

# Approved Tasks for the Application of Safe Approach Distance – Special

This guideline has been developed by the Victorian Electricity Supply Industry (VESI) Work Practice Committee working group

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## 1. Introduction

In 2012 the Victorian Code of Practice on electrical safety for work on or near high voltage electrical apparatus (The Blue Book) introduced a change to the rules for Safe Approach Distance (SAD) – Special. The changes to these rules are significant and include an increase to the exclusion zone from 300mm to 450mm along with mandating to apply SAD Special only to “approved tasks”.

The Electrical Safety Rules for the VESI Distribution Networks (the Green Book) adopted the definition of the Blue Book with inclusion of the increased distance and the reference to “approved tasks”.

The Green Book committee engaged the VESI Work Practice committee to structure a non-exhaustive list of approved tasks that were common across the VESI Distribution Networks where the use of SAD - Special may be required.

VESI Work Practice representatives have compiled a range of tasks and completed a risk assessment identifying the known electrical hazards and controls associated with those tasks.

It was identified that SAD - Special can be used on most VESI structures, however a critical aspect is that there may be structures on the VESI Distribution Networks where a legacy or non-standard construction exists. To address these instances this guideline has been created to ensure a risk based assessment is undertaken prior to employing SAD – Special.

## 2. Purpose

The purpose of this guideline is to enable the application of SAD Special for safe access, operation or performance of approved tasks by an electrical trade person who holds an authority to receive EAPs, SFT or Operate HV. This guideline is for use by Authorised persons working on a VESI Distribution Network under the control of a VESI Distribution Network Operator.

## 3. Scope

This guideline lists approved tasks where SAD Special may be used after an on-site Job Safety Analysis (JSA) has been completed and reference made to this guideline.

Apprentices shall not apply the use SAD – Special.

Apprentices shall not perform the duty of a Safety Observer for tasks requiring SAD – Special unless in accordance with the relevant VESI Supervision Guidelines.

Distribution Network operators may specify additional tasks or place further restrictions and additional requirements surrounding SAD – Special, which shall be confirmed prior to undertaking the task.

## 4. Responsibilities

### **Supervisors/Planners**

Plan works within proximity to HV in accordance with the safe work principles contained in the Green Book.

### **Field Staff**

Follow this work instruction to assess if SAD - Special can be performed.

## 5. Health, Safety and Environment (HS&E) Standards

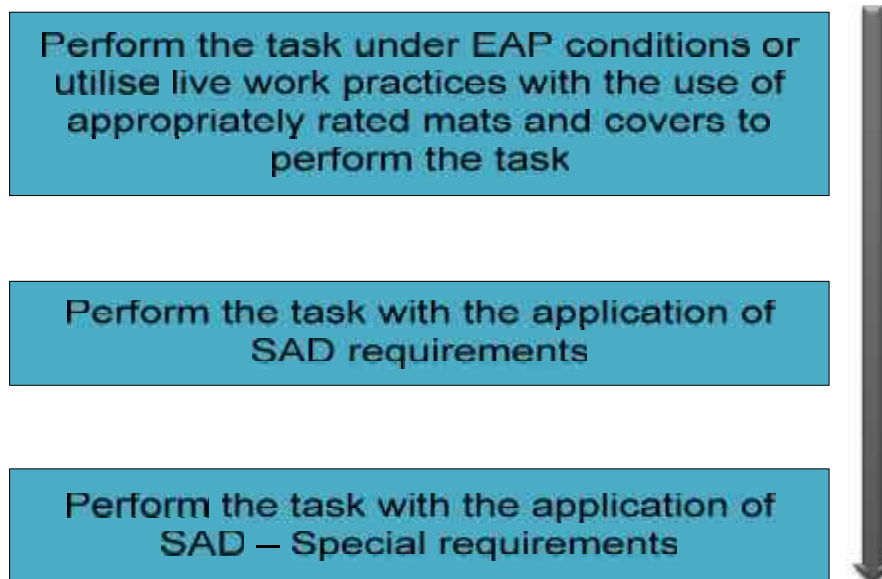
### Intent

The intent of this guideline is to ensure that all HS&E risks to personnel undertaking work within proximity of live electrical apparatus have been addressed and eliminated, or controls put in place to mitigate the risk of exposure.

A Safe Work Method Statement (SWMS) shall be utilised by field personnel and the appropriate controls implemented. A JSA shall be undertaken to identify and implement controls for any site specific hazards.

### Hierarchy of control

When work is planned and/or when the task is to be undertaken the highest level of risk control that is reasonably practicable shall be implemented. The following hierarchy of controls shall be utilised.



### Safe Approach Distance – Special (Green Book extract)

SAD - Special is the minimum SAD beyond the reach of any part of the person's body or any conducting or unapproved object touching any part of the person's body.

SAD - Special shall only be considered where SAD normal, EAP or live work techniques are deemed impracticable and shall be used only by Authorised Persons performing approved tasks.

Prior to applying SAD - Special, pre-planning assessments (including work crew onsite JSA) shall be conducted and documented.

The SAD - Special for Authorised Persons are detailed in Table 1, column 4 (below).

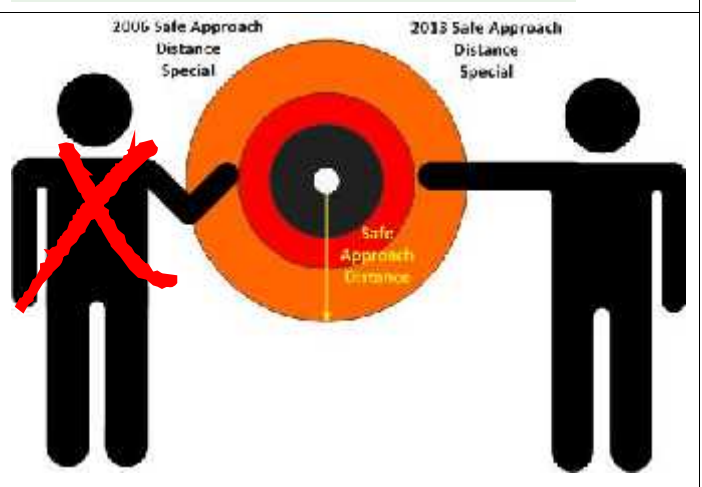
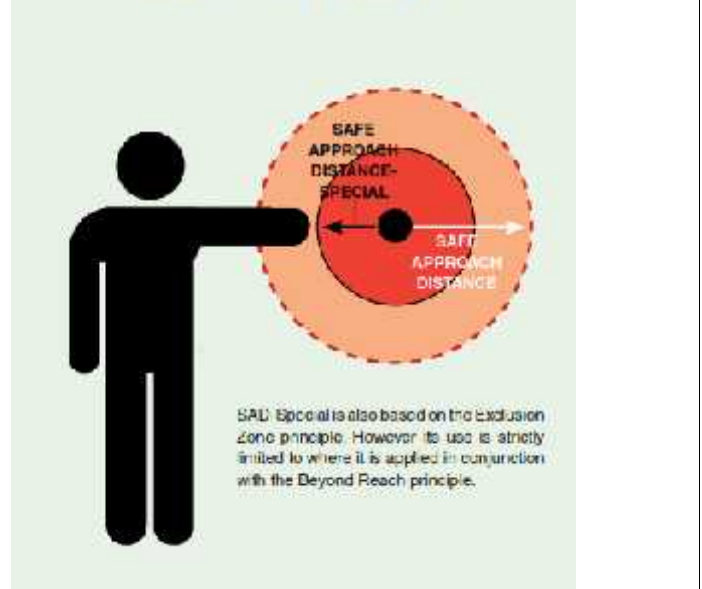
Tasks requiring the use of SAD - Special shall only be undertaken by a person who holds an authority to receive EAPs or SFT or an Authorised HV Operator in conjunction with the following control measures:

- Positioning of the worker, see figure (below), to effectively control the risk of the specified distance being infringed by the use of the Beyond Reach principle. This includes any unapproved object or tool being held by the worker.
- Safety Observers shall be used to monitor the work activities.
- Minimise the exposure at the SAD-Special.
- Addressing adverse impact of external influences on plant and equipment e.g. traffic, boom movement, footing.
- Addressing adverse impact of weather and environmental conditions (e.g. rain, lightning, wind, light, sag or sway of conductors).
- The work party shall consider the suppression of the auto-re-close function as part of the pre-work planning.

**TABLE 1 – PERSONAL CLEARANCES**  
Safe Approach Distance for Ordinary, Instructed or Authorised Persons

All Safe Approach Distances apply to exposed conductors unless otherwise indicated	Ordinary Persons	Safe Approach Distance for Instructed Persons & Authorised Persons	Safe Approach Distance for Authorised Persons Only Refer Clause 2.3.3
Nominal Phase to Phase AC Voltage - kV	Safe Approach Distance - mm	Safe Approach Distance - mm	Safe Approach Distance - mm
LV including communications catenary connected to LV neutrals	1500	Instructed Persons – No contact Authorised Persons – Insulated contact only	
Insulated LV	100		
Earthed metallic screened HV insulated conductor	100	Earthed metallic screened conductor – Contact only	
Unscreened insulated HV conductor up to and including 66	2000	Unscreened conductor treat as exposed conductor	
HV up to and including 22	2000	700	400
33	2000	700	500
50	2000	700	700
66	2000	900	700
110	3000	1000	
132	3000	1200	
220	4000	1700	
275	5000	2300	
330	6000	2700	
400	6000	3300	
500	6000	3600	
Nominal pole to earth DC voltage (kV)			
15 or less	1500	Instructed Persons – No contact Authorised Persons – Insulated contact only	
4+ 25	2000	700	
4+ 85	3000	1000	
4+ 150	3000	1200	
4+ 270	4500	1800	
4+ 350	5000	2500	
4+ 400	6000	2900	

FIGURE 2 – Application of SAD-Special



## 6. Procedure, Process, Actions

The following controls describe the minimum to be applied for the application of SAD-Special by authorised persons:

- Assessment of the task using a JSA, SWMS, this Guideline and/or organisational procedures that meet these requirements
- The work party shall consider the suppression of the auto-reclose function as part of the pre-work planning
- The application of the correct PPE
- Holding an authority for either an EAP, SFT or HV Electrical Operator
- Use of insulated or non-conductive equipment
- Safety Observers shall be used to monitor the work activities.
- Positioning of the worker, to effectively control the risk of the specified distance being infringed by the use of the Beyond Reach principle. This includes any unapproved object or tool being held by the worker.

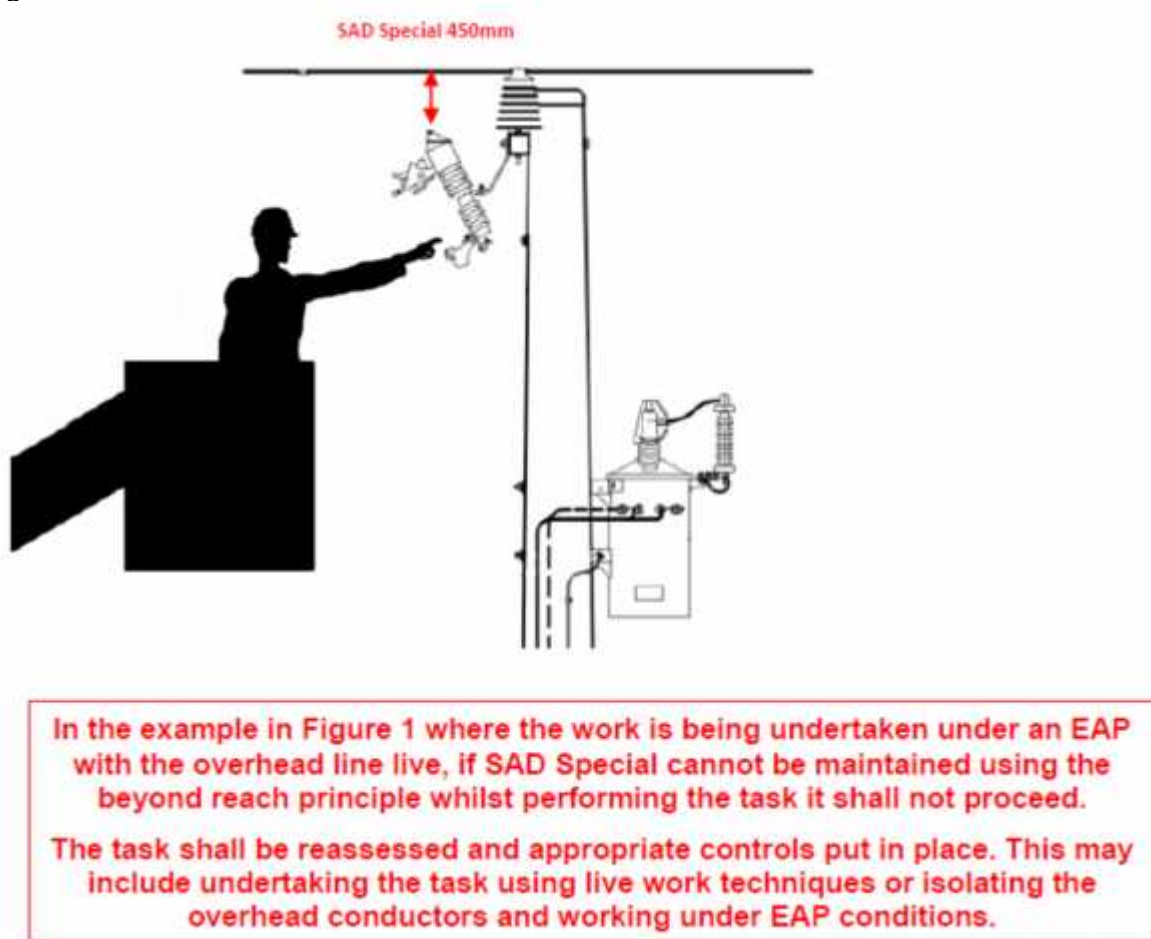
**The following tasks are approved to be undertaken using SAD – Special by VESI Authorised personnel after applying the decision making process within this document.**

**Distribution Network operators may require additional controls for the tasks which shall be confirmed with the respective Work Practice representative prior to commencement.**

Some of these tasks require the issue of an EAP and are performed near or adjacent to live HV Apparatus, e.g. replacing HV fuse units with overhead conductors alive.

- Attaching and securing ladder head ropes and attaching a harness to Substation poles in proximity to live HV apparatus
- Carry out a side mounted Tap Change on a pole type transformer
- Install, Maintain, Remove or Replace HV droppers
- Install, Maintain, Remove or Replace HV Fuse Units
- Install, Maintain, Remove or Replace HV bridging insulator and/or assembly
- Hanging Tee Off conductor/s on a HV Tee off crossarm
- Install, Maintain, Remove or Replace Tee off or subsidiary crossarms
- Install, Maintain, Remove or Replace SWER HV Fuse Unit
- Install, Maintain, Remove or Replace Public lighting bracket under or adjacent to HV live apparatus
- Testing the gas pressure or topping up the gas on an ACR
- Topping oil up on transformers with conservator tanks

Figure 1



### Zone Substation / Terminal Station activities

Within some substation environments HV apparatus exists where normal SAD exclusion zone principles would be infringed with the electrical operation of the equipment.

Within these environments there are areas/apparatus barricaded by physical barriers where there is a potential to expose a person to an electrical risk.

Where electrical apparatus exists in an environment that requires electrical operation/switching that would infringe SAD or SAD Special the manufactured design of the apparatus are considered in the development of specific work instructions detailing the precautionary requirements to operate the apparatus.

Examples of some of these arrangements or actions associated with these are;

- Unlocking and lifting / lowering indoor circuit breaker bus or cable shutters on metal clad switch gear
- Discharging / Earthing Capacitor bank cans within capacitor ban enclosures
- Installing / Removing former SECV “non fault rated” portable earth trucks into bus or cable spouts

Further advice on these environments and specific work instructions or requirements can be sought by contacting the relative Distribution Network Operator.