



**Australian Government**

# **AURETH3001 Depower battery electric vehicles**

**Release 2**

## AURETH3001 Depower battery electric vehicles

### Modification History

Release	Comment
Release 2	Replaces AURETH3001 Depower battery electric vehicles (Release 1) Reference to OHS legislation replaced with new WHS legislation

### Unit Descriptor

Unit descriptor	<p>This unit describes the performance outcomes required to depower battery electric vehicles (BEVs). It involves ensuring the vehicle high voltage (HV) supply system is isolated prior to commencing service and repair work.</p> <p>Importance is placed on the application of HV and low voltage (LV) electrical safety procedures.</p> <p>Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.</p>
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### Application of the Unit

Application of the unit	Work applies to the service and repair of HV BEVs in the automotive industry.
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## Licensing/Regulatory Information

Refer to Unit Descriptor.

## Pre-Requisites

Not applicable.

## Employability Skills Information

<b>Employability skills</b>	This unit contains employability skills.
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## Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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## Elements and Performance Criteria

Element	Performance Criteria
1. Prepare for work	1.1. <b>Procedures and information</b> are sourced and work requirements are confirmed 1.2. Service method appropriate for the specific circumstances is selected and prepared for
2. Deactivate power control	2.1. <b>Workplace health and safety (WHS) requirements</b> and other relevant information for deactivation are identified 2.2. Procedure to deactivate vehicle at main control is followed to commence depowering process
3. Isolate vehicle power supply	3.1. HV power supply connection is located and isolated according to manufacturer instructions, taking <b>appropriate precautions</b> to prevent electric shock to self and others 3.2. LV power supply is located and disconnected according to manufacturer instructions and vehicle and workplace safety procedures 3.3. Vehicle is stabilised and checked for residual voltage in system 3.4. HV power supply connection is secured and retained to prevent re-fit by third party 3.5. HV power supply is identified with warning tag or sign to indicate potential hazards

## Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

### Required skills

- technical skills to use workplace technology and tools to:
  - deactivate BEVs
  - locate and disconnect LV power supply in BEVs
  - locate, isolate and stabilise HV power supply in BEVs
- communication skills to:
  - communicate effectively regarding work requirements with supervisor, other workers and customers
  - confirm work requirements and specifications
- literacy skills to interpret technical information and specifications
- self-management skills to:
  - manage risks and hazards associated with HV, BEV electrical systems
  - manage workflow and productivity

### Required knowledge

- WHS requirements, including:
  - safe work practices
  - electrical safety relevant to BEVs
- general principles of operation of HV and LV electrical systems relevant to BEVs
- applicable commonwealth, state or territory legislation, regulations, standards and codes of practice relevant to working on BEVs
- workplace policies procedures including quality, reporting and recording procedures relevant to working on BEVs

## Evidence Guide

<b>Evidence Guide</b>	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
<b>Overview of assessment</b>	
<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<p>The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy all of the requirements of the performance criteria and required skills and knowledge.</p> <p>A person who demonstrates competency in this unit must be able to:</p> <ul style="list-style-type: none"> <li>• comply with WHS requirements and safe work practices</li> <li>• safely deactivate the vehicle and isolate HV and LV power supply</li> <li>• ensure the vehicle is depowered, stabilised and no residual HV power exists.</li> </ul>
<b>Context of, and specific resources for assessment</b>	<p>Competency is to be assessed in the workplace or a simulated workplace environment that accurately reflects performance in a real workplace setting.</p> <p>Assessment is to occur:</p> <ul style="list-style-type: none"> <li>• using standard workplace practices and procedures</li> <li>• following safety requirements</li> <li>• applying environmental constraints</li> </ul> <p>Assessment is to comply with relevant:</p> <ul style="list-style-type: none"> <li>• regulatory requirements</li> <li>• Australian standards</li> <li>• industry codes of practice</li> </ul> <p>Competency is to be assessed using a BEV that uses HV and LV alternating and direct current (AC/DC) electrical systems. Where simulation is used, an operational BEV must be included in the simulation.</p> <p>The following resources must be made available for the assessment of this unit:</p> <ul style="list-style-type: none"> <li>• appropriate PPE</li> <li>• a BEV</li> <li>• manufacturer specifications for the BEV</li> </ul>

<b>Evidence Guide</b>	
	<ul style="list-style-type: none"> <li>• testing equipment</li> <li>• full range of essential tools and equipment</li> <li>• workplace documentation.</li> </ul>
<b>Method of assessment</b>	<p>Assessment must satisfy the endorsed Assessment Guidelines of this Training Package.</p> <p>Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with the application of required skills and knowledge.</p> <p>Assessment methods must be by direct observation of tasks and include questioning on required skills and knowledge to ensure correct interpretation and application.</p> <p>Competence in this unit may be assessed in conjunction with other units which together form part of a holistic work role.</p> <p>Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate the needs of diverse clients.</p> <p>Assessment processes and techniques must be culturally sensitive and appropriate to the language, literacy and numeracy capacity of the candidate and the work being performed.</p>

## Range Statement

### Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the performance criteria is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<p><b><i>Procedures and information</i></b> may include:</p>	<ul style="list-style-type: none"> <li>• Australian standards</li> <li>• diagrams and sketches</li> <li>• engineer and manufacturer design specifications and instructions</li> <li>• industry codes of practice</li> <li>• manufacturer specifications</li> <li>• material safety data sheets (MSDS)</li> <li>• parts catalogues</li> <li>• verbal, written and graphical instructions issued by authorised internal and external persons</li> <li>• workplace recording and reporting procedures</li> <li>• workplace specifications and requirements</li> <li>• workshop manuals.</li> </ul>
<p><b><i>WHS requirements</i></b> may include:</p>	<ul style="list-style-type: none"> <li>• eliminating of hazardous materials and substances</li> <li>• first aid equipment</li> <li>• following emergency procedures</li> <li>• hazard and risk control</li> <li>• personal protective equipment (PPE), such as:             <ul style="list-style-type: none"> <li>• electrical safety gloves 1000V</li> <li>• HV insulating mats (Australian standards rated)</li> </ul> </li> <li>• safety equipment</li> <li>• techniques for manual handling, including shifting, lifting and carrying.</li> </ul>
<p><b><i>Appropriate precautions</i></b> may include:</p>	<ul style="list-style-type: none"> <li>• analysing task to define risk</li> <li>• applying electrical safety precautions, such as:             <ul style="list-style-type: none"> <li>• “one hand rule”</li> <li>• live system warning tags and signs</li> </ul> </li> <li>• depowering the vehicle</li> <li>• following identified OHS requirements</li> <li>• isolating the HV battery electrical supply</li> <li>• stabilising the electrical system.</li> </ul>



## Unit Sector(s)

<b>Competency field</b>	Electrical
<b>Sector</b>	Technical – Hybrid and Battery Electric Vehicle

## Custom Content Section

Not applicable.