

1. Module details**Module name****Live Line Hotstick to 500kV****Module duration**

It is expected that students with the appropriate entry knowledge and skills will successfully complete this module in 144 – 160 hours.

Module code

NUE250

Discipline code

0703130

2. Module purpose

This module will provide the trainee with theoretical knowledge and practical skills required to practice live line hotstick techniques on energised high voltage conductors up to 500kV on wood poles and steel transmission towers.

3. Prerequisites

NUE224 High Voltage Principles.

NUE214 Transmission Systems: Installation and Maintenance
A or

NUE223 Low Voltage - Energised Working Practice.

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.

5. Content**Hotstick methods, policy and general procedures**

hotstick method principles

definitions

structures

personnel and training

equipment

general work practices

live line safety

live line tools care, maintenance and testing

determination of line loading for hotstick work

Hotstick techniques

install and/or replace high voltage insulators on poles and towers,

install and/or replace high voltage insulators on pilot strings

erect and/or replace crossarms on poles

connect and/or disconnect high voltage bridges/connections on poles and towers whilst maintaining supply

install and/or replace armour grip suspension units

install and/or replace ontario vibration recorders

install and/or replace vibration dampers

install and/or replace performed repair rods

6. Assessment strategy

Assessment methods

Short answer questions (written, oral or graphic or computer based), multiple choice questions, observations, assignments, practical exercise, other recognised methods.

Conditions of assessment

Normally learning and assessment will take place in an intergrated classroom/field environment.

7. Learning outcome details

Learning outcome 1

Describe the policy, Safety instructions and general work practices and procedures for high voltage live line hotstick techniques.

Assessment criteria

- 1.1 Describe how hotstick principles apply to live line work methods.
- 1.2 Identify the structures where hotstick techniques can be used.
- 1.3 Define the responsibilities of personnel associated with work using live line techniques.
- 1.4 Identify the equipment used for live line hotstick work.
- 1.5 List and describe safe work practices used during live line work.
- 1.6 Demonstrate the correct care, maintenance and testing of live line tools.
- 1.7 Calculate the loads to be supported by live line tools.
- 1.8 List the safe working distance for each line voltage which must be observed by live line personnel.

Learning outcome 2

Install and/or replace high voltage insulators on poles, towers and pilot strings.

Assessment criteria

- 2.1 Identify the equipment and tools necessary to replace high voltage insulators.
- 2.2 Select the correct method to allow workers to replace high voltage insulators.
- 2.3 Install and/or replace high voltage insulators.

Learning outcome 3

Erect and/or replace crossarms on poles.

Assessment criteria

- 3.1 Identify the equipment and tools necessary to replace crossarms on poles.
- 3.2 Select the correct method to allow workers to replace crossarms on poles.
- 3.3 Erect and/or replace crossarms on poles.

Learning outcome 4

Connect and/or disconnect high voltage bridges/connections on poles and towers whilst maintaining supply.

Assessment criteria

- 4.1 Identify the equipment necessary to connect and/or disconnect high voltage bridges/connections on poles and towers.
- 4.2 Select the correct method to allow workers to connect and/or disconnect high voltage bridges/connections on poles and towers.
- 4.3 Connect and/or disconnect high voltage bridges/connections on poles and towers.

Learning outcome 5

Erect and/or replace poles.

Assessment criteria

- 5.1 Identify the equipment and tools necessary to erect and/or replace poles.
- 5.2 Select the correct method to allow workers to erect and/or replace poles.
- 5.3 Erect and/or replace poles whilst maintaining supply.

Learning outcome 6

Install and/or replace armour grip suspension unit.

Assessment criteria

- 6.1 Identify the equipment and tools necessary to erect and/or replace armour grip suspension units.
- 6.2 Select the correct method to allow workers to install and/or replace armour grip suspension units.
- 6.3 Install and/or replace armour grip suspension units.

Learning outcome 7	Install and/or replace Ontario Vibration Recorders.
Assessment criteria	<p>7.1 Identify the equipment and tools necessary to erect and/or replace Ontario Vibration Recorders.</p> <p>7.2 Select the correct method to allow workers to install and/or replace Ontario Vibration Recorders.</p> <p>7.3 Install and/or replace Ontario Vibration Recorders.</p>
Learning outcome 8	Install and/or replace vibration dampers.
Assessment criteria	<p>8.1 Identify the equipment and tools necessary to erect and/or replace vibration dampers.</p> <p>8.2 Select the correct method to allow workers to install and/or replace vibration dampers.</p> <p>8.3 Install and/or replace vibration dampers.</p>
Learning outcome 9	Install and/or replace performed repair rods.
Assessment criteria	<p>9.1 Identify the equipment and tools necessary to erect and/or replace performed repair rods.</p> <p>9.2 Select the correct method to allow workers to install and/or replace performed repair rods.</p> <p>9.3 Install and/or replace performed repair rods.</p>
8. Delivery of the module	
Delivery strategy	<p>Delivery strategies must be suitable for both theoretical and/or practical learning and module purpose.</p> <p>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>
Resource requirements	<p>Access to suitable equipment, filtering and testing apparatus</p> <p>Enterprise construction manuals</p> <p>Relevant Australian standards</p> <p>Enterprise work manuals and standing instructions</p> <p>Relevant manufacturers' equipment manuals</p> <p>Computing facilities</p>
Occupational health and safety requirements	<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. Awareness of the dangers of the electrical environment is essential. Electrical safety must be emphasised.</p>