



ESI-NTAG

National ESI Protocols For Assessment of Overseas Lineworkers Seeking to work in Australia

Produced for the ESI-NTAG – by the Overseas Lineworkers, Working in Australia
Assessment Committee

November 2005 – V1

Introduction

The purpose of this document is to identify a set of agreed protocols and principles on how overseas persons seeking to be qualified for the purpose of Australian Linework, against the ESI – Transmission, Distribution and Rail Sector Training Package qualifications should be assessed. The document also provides possible solutions for those identified as requiring the completion of a training gap.

It excludes skilled migration assessments for the purpose of migration to Australia. Trades Recognition Australia (TRA) for the Department of Immigration and Multicultural and Indigenous Affairs (DIMIA) typically performs this activity.

The national qualifications for Linework in Australia are contained in the Electricity Supply Industry (ESI) - Transmission Distribution and Rail Sector Training Packages (UTD98/UET05). This document highlights and augments the RPL/RCC pathway for overseas workers who seek to declare equivalence against respective Lineworker ESI - Transmission, Distribution and Rail Sector Training Packages qualifications. It outlines the industry-preferred protocols that have been established by the Electricity Supply Industry (ESI) through the Electricity Sector Council of EE-Oz Training Standards and its advisory committee the ESI National Technical Advisory Group (ESI - NTAG).

EE-Oz Training Standards operates under a charter from DEST (previously ANTA) as a declared National ElectroComms and EnergyUtilities Industry Skills Council for the ElectroComms and EnergyUtilities Industry. EnergyUtilities industry employers, unions, practitioners, regulators, government agencies, and community stakeholders have contributed much effort, support and knowledge in the development of this document through the ESI - NTAG.

Note:

The protocols outlined in this paper are applicable to all Certificate II to Certificate IV qualifications in the ESI - Transmission Distribution and Rail Sector Training Packages.

The Australian Lineworker

Linework processes and related procedures in Australia can vary between States and Territories and this is reflected in the large array of options made available in the schedule of Elective units of competencies encompassed in the range of Lineworker qualifications. Also, Queensland (including Traction), South Australia, pro-tem Tasmania, and Northern Territory require their Lineworkers to be licensed while Victoria have a registration system for a person working as a Lineworker in Generation (where applicable), Transmission, Distribution (including HV Customers/Airports, where applicable), and Traction.

The duties of Lineworkers are generally associated with installing and maintaining the electricity Network, both overhead and underground, largely performed in outside conditions. The work includes installation, maintenance and inspection of structures and associated hardware used on poles and structures; the installation and maintenance of electrical equipment; the stringing and jointing of overhead lines and underground cables used in the industry and the use of support plant, specialist equipment and tools to undertake these activities. Environmental concerns also play a part in this job function.

The type of work can vary according to the demand, location, and environment, but essentially the duties of a Lineworker working in Australia are to apply the relevant Lineworker skills and knowledge to a standard of performance required in work as defined in the nationally endorsed industry competency standards, and which incorporate critical safe systems of work related to:

1. OHS that is pertinent to an Australia context and requirement under law
2. Applicable Australian electricity standards and regulatory requirements
3. Applicable local electricity standards and regulatory requirements, and
4. Use of the Australian Multiple Earth Neutral (MEN) system

A National System

National Lineworker qualifications such as the CIII in ESI Distribution, Transmission, or Cable Jointing enable portability of the workforce across States and Territories by laying down minimum set criteria for which government approved Registered Training Organisations (RTOs) are registered and are authorised to deem a person competent. National industry Training Packages that include competency standards, assessment guidelines and respective qualifications titles are used by RTOs for this purpose.

The standards (units of competency) detailed in the current ESI – Transmission and Distribution Sector Training Package (UTD98) have been improved in the revised ESI Transmission, Distribution, and Rail Training Package (UET05) to reduce, where possible inconsistencies in interpretation by RTOs. The revised Training Package incorporates the latest technologies, work processes, regulatory requirements, and techniques.

The protocols in this paper have been designed to assure consistency and safeguards required for working in the Electricity Supply Industry are fully recognised and met, as set out in the units of competency for Lineworkers in Australia.

Lineworker Skills and Knowledge

As detailed in the new CIII Lineworker qualifications of the ESI – Transmission, Distribution, and Rail Sector Training Packages the core and elective competencies associated with Linework are detailed in the respective qualification structures. For instance the core competencies required for Certificate III in Distribution Linework are highlighted in Table 1, below.

Table 1 – Core qualification competencies (CIII - Distribution)

Inspect overhead structures and electrical apparatus (poles & structures)
Maintain overhead energised LV conductors and cables
Apply environment and sustainable energy procedures
Operate plant and equipment near live electrical conductors/apparatus
Working safely near live electrical apparatus as non electrical worker
Install electrical equipment (Network infrastructure)

Maintain electrical equipment (Network infrastructure)
Install and maintain poles / structures and Associated hardware
Install & maintain overhead conductors and cables (poles & structures)
Apply OHS practices in the workplace
Dismantle, assemble and fabricate electrotechnology components
Solve problems in extra-low voltage, single path circuits
Solve problems in multiple path DC circuits
Fix and secure equipment
Use drawings, diagrams, schedules and manuals
Lay wiring and terminate accessories for extra-low voltage circuits
Solve problems in multiple path AC circuits

For consistency in depth whilst providing flexibility between and across qualifications, such as Certificate IIIs within the Electricity Supply Industry enterprises/individuals require access to an array of requisite elective competencies that are reflective of the needs of the workplace.

The following list (Table 2) of work functions/competencies is just a sample of Elective units of competency that are available for the CIII ESI in Distribution qualification.

Table 2 – Sample Only of Elective competencies available (CIII - Distribution)

Perform LV field switching operation to a given schedule
Perform HV field switching operations to a given schedule
Perform substation switching operation to a given schedule
Install and maintain public lighting systems
Install and maintain low voltage services (Underground)
Install and maintain low voltage services (Overhead)
Conduct visual checking & treatment of poles and structures.
Locate faults in underground power cables
Conduct high potential testing of underground power cables
Install and replace energy meters and associated equipment
Install mobile generation set for synchronised Genset LV
Control vegetation (Linework)

Note:

The complete list is available from the existing and revised ESI - Transmission Distribution and Rail Training Packages (UTD98/UET05). For any authoritative advice and/or detail the requisite Training Package must be referred to and used.

The Electricity Supply Industry recognises that an individual needs to have developed the requisite essential knowledge and associated skills underpinning performance on why, where, when, and how equipment, processes, techniques and technologies operate. It includes demonstrating such, in work and encompasses compliance with relevant OHS requirements. The Industry has determined that the above core skills (Table 1) dealing with competence performance, as a Lineworker in Australia must cover at minimum requisite underpinning essential knowledge and associated skills areas. A sample of those applicable to Distribution is listed in Table 3, below.

Alternating current principles-power	Enterprises specific - technical drawing and documents
Basic cable and conductor terminations	Environmental and heritage awareness
Basic electrical principles	Environmental fundamentals
Basic rigging techniques	Filtering and sampling of insulating oil
Cable protection and support	Filtering and sampling oil and the environment
Cable types and applications	Fixing and support devices and techniques
Cables in buildings, structures and premises	Fundamental electrical principles
Chain saw principles	Fundamentals for working safely near live electrical apparatus
Direct current circuit principles	Generation power systems
Dismantling and assembling techniques	Hand tools
Drawings and diagrams	Harmonic fundamentals
Electrical safe working practices	Hydraulic and pneumatic portable equipment
Electrical safe working practices	Low voltage - energised work practices for substations
Electromagnetic principles	Low voltage electrical service installation
Electrotechnology science and materials	Low voltage switching principles
Elevator work platform operational principles	Magnetism
Engineering applications of material properties	Material handling and the environment

Engineering applications of mathematical principles	Occupational Health and Safety principles
Enterprise specific - OHS instructions	Pole and hardware installation
Enterprise vehicles	Poles and structures inspection principles
Enterprises specific - policies and procedure instructions	Power factor
Power tools	Substations, power transformers and reactors
Powerline distribution installation	Switchgear installation
Powerline inspection principles	Technical standards, regulations and codes for extra-low voltage work
Powerline installation safety	Three phase circuits
Powerline safety practices.	Transmission distribution & rail power systems
Stores procedures	

Note:

The full list and contents related to Distribution, Transmission, and/or Cable Jointing of these essential knowledge and associated skills (EKAS) areas are contained in the respective ESI - Transmission, Distribution, and Rail Training Packages (UTD98/UET05), and must be referred to in extracting any authoritative technical content or advice.

Criteria for Overseas Lineworkers

The criteria for assessing an individual against a unit of competency rely on the quality and quantity of the evidence provided. This document seeks to outline protocols that augment and clarify the Training Packages Assessment Guideline requirements and the Industry's preferred policies and procedures related to overseas Lineworkers seeking equivalent recognition in Australia. The information provided is aimed at assisting RTOs make informed judgements on the evidence submitted by overseas applicants, within the context of the ESI in Australia.

For overseas applicants seeking equivalence for a position of Lineworker in Australia in the Electricity Supply Industry the following criteria is considered mandatory, and requires relevant RTOs to follow these criteria or show cause why it does not apply.

To undertake Linework in Australia evidence needs to be provided that demonstrates the competence of the applicant to:

1. Work unsupervised across a wide range of trade duties.
2. Follow complex written and verbal directions.
3. Identify, select, and use tools and equipment to complete tasks.
4. Plan, carry out, and complete work associated with the requisite competencies as specified in the respective Training Package Lineworker qualifications completion requirements.
5. Demonstrate essential knowledge and associate skills topic areas as specified in the respective Training Package Lineworker qualification competency requirements.

6. Implement Occupational Health and Safety workplace procedures and practices including the use of job safety analysis, risk control measures, and relevant legislation within an Australian context.
7. Conduct work observing the relevant Commonwealth/State/Territory/Local government regulations/legislation and policies including;
 - a. Any relevant Australian electricity standards and regulatory requirements.
 - b. The MEN system.
 - c. Anti Discrimination legislation
8. Conduct work on a range of equipment, processes, and techniques autonomously and to requirements related to an electricity network, observing the relevant enterprise and or workplace policies and procedures, in an Australian context.
9. Apply sustainable energy principles and practices.
10. Demonstrate that at least 900 hours of formal off-the-job training has been successfully completed or approved equivalent (using the TRA Skills Pathway Overview table as the benchmark – a copy of the table is included in Appendix 1); equivalent to the relevant underpinning essential knowledge and associated skills (EKAS) specification
11. Demonstrate that they can apply any additional licensing or registration requirements as deemed necessary by the relevant state or territory regulatory authority in which they will be employed.
12. Meet the reading, writing and numeracy indicators of skills/competencies in each competency standard unit using the Technical Communication aspect of the national framework, as a outlined in the National Reporting System report, *A mechanism for reporting outcomes of adult English language, literacy and numeracy programs*. The Australian National Training Authority (ANTA) and the Department of Employment Education and Training (DEET), 1994-5.

Note:

1. The use of the Tables 1 to 3 above are indicative and used to provide examples, and are not to be used for designing learning and assessment strategies from. At all times the relevant ESI – Transmission Distribution and Rail Sector Training Package must be used to draw the technical content information from.
2. Trades Recognition Australia (TRA) is part of the Commonwealth Department of Employment and Workplace Relations. TRA is the nominated assessing authority for a range of trade and associate professional occupations for the Department of Immigration and Multicultural and Indigenous Affairs (DIMIA) for skilled migration purposes.
3. Effective as from 1st July 2005 Trades Recognition Australia has set “Uniform Assessment Criteria” for the purpose of determining whether an applicant meets the benchmark of an Australia Tradesperson. This criteria can be found at the following website:
http://www.workplace.gov.au/NR/rdonlyres/D551847F-34F5-418F-892F-A2B1883E5D1A/0/TRAREngineeringUniformAssessmentCriteriaJuly200527_6_05.pdf

Assessment of Overseas Applicants

For the purposes of recognition in Australia of overseas Lineworkers not assessed via TRA processes for skilled migration, an Australian assessment by an RTO is required for a Training Package qualification. For this purpose the RTO should, in addition to its registration requirements, comply with any requirements that may be determined by the relevant electrical regulatory authority in the respective state or territory. This approach

will enhance consistency in assessment and quality outcomes for the industry and regulators.

Assessment Process

Assessments of overseas applicants are to be undertaken by an RTO with the relevant scope, and where applicable is in accord with any relevant electrical regulatory authority a requirement in the respective state or territory.

The assessment process should ensure it is flexible, fair, valid, and reliable and is in accord with the following:

1. Use of self-assessment documents and any relevant evidentiary documentation that allows for *initial* information/evidence to be collated and reviewed
2. Any other evidence is gathered to assist the judgement process so that RTOs and where required, with industry/including employers can determine the relevance of the information gathered
3. Conduct of a desktop audit of the evidence presented
4. Develop a *Lineworker in Training Program* - gap training plan for the respective competencies making up the qualification, where appropriate. This includes producing a training program to be followed by the individual, supplemented by the support role the RTO will provide in, monitoring and evaluating the individual's development through regular formal reports of progress
5. Evaluate evidence of the individual's progress in training under appropriate supervision, and determining that the relevant competency requirements are, and have been, developed and met
6. Evaluate the evidence to determine if applicant is ready to undertake a "Verification Assessment Procedure"
7. Conduct and/or receive a report on the success or otherwise of the "Verification Assessment Procedure" undertaken by the individual
8. Advise the candidate of the outcome. If successful issue qualification and if not provide further assistance, where required

Verification Assessment Procedure – the content areas of the "Verification Assessment Procedure" to be covered are to be in accord with the criteria approved by ERAC and the industry via the ESI-NTAG, and included in the "Verification Assessment Procedure" Guide. An RTO with scope and compliant with any relevant electrical regulatory requirements is to conduct this event only for the purpose intended.

Types of Evidence

Evidence supplied for assessment by applicants is to be well documented and audited. It may take many forms, including interviews, practical demonstrations, and formal assessments. Assessment tools play an extremely important part in collating evidence and RTOs are initially directed to the ESI – Transmission Distribution and Rail Training Packages - Assessment Guidelines for advice in developing tools that are flexible, fair, valid, and reliable and collate sufficient evidence over an acceptable representative range.

The policy of the Electricity Supply Industry regarding the type of acceptable evidence is also documented in the ESI – Transmission Distribution and Rail Training Packages - Assessment Guidelines. In relation to the requisite acceptable evidence required to assist augment the assessment process of overseas Lineworkers seeking a Training Package qualification, the following applies:

1. Outcomes of a desktop audit of relevant and allied qualifications, competencies, authorisations and self assessment information
2. Outcomes of assessments that comply with the Training Package Assessment Guidelines
3. Outcomes of the completion of the requisite gap training as per the requirements of the *Lineworker in Training Program, where appropriate*, which validates all the requirements of the training gap have been met, and
4. Outcomes of the “Verification Assessment Procedure” to determine if the full array of critical aspects of the requisite competencies have been demonstrated

In addition to the requirement to obtain evidence as outlined above, RTOs conducting assessments of overseas Lineworkers may need to comply with any respective state or territory regulatory authority requirements that may apply.

A Guide to Assessors

The Industry recognised that overseas applicants with overseas qualifications may do equivalent work but for the purposes of an Australian context are unlikely to be directly equivalent to an Australian qualification, as contained in the current and revised ESI Transmission Distribution and Rail Training Packages. The likely initial gap for those declaring they are equivalent will be at least:

1. OHS that is pertinent to an Australia context and requirement under law
2. Australian electricity standards and regulatory requirements
3. Local electricity standards and regulatory requirements
4. The Multiple Earth Neutral (MEN) system

Therefore, there is likely to be at best a minimum training gap equal to the above four points that will require attention. In this case the training gap may simply require the delivery of recognised training appreciation course in an environment that is conducive to learning. The period of learning in this instance is likely to be short. Typically, unless there is a mutual recognition agreement in place with another country the extent of full knowledge of the overseas Lineworkers country of origin training and assessment regime, is likely to be limited. Hence, in the first instance a desktop audit of the evidence should be completed to identify the full gap, followed by completion of the training gap, and then successful achievement of the Verification Assessment Procedure.

In the case where there is an identifiable training gap beyond the known minimum, and in particular workplace practice is required to augment the gaps, mechanisms need to be instituted that will allow the prospective Lineworker to engage in a workplace learning arrangement. In the case of only an EKAS deficiency this can be augmented by traditional learning modes, such as classroom delivery.

However, in relation to workplace deficiency where learning and practice is required to complete the gap, Network owners currently require Lineworkers to be competent and qualified before allowing them to work on their assets. Therefore, individuals found with a shortfall in workplace experience and a workplace are unlikely to be able to gain the necessary skills to be deemed competent, and be awarded a qualification. Thus, whilst the individual may be able to gain the EKAS requirements in an off-the-job environment this will not be the case in relation to workplace skills. As they will be limited in the capacity to gain the necessary workplace skills to help them complete the gap, a *Lineworker in Training Program* to facilitate the training gap needs to be implemented.

Facilitating the Training Gap

To overcome the likelihood that an individual will be unable to complete the gap, a *Lineworker in Training Program*, with a range of features supported by the Industry and regulators is to be utilised.

The industry supported *Lineworker in Training Program* has the following features:

1. A “Gap” Training Plan for the requisite ESI Transmission Distribution and Rail Training Package qualification is produced by the RTO outlining the “training program” that is to be completed following the initial assessment and determination of the respective individual’s needs
2. A training agreement between an employer and the individual, that is entered into by both parties that allows the Training Plan to be implemented
3. An agreement with a Network owner is established, where the individual’s employer is a contractor to the industry, to allow access to the Network to complete the training
4. Arranging access to, where possible, government User Choice to assist the RTO in delivering and managing the training program
5. Individual undertakes the “training program”, which includes but is not limited to:
 - i). The competencies or training experience required to be achieved
 - ii). The mentoring arrangement that will apply
 - iii). The requirements for logging of workplace experiences at regular intervals (typically weekly) in an approved logbook or equivalent, which gathers evidence of the work in terms of detailing information about:
 - The preparation of the work
 - The carrying out of the work
 - Completing and confirming completion of the work
 - The range of equipment worked on
 - The duration or time spent on the work
 - The level of supervision applied to each aspect
 - Compliance with relevant policies and procedures
 - Compliance with any related OHS and/or standards requirements applicable to the workplace environment
 - Being signed by the applicant to confirm the information tendered is true and accurate
 - Being signed by the applicant’s qualified supervisor to confirm the information tendered is a true record of what was undertaken

- iv). Advice of the on-going guidance that will be provided by the RTO to the individual and employer to monitor, evaluate and support the individual's development
6. Entry into any requisite skills passbook is made, where applicable and used by the industry or Network owner
7. Confirming when the "Verification Assessment Procedure", will be conducted; once the training has been successfully completed and the individual confirmed by the RTO as ready for the event
8. The individual undertaking the "Verification Assessment Procedure"
9. If successful the individual is issued with the requisite qualification. If not, further action is undertaken to the satisfaction of the parties.

Note:

1. Network Owners are encouraged to adopt the *Lineworker in Training Program*, which includes a training agreement and training plan being put in place to support an individual's ability to gain the relevant skills to complete the gap and obtain the requisite qualification.
2. All necessary safeguards are to be assured for the *Lineworker in Training Program*. This includes ensuring the relevant requirements of the Industry endorsed Supervision Policy for the Lineworker in training, network access arrangements, skills passport to record any workplace progress and development, and other related requirements are established and incorporated in the agreed Training Plan prior to undertaking the training

Where an RTO seeks to provide simulation to replicate workplace assessment, it must refer to and apply the EE-Oz Training Standards national policy on simulation, or greater, and show how in undertaking any simulation they have followed this policy as a minimum. A copy of the national EE-Oz Training Standards ESI – Simulation Policy is available at: <http://www.ee-oz.com.au/index.cfm?pageId=6,168,14,0>

Guide to administering the "Verification Assessment Procedure"

RTOs in conducting the Verification Assessment Procedure, in a respective state or territory, may be required to comply with an electrical regulator's determination to conduct such. In such instances RTOs should liaise with the respective Electrical regulator's to assure compliance.

Notwithstanding, the critical criteria to be covered by the Verification Assessment Procedure will be advised by the ERAC and the Industry through the ESI-NTAG. To assist RTOs the criteria will be incorporated in an ESI - Overseas Lineworker, Verification Assessment Procedure Guide that will be made available to RTOs undertaking such activities. RTOs can subsequently design and deliver the Verification Assessment Procedure in accord with the Guide and to meet their requirements.

The Guide for the Verification Assessment Procedure includes but is not limited to the following:

1. Outlining the intention of the procedure,
2. Outlining the scope of the assessment, and
3. Outlining advice on designing and managing assessment activities.

Included in the Guide will be appendices with a table of specification sample tests covering the scope of assessment for the procedure. RTO training/assessment providers can choose to use these tests as the bases to develop their own. It is expected in due course that there will also be developed an array of sample tests based on the same table of specifications criteria for subsequent assessment events. EE-Oz Training Standards is to investigate the possibility of developing an on-going national Assessment - Question Item Test Bank from which subsequent tests could be drawn down by RTOs to develop their tests in the future.

The key point is that the assessment outcomes that are specified in ESI - Overseas Lineworker Verification Assessment Procedure aim to focus the assessment event on the higher order knowledge and skills needed and applicable to performing safely as a Lineworker tradespersons. That is working safely assure the safety of themselves, their co-workers, industry and the community.

To assist RTOs in conducting and managing the assessment, the Guide outlines the recommended areas the procedure should cover, and is as follows:

1. Topic areas to be covered:

- Knowledge of performance standards to ensure electricity Network installations are safe, including isolation and switching requirements
- Knowledge and skills in applying requirements to planning/designing and altering/repairing electricity Network installations to ensure they are safe
- Demonstrated skills and knowledge applied to arrangement of earthing and protective devices and to testing and identifying non-compliance of electricity Network installations including safe working requirements that cover:
 - carrying out electricity work safely
 - responding to incidents; e.g. pole top rescue, first aid
 - ensuring that the electricity network worked-on is safe for users
 - ensuring that the electricity network worked-on is safe to energise, where work was carried out de-energised

2. The suggested duration of the assessment - expected to be around 6 hours

3. The suggested standard of achievement required – it would be expected that competency would need to be achieved in all of the areas detailed above

A Summary of the relevant parts that the ESI - Overseas Lineworker Verification Assessment Procedure Guide covers is set out below:

ESI - Overseas Lineworker Verification Assessment Procedure Guide - Content

- 1 Introduction
- 2 Assessment guideline information
- 3 Table of specifications
- 4 Knowledge - Questions/answer book
- 5 Knowledge and skills - Questions and answer book
- 6 Practical work book; instructions / responses
- 7 Assessment results allocation, practical task criteria and reporting
- 8 Appendix # - Example of simulated electricity Network installations for testing and fault finding assessment tasks

To assure national consistency and quality of outcomes in the conduct of assessments of overseas lineworkers, RTOs should consider utilising the Verification Assessment Procedure Guide or a similar content area framework. The final decision to determine the appropriate course of action however, rests with the RTO, and this Industry protocol does not diminish such duty of care responsibilities.

Checking regulatory requirements - RTOs

State/territory electrical regulators may keep a register of, or establish a criterion for, RTOs conducting assessments of overseas lineworkers. In such instances, RTOs should liaise with the respective state or territory electrical regulator to determine if a criterion has been established beyond that detailed in this document, for which compliance may be required.

Trades Recognition Australia
Extract - Uniform Assessment Criteria
- July 2005 -

Effective as of 1 July 2005

5. Skill Pathway Overview

Skill Pathway	A	B	C	D	E
Notional Title	Formal Apprenticeship	Informal Apprenticeship	Vocational Traineeship	Work Experience	Australian Qualification
Employment requirement	4 years	5 years	5 years	6 years *	900 Hours ** <i>or</i> 4 years ***
Training requirement	900 Hrs formal training	900 Hrs formal training	1800 Hrs formal training	Verifiable skill level transition process	CRICOS# AQF III <i>or</i>
Specific requirements	Regulated apprenticeship		Recognised traineeship		Acceptable workplace assessment
Primary Outcome	Designated Occupation				
Additional requirements	3 years post-trade experience				
Secondary Outcome	Supervisor / Vocational education teacher				

* 7 years for electrical trades

** For Australian trained applicants (10.4)

*** For AQF holders who have undergone acceptable workplace assessment (10.6)

The Commonwealth Register of Institutions and Courses for Overseas Students

Note: The “Uniform Assessment Criteria” can be found at the following website:
http://www.workplace.gov.au/NR/rdonlyres/D551847F-34F5-418F-892F-A2B1883E5D1A/0/TRAREngineeringUniformAssessmentCriteriaJuly200527_6_05.pdf