

**1. Module details****Module name****Live Line Glove and Barrier to 33kV****Module duration**

It is expected that students with the appropriate entry knowledge and skills will successfully complete this module in 108 – 120 hours.

**Module code**

NUE244

**Discipline code**

0703130

**2. Module purpose**

This module will provide the trainee with the theoretical knowledge and practical skills required to practice live line rubber gloving techniques on energised high voltage conductors up to 33kV.

**3. Prerequisites**NUE224 High Voltage Principles.  
NUE223 Low Voltage – Energised Working Practice *or*  
NUE214 Transmission Systems: Installation & Maintenance A.**4. Relationship to competency standards**

This module addresses Unit 4.4 of the E.S.I. National Competency Standards for Overhead Line Work and Cable Jointing and Unit 7.1 of the Electrical Contracting Industry Award Standard (Volume 8).

**5. Content****Glove & barrier method, policy and general procedures**

Glove and barrier method principles

Definitions

Structures

Personnel and training

Equipment

General work practices

Glove and barrier techniques.

**Glove and Barrier techniques**

Install and/or replace high voltage insulators

Erect and/or replace high voltage crossarms

Connect and/or disconnect high voltage bridge/connections

Install and/or maintain switching devices

Erect and/or replace poles

Repair and/or replace high voltage conductors/cables

Convert intermediate construction to strain construction

**6. Assessment strategy**

**Assessment methods**

Short answer questions (written, oral or graphic or computer based), multiple choice questions, oral questions, observations, assignments, other recognised methods.  
 Suitable practical exercises which assess the skills required of each learning outcome.

**Conditions of assessment**

Theory room for written tests together with practical field observation.

**7. Learning outcome details**

**Learning outcome 1**

**Outline the policy, safety instructions and general work practices and procedures for high voltage live line glove & barrier techniques.**

**Assessment criteria**

- 1.1 Interpret the relevant definitions related to live line high voltage glove and barrier.
- 1.2 Identify the structures from which glove and barrier methods can be performed.
- 1.3 Identify the conditions under which combination glove and barrier and stick methods can be practised.
- 1.4 Define the responsibilities of personnel associated with the practice of glove and barrier work.
- 1.5 Determine the selection criteria and training requirements of personnel who are to be trained in live line high voltage rubber gloving techniques.
- 1.6 Identify the items of equipment used for glove and barrier work, and their compliance with relevant standards.
- 1.7 Determine responsibilities and maintain requirements for live line glove and barrier equipment.
- 1.8 Identify the general work practices and procedures associated with live line high voltage glove and barrier techniques.

**Learning outcome 2**

**Install and/or replace high voltage insulators using live line glove and barrier techniques.**

**Assessment criteria**

- 2.1 Identify the equipment required to install and/or replace high voltage insulators.
- 2.2 Identify the method required to install and/or replace high voltage insulators.
- 2.3 Install and/or replace high voltage insulators, which may include:
  - Intermediate insulators
  - Angle insulators
  - Bridging insulators
  - Strain insulators
  - Suspension insulators.

**Learning outcome 3**

**Erect and/or replace high voltage crossarms using live line glove and barrier techniques.**

**Assessment criteria**

- 3.1 Identify the equipment required to erect and/or replace high voltage crossarms.
- 3.2 Identify the method required to erect and/or replace a high voltage crossarm.
- 3.3 Erect and/or replace high voltage crossarms, which may include:
  - Intermediate
  - Angle
  - Strain
  - Termination
  - Suspension.

**Learning outcome 4**

**Connect and/or disconnect high voltage bridges/connections using live line glove and barrier techniques.**

**Assessment criteria**

- 4.1 Identify the equipment required to connect and/or disconnect high voltage bridges/connections.
- 4.2 Identify the method required to connect and/or disconnect high voltage bridges/connections.

<p><b>Learning outcome 5</b></p> <p><b>Assessment criteria</b></p>	<p>4.3 Connect and/or disconnect high voltage bridges/connections which maintaining supply, which may include:</p> <ul style="list-style-type: none"> <li>- Strain/“Tee” Bridges</li> <li>- Bypass bridges/connections</li> <li>- High voltage A.B.C.</li> <li>- High Voltage Underground</li> <li>- Similar/dissimilar metals.</li> </ul> <p><b>Install and/or maintain electrical equipment using live line glove and barrier techniques.</b></p> <p>5.1 Identify the equipment required to install and/or maintain electrical equipment.</p> <p>5.2 Identify the method required to install and/or maintain electrical equipment.</p> <p>5.3 Install and/or maintain electrical equipment, which may include:</p> <ul style="list-style-type: none"> <li>- Air break switches</li> <li>- Gas switches</li> <li>-Fuse assemblies</li> <li>- Isolators</li> <li>- Bird covers</li> <li>- Surge diverters</li> <li>- Fault indicators.</li> </ul> <p>5.4 Erect and/or remove temporary midspan switching devices.</p>
<p><b>Learning outcome 6</b></p> <p><b>Assessment criteria</b></p>	<p><b>Erect and/or replace poles using live line glove and barrier techniques.</b></p> <p>6.1 Identify the equipment required to erect and/or replace poles.</p> <p>6.2 Identify the method required to erect and/or replace poles.</p> <p>6.3 Erect and/or replace poles, which may include:</p> <ul style="list-style-type: none"> <li>- Intermediate</li> <li>- Angle</li> <li>- Strain.</li> </ul>
<p><b>Learning outcome 7</b></p>	<p><b>Repair and/or replace high voltage conductors/cables using live line glove and barrier techniques.</b></p>

<b>Assessment criteria</b>	<p>7.1 Identify the equipment required to repair and/or replace high voltage conductors/cables.</p> <p>7.2 Identify the method required to repair and/or replace high voltage conductors/cables.</p> <p>7.3 Repair and/or replace high voltage conductors/cables.</p> <p>7.4 Install and/or replace armour rods and line guards.</p> <p>7.5 Convert strain construction to intermediate construction.</p>
<b>Learning outcome 8</b>	<b>Convert intermediate construction to strain construction using live line glove and barrier techniques.</b>
<b>Assessment criteria</b>	<p>8.1 Identify the equipment required to convert intermediate construction to strain construction.</p> <p>8.2 Identify the method required to convert intermediate construction to strain construction.</p> <p>8.3 Convert intermediate construction to strain construction.</p>
<b>8. Delivery of the module</b>	
<b>Delivery strategy</b>	<p>Delivery strategies must be suitable for both theoretical and/or practical learning and module purpose. It is recommended that learning and assessment be facilitated in a holistic manner which may require a learning sequence other than indicated in the body of this module descriptor.</p>
<b>Resource requirements</b>	<p>Relevant Australian standards Enterprise work manuals and standing instructions, diagrams and layouts Relevant manufacturers' equipment manuals</p>
<b>Occupational health and safety requirements</b>	<p>Students should be made aware of Occupational Health and Safety issues in all situations and be expected to demonstrate safe working practices at all times. Electrical safety must be emphasised.</p>