.



Fig. 3: Maintain MAD from nearest live point, relevant to the voltage.

# Worksite safety planning

Worksite safety planning meetings (or Tailgates) are held before starting any work activity and as the work progresses throughout the day. These meetings are critical to ensure that all hazards associated with your work activities have been identified and that the control measures implemented are understood by everyone.

A Worksite Safety Plan (WSP) form is completed during the meeting. You will be required to sign the WSP to show you understand the work plan, are aware of the hazards the controls in place to prevent harm.

The meetings should focus on:

- the work that is about to be done
- hazard identification and risk management including controls measures
- coordinating with other work parties to maintain a safe working environment

Your contribution and participation in these meetings is important.



**The WSP is a living document and will need to be revisited if new hazards are identified during the work day.**



## **Where can I go for further information?**

Project - Health and Safety Plans will be included in the Project – identified hazards and risks controls. SM-EI:

- 1.110 - hazard and risk assessment and control
- 1.304 - worksite safety plan
- 1.301 - Control of entry

# Mobile risk slider

You and your workmates can also be hazards, so take time to think about and prompt each other:

- How do you feel?
- How is the team performing?
- Are you or your workmates tired?
- Are you aware of any late changes to the work plan?

The mobile risk slider may be carried out as part of the WSP and highlights the risks associated with 'human factors'.



**If you feel tired or if you are not alert, tell your Supervisor. Do not continue to work if you feel unsafe.**



## **Where can I go for further information?**

- TP.SS 06.25 Minimum requirements for Transpower Field work
- Project Health and Safety Management Plan.
- SM-EI 1.409 Fatigue management.

# Drugs, alcohol and smoking policy

## Drugs and alcohol

While you are on a Transpower site you must comply with Transpower drug and alcohol requirements.

You must report for work free from the influence of any drugs and alcohol.

Tell your supervisor if you are taking any prescription medication from a doctor.

**Please note Transpower reserves the right to:**

- conduct post-incident drug and alcohol testing
- test for drugs and alcohol where there has been justified cause
- conduct random testing as a condition of entry to site – this also applies to site visitors.

Anyone who is found or reasonably believed to be under the influence of alcohol or drugs will be removed from the worksite for additional testing and may be refused further entry to the site.



**Transpower maintains drug and alcohol free sites**

*Our workplace is*



*at all times*

## Smoking policy

Smoking is only permitted in designated areas.



**Where can I go for further information?**

- Project Health and Safety Management Plan Transpower Project Site Specific Rules.
- TP.SS 07.40 Station Security s.4, Part K.
- CP.CE.POP.003 TP Drug and Alcohol policy
- SM-EI 2.709 Cleaning solvents (other than water solutions).
- SM-EI 2.1113 Maintenance of batteries.

# Personal protective equipment (PPE)

PPE acts as the last line of defence in keeping you safe and uninjured. It is important to ensure that:

- the PPE is appropriate for the work
- you understand the correct PPE to be used in each work situation and how to wear it correctly



**PPE is mandatory on all sites, at all times.**



## **Where can I go for further information?**

- TP.HSW 01.02 Health and Safety Requirements for Transpower Work.
- TP.SS 06.25 Minimum requirements for Transpower field work.

# RIGHT GEAR RIGHT TIME

## MINIMUM PPE POLICY:

- FULL BODY OUTER LAYER FIRE RETARDANT COVER
- HIGH VISIBILITY VEST
- NATURAL FIBRE UNDERGARMENTS
- SAFETY FOOTWEAR
- PROTECTIVE EYEWEAR
- NO JEWELLERY
- HARD HAT
- PROTECTIVE GLOVES

## WHERE REQUIRED:

- HEARING PROTECTION
- OTHER PROTECTION AS NECESSARY

## WORK | PLAY



TRANSPOWER



*Keeping the energy flowing*

March 2011

Transpower New Zealand Ltd The National Grid

Fig. 4: Right gear, right time

## Notes:





## **Section 3: Work Management**

# Incident reporting requirements

All incidents and near misses must be reported to your supervisor immediately. The Project Manager/Transpower Representative or Site Supervisor will need to know as soon as possible after the event.

If the incident involves a serious harm injury requiring medical treatment or emergency services are called, Transpower must be informed immediately after arrangements are made for the injured person.

Your supervisor will also be responsible for ensuring that all incidents and near misses are formally recorded in Transpower's health and safety reporting system, Maximo HSE.

Reporting all incidents and near misses is vital to Transpower. Reporting incidents enables us to investigate them to prevent similar events. More importantly, reporting a near miss may prevent an injury to a colleague or another worker on site.

A positive reporting culture supports a safer work environment for everyone to go home safe.



**Report all incidents and near misses to your supervisor immediately.**



## **Where can I go for further information?**

- TP.SS.01.01 Reporting: by service providers, contractors and consultants for further information on reporting requirements.

# Ground disturbance (permit to dig)

**Always find out the whereabouts of underground and embedded services before starting work.**

Transpower substations are a minefield of underground services. Before you carry out ground disturbance of any kind be sure that the SE competency holder is aware of the activity and the required permits have been obtained.

**No excavations or drilling should be undertaken before:**

- the site has been inspected and all cables/services located and marked out
- site cable, line, and services diagrams and plans have been checked
- all work to be undertaken has been approved (via a Permit to dig process) for ground excavation/disturbance work.



**Ensure all excavations over 1m deep are shored to prevent a collapse on anyone working in the excavation.**

- barriers are erected to prevent anyone falling in exposed excavations

The person supervising you must be competent to action the 'Permit to Dig' procedure and implement the controls required.



**Even driving a stake into the ground is considered ground disturbance, and can be dangerous.**



**Where can I go for further information?**

- Project Health and Safety Management Plan.
- SM-EI 2.1204 Work in excavations.
- TP.SS 06.19 Managing Third Party "beforeUdig" enquiries relating to Transpower's underground power & fibre optic cables in public accessible areas
- TP.SS 06.56 Work authority procedure.

# Working environment

While on Transpower sites you may come across hazards in your working environment. Here are some examples of what to do.

## Damaged guard rails and fencing

Guard rails, fencing or barriers must be provided where there is potential for harm. Perimeters, exposed sides and ends of working platforms, and openings in floors and walls are examples of this. If you see a guard rail missing or damaged, fix it if possible. If not report it promptly to your supervisor– do not leave it for someone else to take the action.

## Uneven and slippery surfaces

One of the most common trip hazards comes from uneven surfaces, e.g. gravel, rock, concrete footings. Duct covers are another common hazard: they may be slippery when icy or wet. They are not to be used as a pathway.

## Falling objects

- Cordon off or use barriers to ensure that no one can enter an area where objects could fall and hit them.
- When working from a mobile elevated work platform (MEWP) or scaffolding, make sure toe boards are in place, especially around access ways.
- Do not walk under suspended loads.
- Keep out of drop zones.



**Take care on stairs and steps, always use the handrail where installed.**

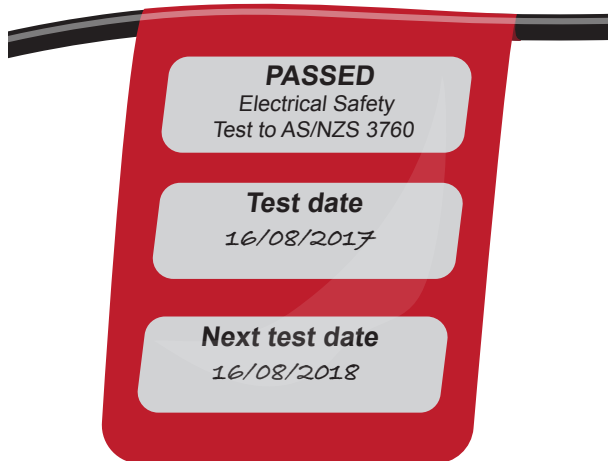


### Where can I go for further information?

- Project Health and Safety Plan.
- SM-EI 2.1205 Fencing of physical hazards.

# Test and tag electrical equipment

- To check the safety of portable electrical equipment, they are tested and tagged. Check electrical equipment before every use for visual signs of damage or faults, and make sure it has a current tag.
- Don't use if there is no tag or it is not current.
- Only use electrical equipment if you have been trained and are deemed competent to use it.
- Only use electrical equipment if you have been trained and are deemed competent to use it.
- Do not run leads where they can be crushed (doorways or around plant and equipment).
- Try and keep electrical leads out of wet areas if possible.
- Disconnect from power source before checking equipment.
- Powered tools and equipment must have proper guards in place when in use.



**When checking and maintaining electric and portable powered tools and equipment, make sure they have been isolated from their power source.**



## Where can I go for further information?

- SM-EI 1.601 Precautions with electrical equipment.
- SM-EI 2.1405 Hand-held electrical appliances.

# Chemicals and hazardous substances

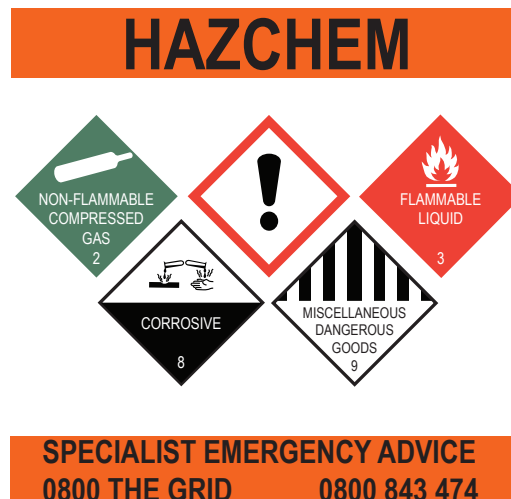
All chemicals and hazardous substances must have the Safety Data Sheet (SDS) available in the Site Register on site.

SDS detail the requirements for safe handling, storage and emergency procedures when working with the substance.

Any work involving asbestos, must be identified and carried out under the supervision of a person with the correct certificate of competence.

**You must:**

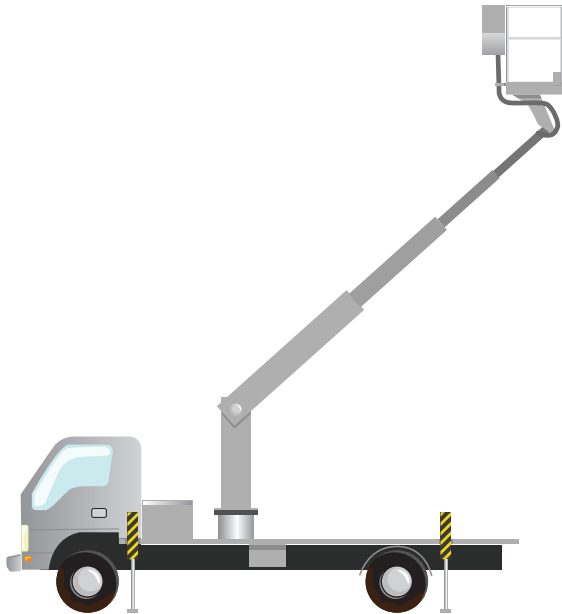
- Be deemed competent and capable of handling chemicals or hazardous substances if you have to use them or bring them on site.
- Understand and comply with the information on the SDS.
- Ensure that you are aware of any emergency plan requirements related to the chemical or hazardous substance.
- Ensure any chemicals or hazardous substances used on the project are stored in an approved place or manner.



**Where can I go for further information?**

- Project Health and Safety Management Plan.
- TP.SS 06.40 Hazardous substances inspections.
- SM-EI - 2.700 Potentially hazardous substances other than gases
- SM-EI - 2.800 - Toxic, explosive and asphyxiant gases
- SM-EI - 3.900 - Work on or near flammable gas installation
- SM-EI Part 3 Section 9 – Work on or near flammable gas installations.

# Vehicle use and operation of mobile plant



Transpower requires that all mobile plant and vehicles are operated in a safe and appropriate manner.

Drivers/operators must be competent to operate the equipment.

All plant movement in the yard will take place under the supervision of an appointed Safety Observer.

4m MAD applies to vehicles and mobile plant. When clearance will be less than FOUR (4) meters, a minimum approach request (MAR) process will be managed by your supervisor.

While on site, you may be asked to help secure loads and check for equipment stabilisation. Ensure that you take all precautions and always check for the safety of others working around you.



## Where can I go for further information?

- TP.HSW 01.02 Health and Safety Requirements for Transpower Work.

### Also refer to:

- SM-EI 1.602 Minimum approach distances.
- SM-EI 2.1201 Minimum approach distances for employees near exposed live conductors.
- SM-EI 3.703 Reduced minimum distances for certain employees near exposed live conductors.
- SM-EI 2.901 Motor Vehicles.
- SM-EI 2.905 Mobile plant & vehicles in the vicinity of live conductors.
- SM-EI 3.712 Mobile plant & vehicles in the vicinity of live conductors reduced distances.



# House keeping

While you are working on a Transpower site, you are expected to keep the work site clean and tidy.

- Do not leave any materials lying around and unsecured where they could blow into substation equipment especially when strong winds are present. This could cause a flashover.
- Objects, cables and other loose materials all have the potential to become tripping hazards, so make sure you maintain a tidy work area.
- If you are unpacking anything, flatten the material to prevent someone stepping on it and remove any nails. All packing material should be kept tidy and removed from site as soon as practicable.
- Cell phones are not to be used while in the ODS or restricted areas unless prior approval has been gained.
- If your work will create dust consider the effects of drift, such as potential contamination of sensitive equipment.



**A tidy site is a safe site – take personal responsibility.**



**Where can I go for further information?**

- Project Health and Safety Management Plan.

# Notes:



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