

## Access for Work on High Voltage Substation Apparatus

### Summary

This document supports the Power System Safety Rules and its requirements assembled under Work In Substations High Voltage – Category 5

It applies to the issue, suspension and cancellation of High Voltage Access Authorities for work on substation high voltage power system apparatus

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# 1. Purpose

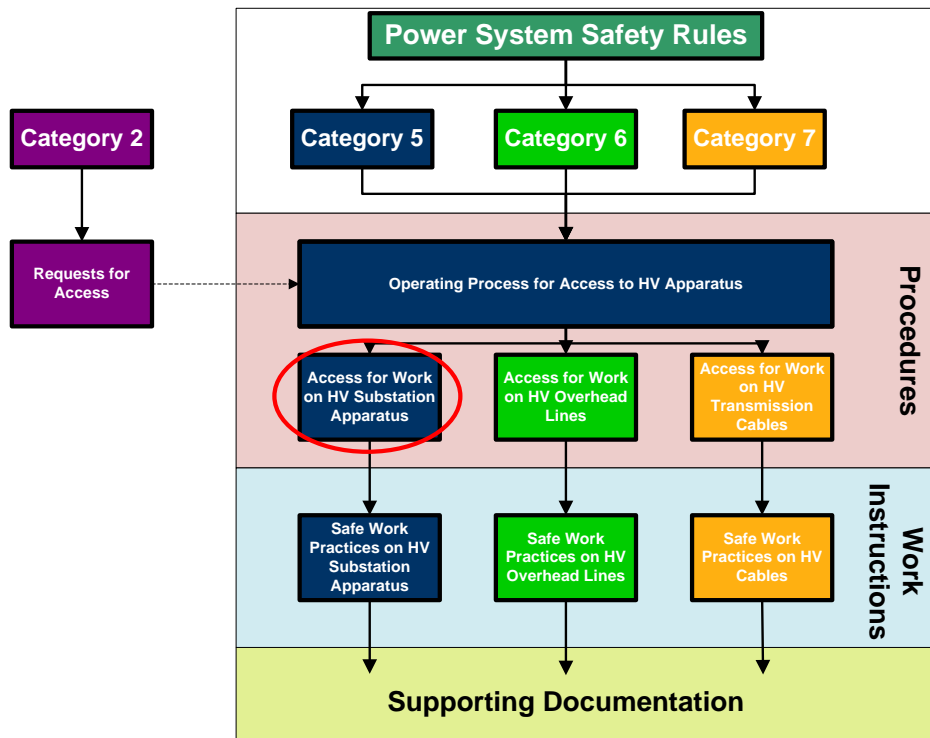
This document supports the Power System Safety Rules (PSSR) and its requirements assembled under 'Work in Substations High Voltage' - Category 5 and apply to the issue, suspension and cancellation of high voltage access authorities.

# 2. Scope

This procedure applies to Access Authorities for work on substation high voltage power system apparatus.

## 2.1 Document Location

The following diagram describes the relationship between this and other relevant PSSR procedures.



# 3. Definitions

Term	Definition
Local Safety Precautions	On site requirements together with appropriate warnings not covered specifically in high voltage PRI, to make equipment safe to work on including: <ul style="list-style-type: none"> <li>Isolations specified on an LVMPRI; and</li> <li>Establishment of a designated work area.</li> </ul>

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Term	Definition												
<i>Hazardous LV or Mechanical Apparatus</i>	<p>Apparatus that would present a danger to workers if it were not isolated or were to be restored during the course of work.</p> <p>A checklist of various types of hazardous LV or Mechanical apparatus appears below.</p> <table border="1" data-bbox="363 315 1471 840"> <thead> <tr> <th data-bbox="363 315 916 376">Type of Hazard</th> <th data-bbox="916 315 1471 376">Examples</th> </tr> </thead> <tbody> <tr> <td data-bbox="363 376 916 443">Mechanical Movement</td> <td data-bbox="916 376 1471 443">- Mechanisms, Rotating Machinery</td> </tr> <tr> <td data-bbox="363 443 916 611">Stored Energy</td> <td data-bbox="916 443 1471 611">- Compressed Air - Springs - Hydraulic</td> </tr> <tr> <td data-bbox="363 611 916 678">Gas</td> <td data-bbox="916 611 1471 678">- CO2, Hydrogen, SF6, Nitrogen</td> </tr> <tr> <td data-bbox="363 678 916 745">Emulsifier Systems</td> <td data-bbox="916 678 1471 745">- Fire protection</td> </tr> <tr> <td data-bbox="363 745 916 840">Low Voltage</td> <td data-bbox="916 745 1471 840">- exposed 415V/240V A.C., 110V A.C. or 120V D.C.</td> </tr> </tbody> </table>	Type of Hazard	Examples	Mechanical Movement	- Mechanisms, Rotating Machinery	Stored Energy	- Compressed Air - Springs - Hydraulic	Gas	- CO2, Hydrogen, SF6, Nitrogen	Emulsifier Systems	- Fire protection	Low Voltage	- exposed 415V/240V A.C., 110V A.C. or 120V D.C.
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<i>Serviceable</i>	<p>When an Access Authority is suspended, serviceable indicates that the apparatus could be returned to service if required by Network Operations.</p> <p>When cancelling an Access Authority, serviceable indicates whether your portion of the work has been completed successfully. Where this is a single portion of a structured series of outages cancelling serviceable does not necessarily mean that the apparatus would be suitable for return to immediate service.</p>												

## 4. Introduction

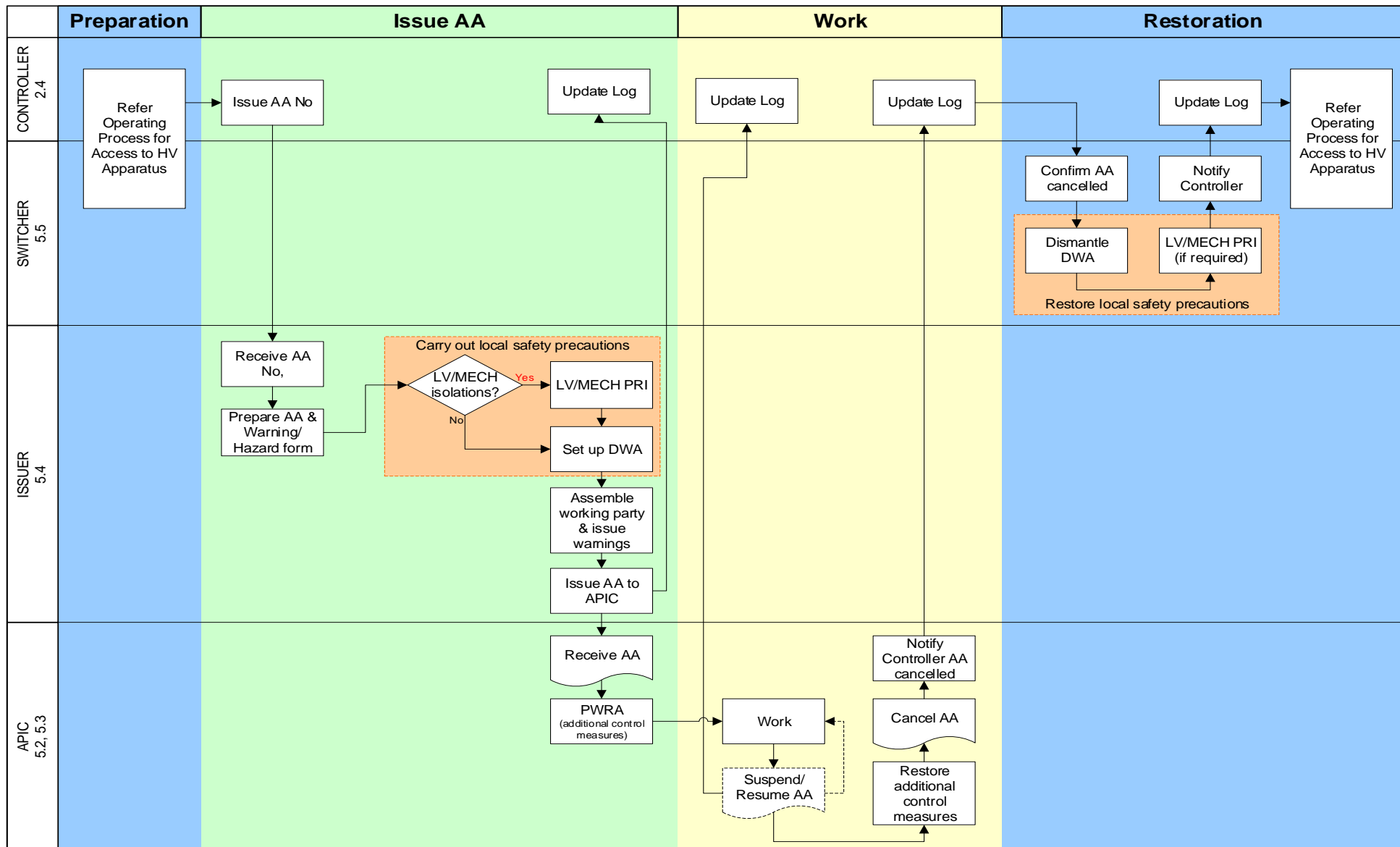
The issue of a High Voltage (HV) Access Authority is required before work is commenced on or near high voltage exposed conductors or HV Cables within a substation. The conductors shall be made safe for work, a designated work area shall be established and a HV Access Authority shall be issued in accordance with section 5 of the Power System Safety Rules.

A HV Access Authority is only applicable to plant within a substation. The substation fence is the physical limit of the HV Access Authority. Therefore for work on the landing span of overhead line, both a HV Access Authority (covering the work within the substation boundary) and a Field Access Authority (covering the landing span outside the substation fence) are required.

This document covers the sequence required to safely issue a HV Access Authority and the sequence required after completion of work for cancellation of the HV Access Authority.

This document should be read in conjunction with the '[Operating Process for Access to High Voltage Apparatus](#)', which covers the generic sequence for preparation and restoration of high voltage apparatus

## 5. HV Access Authority Process



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## 5.1 Preparation

Step	Safety Rules Authorisation	Task	Comment	Reference Document
1	5.5	Carry out the HVPRI up to the point of issue of the HV Access Authority		Operating Process for Access to High Voltage Apparatus

## 5.2 Issue HV Access Authority

Step	Safety Rules Authorisation	Task	Comment	Reference Document
1	5.4	Prepare HV Access Authority form and Warning & hazard Form - HV	Confirm the location, description of apparatus, description of work and nominated access required for work set out on the HV Access Authority are identical to those stated on the RFA.	<a href="#">PSSR</a> – Sect 5.4
2	5.4	Receive clearance from the Controller carry out local safety precautions and issue the HV Access Authority.	The issuer may inform the Controller of the intended APIC details at this point in time if it is known with certainty who this person will be.	
3	5.4	Carry out <i>local safety precautions</i>	<a href="#">Section 7</a>	
	4.3	If required, conduct LVMPRI for equipment to be worked on.	This is to ensure that the equipment to be worked on has been made safe in accordance with the requirements of section 5.4 of the reference document.	Operating Process – Work on Low Voltage or Mechanical Apparatus
	5.4	Set up designated work area (DWA) per the RFA	<a href="#">Section 7.2</a>	
4	5.4	Assemble the working party at the DWA. Issue warnings and demonstrations to all persons involved in work.	Refer to Power System Safety Rules and <a href="#">Section 8</a>	<a href="#">PSSR</a> Sect. 5.4.2
5	5.4	Issue HV Access Authority to Authorised Person in Charge (APIC).	Inform the Controller of issue details if unable to do so at step 2 or if problems with the Access Authority issue were encountered.	
6	5.2, 5.3	Receive HV Access Authority	Operational control is now with the APIC.	<a href="#">PSSR</a> – Sect 5.2
7	5.2	Pre-Work Risk Assessment PWRA	All members of the work party to participate. Implement additional control measures as required by the PWRA and or AA.	

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### 5.3 Work

Step	Safety Rules Authorisation	Task	Comment	Reference Document
1.	5.2, 5.3	Pre-Work Risk Assessment PWRA	Implement additional control measures as required by the PWRA and or AA.	<a href="#">PWRA form</a>
2.	5.2, 5.3	Work.	Record the installation and removal of working earths on the Access Authority Warning and Hazard Form – HV.	<a href="#">PSSR</a> - Sect 5.1
3.	5.2, 5.3	Suspend HV Access Authority ( <i>serviceable/unserviceable</i> ).	<a href="#">Section 10</a>	<a href="#">PSSR</a> - Sect 5.2.3
4.	5.2, 5.3	At completion of work remove any additional control measures implemented in the PWRA.	All working earths, bonding/bridging leads and tools. Where applicable ensure CB is left in the tripped position	<a href="#">PSSR</a> - Sect 5.2.5
5.	5.2, 5.3	Cancel HV Access Authority ( <i>serviceable/unserviceable</i> ).	<a href="#">Section 11</a>	<a href="#">PSSR</a> - Sect 5.2.5
6.	5.2, 5.3	Notify controller that the HV Access Authority has been cancelled.	Operational control reverts to controller	<a href="#">PSSR</a> - Sect 5.2.5

### 5.4 Restoration

Step	Safety Rules Authorisation	Task	Comment	Reference Document
1	5.5	Confirm with controller that Access Authorities have been cancelled.	<a href="#">Section 11.2</a>	<a href="#">PSSR</a> - Sect 5.5.7
2	5.5	Restore Local Safety Precautions		Operating Process – Work on Low Voltage or Mechanical Apparatus
	4.3	If required, restore LV and Mechanical Isolations using LVMPRI.		
	5.5	Dismantle DWA	<a href="#">PSSR</a> - Sect 5.5.2 (c)	
3	5.5	Notify controller ready to proceed with restoration.		Operating Process for Access to High Voltage Apparatus - Section 3.4

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4	5.5	Carry out restoration stage of HVPRI.		Operating Process for Access to High Voltage Apparatus - Section 3.4
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## 6. Preparation of a HV Access Authority

Pre-prepared Access Authorities are issued with the HVPRI. Blank Access Authorities are also supplied in book form. The HV Access Authority shall be prepared for issue by filling in details as follows:

Access Authority Section	Required action
Section 1 - Details of Work	The numbers of the HVPRI, the RFA and the HV Access Authority (issued by the Controller) shall be entered in the spaces provided. The other details to be entered in this section shall be identical to the relevant details on the associated Request(s) for Access.
Section 2 - Status of Apparatus at Start of Work	The issuer of the HV Access Authority shall delete all of the listed options that are NOT applicable at the time of issue of the HV Access Authority and shall list the details of any (LVMPRI/PMWI) carried out.
Section 3 - Issue of HV Access Authority	The numbers of Access Authority shall be entered on the Warning and Hazard Form and additional signature forms in the designated spaces.  Note: All such forms, cross-referenced to the HV Access Authority by being endorsed with the HV Access Authority number shall be attached to and will become part of the HV Access Authority when it is issued.

## 7. Local Safety Precautions

*Local safety precautions* are applicable to work carried out under HV Access Authority on both high voltage and low voltage or mechanical apparatus.

When apparatus is in the charge of a controller, *local safety precautions* will be included as a step in the Preparation and Restoration Instruction (PRI).

These precautions are required for:

- i. The isolation and tagging of *hazardous low voltage and mechanical apparatus*; and
- ii. The establishment of a designated work area.

### 7.1 Isolation of Hazardous Low Voltage or Mechanical Apparatus

The isolation conditions required for *hazardous low voltage (LV) or mechanical (MECH) apparatus* shall be carried out as per the requirements of the Request for Access (RFA).

Specific steps for the required isolation conditions of *hazardous low voltage or mechanical apparatus* shall be carried out using a LVMPRI prior to the issue of a HV Access Authority. The person carrying out the LVMPRI shall check that *local safety precautions*, as detailed in a LVMPRI, are:

- consistent with the RFA. e.g. whether operational checks of the apparatus are required and whether the apparatus is required operational at start of work; and
- discuss the proposed work with the authorised person to whom the HV Access Authority is to be issued, to ensure that *hazardous LV or Mechanical apparatus* conditions, as detailed on the LVMPRI, are appropriate and satisfactory for the work.

The issuer of the HV Access Authority shall endorse the condition of such apparatus and record the associated LVMPRI on the Warning and Hazard Assessment form and shall attach the form to the HV Access Authority. The HV Access Authority recipient shall acknowledge, at the time of receipt that the condition of *hazardous LV or Mechanical apparatus* is as per the associated LVMPRI.

For more information refer to [Operating Process – Work on Low Voltage or Mechanical Apparatus](#).

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## 7.2 Designated work area

### 7.2.1 Principles

- (a) No person may enter a designated work area (DWA) without signing on to the HV Access Authority.
- (b) No person is allowed to pass over or under the tape, fences, gates or walls that form the perimeter of the DWA. Except where allowed under Rule 5.2 (k), the entrance passageway shall always be used when entering or leaving the work area.
- (c) In substations, the DWA established for a HV Access Authority shall only be erected or rearranged by a person authorised category 5.4
- (d) The area shall have a single entrance corridor
- (e) The substation apparatus to be worked on must be completely within the DWA;
- (f) All mobile plant used for access and work on the HV Access Authority must be fully within the DWA. This includes height access equipment, cranes, excavation devices, test equipment etc.
- (g) All apparatus within the boundary of the DWA shall be safe to come on or near subject to the following exceptions:
  - i. Overhead conductors passing over the top of the equipment to be worked on and sufficient distance above the apparatus to be worked on that the risk of coming on or near can be effectively controlled by mechanisms provided in the PSSR and the work party is warned of this hazard.
  - ii. Where work is occurring on GIS or similar switchgear and is it not possible using only yellow tape and stands to exclude in service apparatus from the area appropriate steps must be taken to clearly identify in service apparatus which is not to be accessed. In this situation the in service apparatus must be physically barriered out using appropriate identification devices (such as parawebbing, or similar) such that there can be no uncertainty as to which apparatus can be accessed and which is live. The work party shall be specifically instructed by the Issuer on how the accessible and non-accessible apparatus have been delineated. Additional marking equipment, appropriate to the work and equipment can be used to achieve the required identification.



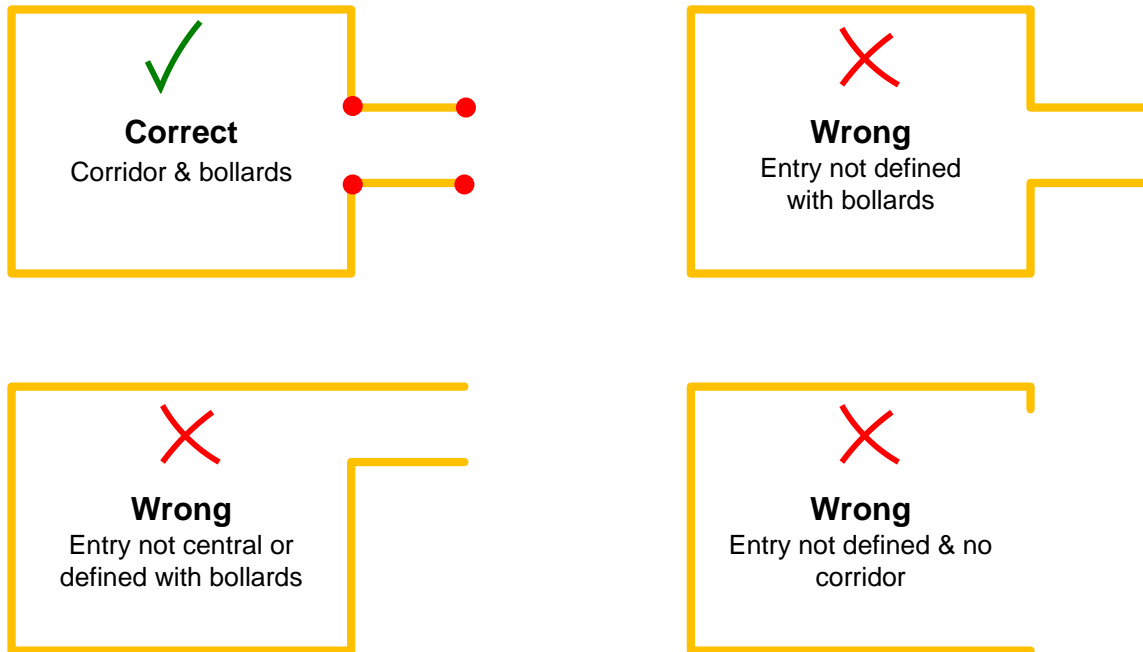
**Figure 1: Parawebbing used to barrier out in service apparatus from accessible apparatus for GIS. Accessible gas points identified with yellow caps**

Note: All Apparatus within the DWA does not necessarily need to be listed on the associated RFA and AA however the work party must limit their work to the description of apparatus and description of work listed on the Access Authority.

## 7.2.2 Designated work area setup and maintenance requirements

- (a) DWA's shall be delineated by use of suitable yellow marking tapes set out around the perimeter on supporting stands;
 

Non high voltage structures, such as fences, gates or walls may be used to support barrier tape if safe distances from exposed high voltage conductors are maintained. Structures such as fences, buildings and blast walls that prevent entry and exit of the DWA may be used as part of the barrier provided no gaps exist that permit entry between the structure and the tape;
- (b) In AIS switchyards, structures that support high voltage electrical equipment must not be used to support tape barriers. With GIS switchgear this may be unavoidable but the principles of 7.2.1 (g) ii shall be followed.
- (c) The single entrance corridor shall be formed by a yellow-taped entrance passageway no more than two metres wide extending outward at least two metres from the work area, which is clearly defined by the use of four (4) high visibility bollards or stand covers so that the entrance is plainly visible from a distance;
- (d) The entry passageway shall be constructed so that the tape on each side of the passageway forms a 90 degree return to the side of the area to which it connects. See examples below:



**Figure 2: Correct and incorrect DWA entrance arrangements**

In the case of a high voltage cage, all gates or entrances forming part of the boundary to the work area that are not used for the single entry shall be taped as a warning against their use.

Note: The entrance passageway is not considered to be part of the working area and does not have to be made safe for working. There could be live overhead conductors crossing the passage way from which persons will need to keep clear.

- (e) There shall be an entrance notice board displaying each HV Access Authority associated with the work at the point where the entrance passageway opens onto the work area. The notice board indicates the commencement of the designated work area;
- (f) Tape barriers shall be erected at a nominal height of 900mm above ground with sufficient support stands to ensure the tape does not sag below 700mm above ground. If windy conditions are affecting the stands then weights should be used on the base of the stands to prevent them from falling over.
- (g) The Authorised Person In Charge of the Access Authority shall ensure that the Yellow Marking Tape and stands are maintained in their originally erected position and any tape stands which fall over are immediately reinstated in their original position.
- (h) Where live equipment may be present adjacent to or above the DWA, a sign “Danger - Live High Voltage Conductors Above and Beyond” shall be positioned in the vicinity of the live equipment on the edge of the DWA by the person setting up the DWA.



**Figure 3: Sign - Danger HV conductors above and beyond**

### 7.2.2.1 Special Equipment Requirements

Fault Earth Switches:

Provided safe working conditions can be provided, fault earth switches shall be:

- i. Kept out of the designated work area when work is not required on the fault earth switch.
- ii. Discharged (CLOSED) whenever they are included inside a designated work area. In addition, the fault earth switch cabinet door shall be closed and a Do Not Operate Tag applied to its handle.

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### 7.2.3 Modifying a designated work area

If it becomes apparent during the course of the work that work cannot proceed without the DWA being rearranged, then work shall not proceed until the DWA is assessed and appropriately rearranged by a person authorised Category 5.4. The AA shall be suspended whilst the work area is rearranged. Once the work area is rearranged the person rearranging the work area shall update the warning and hazard form and re-deliver the warnings to the work group to cover any changes in hazards and controls, related to the rearrangement of the designated work area.

## 8. Warnings and Demonstrations

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The person issuing the HV Access Authority shall give relevant warnings and demonstrations, including:

- The presence of any dangers due to *hazardous LV or Mechanical apparatus* that have not been isolated, or which would exist if Warning Tagged LV or Mechanical isolation points were restored.
- Identifying any unearthed conductors which could be accessed as part of the work, or conductors which could become unearthed due to the operation of apparatus which is accessible during the work.
- The Issuer shall consult with the APIC on which control measures are to be applied by the work party to ensure unearthed conductors are earthed prior to them being approached by workers. These controls shall be recorded on the Warning and Hazard Form – HV and included in the warnings and demonstrations.
- Demonstrations as required by the PSSR section 5.4.2.

The Warnings are to be recorded on the Access Authority Warning and Hazard Form – HV. The person issuing the HV Access Authority shall sign the form with the understanding that all persons are aware of the hazards (Refer [Access Authority Warning and Hazard Form - HV](#)).

## 9. Issuing a HV Access Authority

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The HV Access Authority shall be issued in accordance with the requirements of the Power System Safety Rules section 5.4.

The HV Access Authority number will be provided by the controller and must be entered onto the Access Authority Form, Warning and Hazard Form and on all signature sheets. All these documents with the AA number recorded on them are considered part of the AA.

Once the entire work party has been given the warnings and demonstrations required by the Power System Safety Rules, the HV Access Authority will be issued to the Authorised Person In Charge (APIC), who then has operational control of the apparatus listed on the HV Access Authority and is responsible for the safety of persons working under the HV Access Authority.

The work party will then sign on to the HV Access Authority. Once all of the work party has signed on, the APIC shall rule a line across the signature section, confirming that everyone above the line has received the appropriate warnings and demonstrations.

The HV Access Authority shall then be displayed at the point where the entrance passageway opens onto the designated work area. (See 7.2.2 (e))

Additional persons may become part of a work party after the HV Access Authority has been issued, provided they are given the necessary warnings and demonstrations by the APIC.

### 9.1 Responsibilities of the Person Receiving a HV Access Authority (APIC)

Prior to commencement of work under a HV Access Authority, the APIC shall, in conjunction with all other members of the work party, identify any hazards associated with the work and take appropriate additional control measures, as required by the relevant WASP/SWMS and Pre-Work Risk Assessment forms.

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When there are multiple work parties, each APIC shall ensure that their work is coordinated with that of the other parties. Coordination arrangements shall be endorsed on the Access Authority Warning and Hazard Form for each HV Access Authority. The control points for the apparatus, and the isolation points for the associated *hazardous Low Voltage and Mechanical apparatus* shall be under the control of the recipient of the Access Authority carrying the most significant risk from premature restoration of isolations. The associated Warning Tags shall be endorsed with the number of this HV Access Authority; and

Should any of the work parties require restoration of such isolations and/or operation of the apparatus, such restorations and operations shall be arranged by liaison with the holder of the HV Access Authority, the number of which appears on the Warning Tags. Where a Warning Tag has been applied to the door of a cabinet, all apparatus accessed via the door shall be treated in a uniform manner.

The location and associated details of any working earths applied during the currency of the Access Authority shall be recorded on the Access Authority Warning and Hazard Form – HV. The removal of working earths shall also be recorded.

## 9.2 Issuing of a Testing Access Authority

A Testing Access Authority shall be issued in accordance with the general requirements of the Power System Safety Rules section 5.4.

A Testing Access Authority permits:

- The removal and replacement of earths specifically identified with Warning Tags; and
- The energising and de-energising of high voltage conductors from a test source that produces a dangerous voltage.

The Authorised Person issuing a Testing Access Authority shall:

- (a) Ensure that any current HV Access Authorities relevant to the HV equipment under test are suspended or cancelled;
- (b) Ensure the limitations regarding removal and replacement of any warning tagged earthing is stipulated on the tags; and
- (c) On the Testing Access Authority (or the Access Authority Warning and Hazard Form – HV), record:  
Any earths for which responsibility of removal and replacement has been delegated to the recipient of the Testing Access Authority during the currency of the Testing Access Authority.

## 9.3 Work on a Testing Access Authority

Work on a Testing Access Authority shall be in accordance with the requirements set out in sections 5.3.3 and 5.3.4 of the PSSR.

It is the responsibility of the person in receipt of a Testing Access Authority to ensure:

- (a) There is a member of the work party competent to operate earthing equipment during testing; and
- (b) Whilst any earths are removed for testing, Safe Approach Distances to the affected conductors are to be maintained; and
- (c) That all earths removed and earthing switches opened by them under the Testing Access Authority are restored and/or closed prior to suspension or cancellation of the Testing Access Authority.

### 9.3.1 Work on multiple Testing Access Authorities issued on the same conductor

When two or more HV Testing Access Authorities are issued on different apparatus that are connected by common conductors, at the same time, the HV Testing Access Authorities must have the same APIC.

Note: Conductors that will be physically disconnected during the work are to be treated as a connected by the same conductor unless an isolation or disconnection point, controlled by a PRI is established between the two sets of apparatus.

Where there are separate DWAs established for each HV Testing Access Authority, the common APIC shall ensure that:

- Testing work is coordinated across the DWA's to ensure the safety of all workers
- Work can only be performed in one DWA at a time. All other DWAs must be closed, by means of crossing the tapes at the entrance

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## 10. Suspension and Resumption of a HV Access Authority

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When work under a HV Access Authority ceases, and it is intended to resume work under the same HV Access Authority, then the HV Access Authority shall be suspended.

All persons shall sign off the HV Access Authority and the APIC shall indicate whether or not the apparatus is *serviceable* as far as their work is concerned and inform the controller of the details of the suspended HV Access Authority.

**Note:** A Testing Access Authority may be suspended, but must be cancelled before any other Access Authority is resumed or issued on the apparatus.

The entrance to the designated work area shall be closed off by crossing the tapes and removing the HV Access Authority. The suspended HV Access Authority, together with all attachments, shall be left on the operations desk so that it will be accessible if emergency withdrawal is required.

Before resuming work under a HV Access Authority that has been suspended the following steps shall take place in order:

- (a) The APIC shall obtain clearance from the controller.
- (b) The APIC shall confirm the HV Access Authority conditions are still valid.
- (c) The entrance tapes shall be uncrossed.
- (d) All members of the work party shall sign on the HV Access Authority, which shall again be displayed at the entrance to the designated work area.

Note that if the APIC is not the same person who held the original HV Access Authority, then the process for transferring a HV Access Authority shall be followed (refer PSSR 5.2.1).

## 11. Cancellation of a HV Access Authority

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### 11.1 Responsibilities of the APIC

On completion of the work, the APIC holding the HV Access Authority shall ensure that:

- (a) Additional control measures have been restored, all working earths removed and the apparatus is left in a condition that allows the restoration steps of the PRI to be carried out without alteration, provided it is safe to do so. If this is not possible, it shall be noted that on the HV Access Authority whether the apparatus is or is not *serviceable* and the controller shall be notified;
- (b) All persons have signed off the HV Access Authority (including any additional signature sheets);  
Note: If it is found that a person has failed to sign off the HV Access Authority, the equipment shall not be returned to service until an assurance is obtained that the person concerned is clear of the apparatus. This information shall then be entered onto the HV Access Authority.
- (c) Indicate whether or not the apparatus is *serviceable* as far as their work is concerned; and
- (d) Inform the controller of the details of the cancelled HV Access Authority.

### 11.2 Responsibilities of the Authorised Person conducting restoration

A person authorised category 5.5 shall:

- (a) Confirm with the Controller that all Access Authorities have been cancelled;
- (b) Restore all Local Safety Precautions to normal by:
  - i. Dismantling the designated work area; and
  - ii. If required, *restoring hazardous low voltage or mechanical apparatus* out using a LVMPRI.

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- (c) And carry out the restoration in accordance with the HVPRI as directed by the Controller.

**Note 1:** When the apparatus is to remain out of service pending the issue of a new HV Access Authority for further work then, provided all PRI requirements remain unaltered, the designated work area and associated warning signs may be left in place in readiness for the issue of a further HV Access Authority.

**Note 2:** Where the APIC is the person completing the return switching and they are certain that no other Access Authorities will be utilising the designated work area, it is acceptable to utilise a single phone call to advise the controller of the completion of the process steps in Section 11.1, steps a to d and section 11.2 steps a and b.

## 12. Emergency Withdrawal of a HV Access Authority on High Voltage Exposed Conductors

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If, due to an emergency, it becomes necessary to return to service high voltage apparatus on which there are HV Access Authorities that have not been cancelled, the following procedure shall be followed:

- (a) **HV Access Authority not suspended** (i.e. work still in progress). Follow normal procedures for cancellation of the HV Access Authority (Section 11);
- (b) **HV Access Authority suspended, but not cancelled.** The checks detailed in section 11 above shall be carried out, to the fullest extent possible. However, as the HV Access Authority has not been cancelled, the APIC will not have completed details regarding warning and adjustments, so checks will be needed to determine if any action is required. Subject to all checks being completed to the satisfaction of the controller, the HV Access Authority may be cancelled; and
- (c) **Persons not signed off or serviceability of apparatus not indicated.** The process detailed in section 11 shall be followed.

## 13. Accountability

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Title	Responsibilities and Accountabilities
Head of HSE	> Ownership of this procedure
Power System Safety Rules Manager	> Maintenance of this procedure
Manager Training	> Implementation of training programs associated with this procedure
Authorised Persons	> Comply with this procedure

## 14. Implementation

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This procedure is to be implemented in conjunction with the implementation of TransGrid's Power System Safety Rules. It will be available as a resource, published on the Wire.

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## 15. Monitoring and review

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The Power System Safety Rules Manager is responsible for the ongoing monitoring and review of the documents associated with the Power System Safety Rules. This can include but is not limited to:

- (a) Requesting regular feedback on the effectiveness of procedures and work instructions. Appropriate feedback tools include focus groups and WHS consultative committees.
- (b) Where a change has occurred in our processes; and
- (c) Recommendations arising from incidents.

## 16. Change from previous version

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Revision no	Approved by	Amendment
6		<ul style="list-style-type: none"><li>&gt; Section 9.3.1 introduced to provide clarification on situations where multiple High Voltage Testing Access Authorities with separate Designated Work Areas are issued on the same conductor</li><li>&gt; Appendix B – Diagram updated (2 Testing HV AA's issued on separate apparatus connected by a common conductor)</li></ul>

## 17. References

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Power System Safety Rules

Operating Process for Access to High Voltage Apparatus

Operating Process – Work on Low Voltage or Mechanical Apparatus

## 18. Attachments

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Attachment 1 – Appendix A – Additional Requirements when working in Victoria

Attachment 2 – Appendix B – Designated work area worked examples

## Appendix A – Additional Requirements when working in Victoria

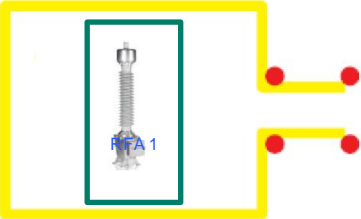
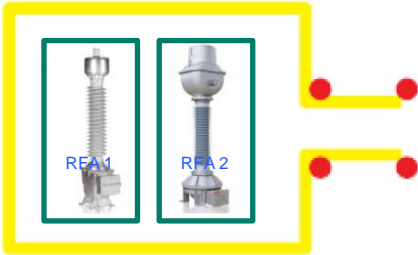
As per the requirements of the Blue Book. The following additional requirements apply when working in Victoria:

Blue Book Clause	Additional Requirement
9.2.4.1	<p>A HV or HV Testing Access Authority issued in Victoria must be cancelled by a person authorised at least category 5.5.</p> <p>For the purposes of this clause a person authorised Category 5.5 is considered to be an authorised electrical operator.</p>
9.2.7	<p>A HV or HV Testing Access Authority issuer must not be the initial recipient of the Access Authority (Self Issue is not permitted).</p>
9.7.2.4	<p>Alive signs shall show the word Live printed in white on a red background in accordance with AS 1319 with the sign of appropriate dimensions.</p> <p>Under Access Authority signs shall show the words “Under Access Authority” printed in white on a green background in accordance with AS 1319 with the sign of appropriate dimensions.</p> <p>Under Testing Access Authority signs shall show the words “Under Testing Access Authority” printed in red on a white background in accordance with AS 1319 with the sign of appropriate dimensions.</p> <div data-bbox="491 925 1449 1462" data-label="Diagram"> <p style="text-align: center;">Under Access Authority or Testing Access Authority Sign – Facing outwards</p> <p style="text-align: right;">Alive signs – Facing inwards</p> </div>
9.7.2.5 & 9.7.2.6	<p>When setting up the designated work area “Under Access Authority” or “Under Testing Access Authority” signs shall be installed adjacent to the entrance of the work area.</p> <p>“Alive” signs shall be installed on each side of the work area in similar positions to where signs as per Figure 3: Sign - Danger HV conductors above and beyond are installed.</p> <p>These requirements are in addition to all the designated work area requirements listed above.</p>

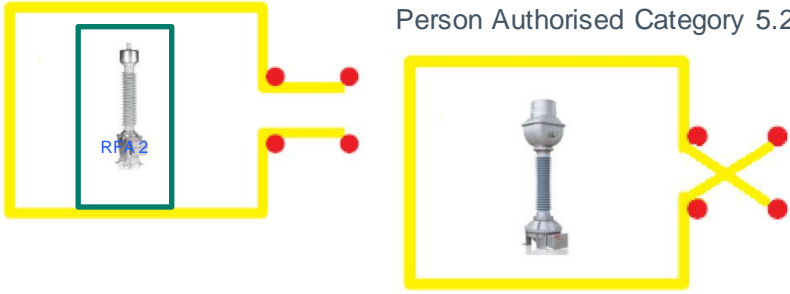
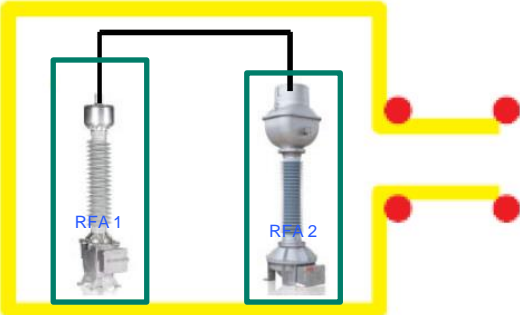
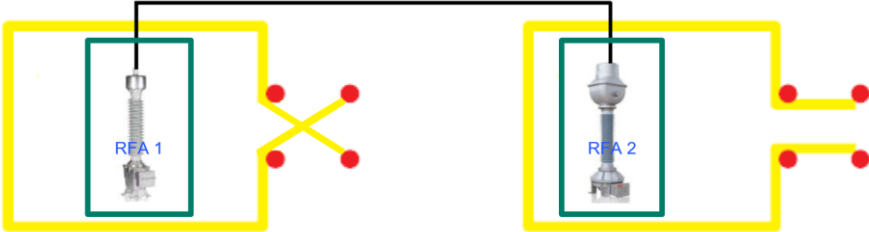
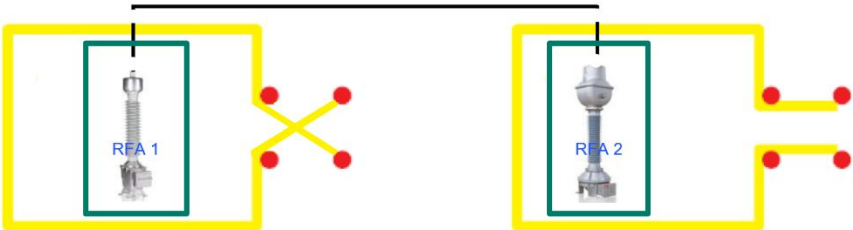
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## Appendix B – Designated work area worked examples


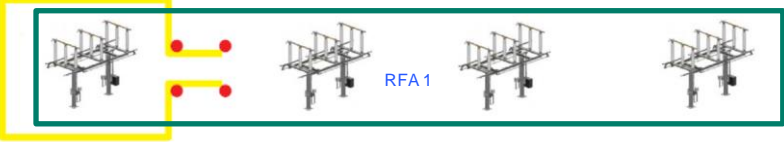
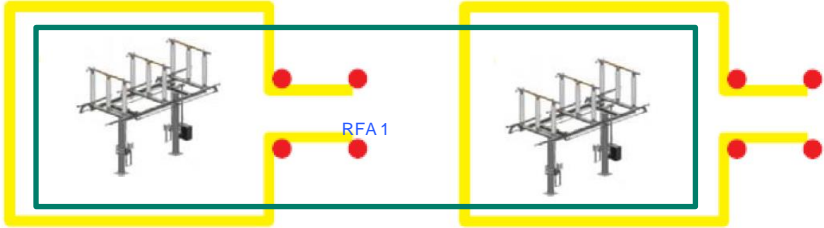
The examples below represent various designated work area arrangements. It is not possible to adequately address every scenario which will be encountered, the principles of section 7.2.1 should be applied and followed in each circumstance. Considerations to ensure worker safety, clarity of extent of work and clear responsibility for work, including consideration of the ability of the APIC to control the work are of paramount importance when deciding the scope of the RFA submitted. Minimising the number of RFA's should be a secondary consideration.

Situation	Requirements
<p>Standard DWA (Testing High Voltage AA(THVAA) or High Voltage AA (HVAA))</p> 	<ul style="list-style-type: none"> <li>• 1 RFA listing apparatus to be worked on and description of work.</li> <li>• 1 person Authorised 5.2 or 5.3 as APIC.</li> <li>• 1 person Authorised 5.1 as second person signed on to AA.</li> </ul>
<p>Two HVAA's on adjacent equipment, 1 DWA enclosing the apparatus listed on both RFA's</p> 	<ul style="list-style-type: none"> <li>• 2 Separate RFA's listing adjacent equipment to be worked on by two work parties.</li> <li>• 1 DWA erected around both items of apparatus</li> <li>• Either both AA's held by the same person or AA's held by separate persons.</li> <li>• 2 AA display stands at the entrance to the work area.</li> <li>• Work parties confine their work to the description of work and description of apparatus of the AA they are signed on to.</li> <li>• Work to be co-ordinated between both work parties as per section 9.1.</li> <li>• For clarity and simplicity one APIC and all workers signed onto both AA's would be preferred over this arrangement.</li> </ul>

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Situation	Requirements
<p>1 Site, 2 HV AA's, 2 DWA's, 1 Person Authorised Category 5.2</p> 	<ul style="list-style-type: none"> <li>• 2 RFA's, 2 separate AA's, 2 separate DWA's.</li> <li>• Only 1 person authorised 5.2 on site.</li> <li>• Work commences in one DWA. If work party needs to move to second DWA entrance to first DWA is closed off. If work party needs to return to original DWA entrance to second DWA is closed off.</li> <li>• Work Party and APIC to only be working in one area at a time.</li> </ul>
<p>2 Testing HV AA's issued on adjacent apparatus connected by a common conductor</p> 	<ul style="list-style-type: none"> <li>• 2 RFA's for testing HV on adjacent apparatus connected by a common conductor, 2 separate AA's.</li> <li>• 1 DWA.</li> <li>• Both AA's held by the same APIC.</li> </ul>
<p>2 Testing HV AA's issued on separate apparatus connected by a common conductor.</p> 	<ul style="list-style-type: none"> <li>• 2 RFA's for testing HV on apparatus connected by a common conductor, 2 Separate AA's</li> <li>• 2 DWA's, 1 open, 1 closed at all times while work is progressing</li> <li>• Both AA's held by the same APIC, considered to be 1 AA.</li> </ul>
<p>2 Testing HV AA's issued on separate apparatus physically disconnected by a common conductor in a way that the physical disconnections are not an isolation point controlled by a PRI.</p>  <p>Two equipment are physically disconnected, however disconnection points are not PRI controlled isolation points</p>	<ul style="list-style-type: none"> <li>• 2 RFA's for testing HV on apparatus connected by a common conductor, 2 Separate AA's</li> <li>• 2 DWA's, 1 open, 1 closed at all times while work is progressing</li> <li>• Both AA's held by the same APIC, considered to be 1 AA.</li> </ul>

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Situation	Requirements
<p>1 Testing HV AA issued, separate DWA's, apparatus linked via ground bus</p> 	<ul style="list-style-type: none"> <li>• 1 RFA describing work on separate apparatus linked via ground bus for testing</li> <li>• 2 DWA's, 1 open, 1 closed at all times while work is progressing (separate DWA's due to live apparatus between the two items of equipment being accessed).</li> <li>• 1 THVAA Issued to 1 APIC.</li> <li>• Work party, AA Form and APIC move between the two areas as required.</li> </ul>
<p>DWA covers a subset of apparatus listed on the AA. AA suspended and area rearranged as required to access separate apparatus</p> 	<ul style="list-style-type: none"> <li>• 1 RFA</li> <li>• 1 APIC</li> <li>• DWA erected around a subset of apparatus listed on the RFA</li> <li>• AA is suspended, DWA rearranged by person authorised Category 5.4 as per section 7.2.3</li> <li>• Warnings updated and reissued following movement of DWA.</li> <li>• This should only be used where there is insufficient tape stands to enclose the apparatus. The planning and work party should seek to minimise the rearrangement of the AA area.</li> </ul>
<p>1 RFA but apparatus is covered by 2 separate AA's and 2 separate DWA's</p> 	<ul style="list-style-type: none"> <li>• 1 RFA</li> <li>• 2 HV AA's</li> <li>• 2 APIC's</li> <li>• 2 separate DWA's</li> <li>• This situation should be avoided wherever possible.</li> </ul>

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