Australian Government

# UEP50122 Diploma of ESI Generation

**Release 1**

# UEP50122 Diploma of ESI Generation

## Modification History

Release 1. This is the first release of this qualification in the UEP Electricity Supply Industry - Generation Sector Training Package.

## Qualification Description

The qualification covers skills and knowledge to manage power generation plant systems activities, remote operation of network systems, development of operational procedures and the implementation of safe working practice for work in the electrical supply industry (ESI).

It also includes working with civil plant and infrastructure and observing safe working practices.

**Combined Specialist** - Operations and Systems Operations

This specialisation covers the skills and knowledge required to perform operations and systems operations.

**Specialist - Operations**

This specialisation covers the skills and knowledge required to perform operations.

**Specialist - Systems Operations**

This specialisation covers the skills and knowledge required to perform systems operations.

Please note: RTO to insert on the testamur, the specialisation selected from the specialist elective unit group below.

No licensing, legislative or certification requirements apply to this qualification at the time of publication.

## Entry Requirements

There are no entry requirements for this qualification.

## Packaging Rules

A total of **36 units of competency** for the Combined Specialisation – Operations and Systems Operations

A total of **29 units of competency** for the Specialisation - Operations

A total of **27 units of competency** for the Specialisation - Systems Operations

comprising:

Combined Specialisation - Operations and Systems Operations

- 12 core units listed below; plus

- 9 specialisation units from Group A; plus
- 7 specialisation units from Group B; plus
- 5 elective units from Group C; plus
- 3 elective units may be selected from Group C or, with appropriate contextualisation, from a qualification in this or any endorsed Training Package, provided selected units contribute to the vocational outcome of the qualification.

Specialisation – Operations

- 12 core units listed below; plus
- 9 specialisation units from Group A; plus
- 5 elective units from Group C; plus
- 3 elective units may be selected from Group C or, with appropriate contextualisation, from a qualification in this or any endorsed Training Package, provided selected units contribute to the vocational outcome of the qualification.

Specialisation – Systems Operations

- 12 core units listed below; plus
- 7 specialisation units from Group B; plus
- 5 elective units from Group C; plus
- 3 elective units may be selected from Group C or, with appropriate contextualisation, from a qualification in this or any endorsed Training Package, provided selected units contribute to the vocational outcome of the qualification.

Where imported units are selected, care must be taken to ensure all prerequisite units specified are complied with. Prerequisites attached to any of the units must be obtained and are additional to the number of units required for the qualification.

Where a prerequisite unit is attached to a unit, it is identified by this symbol ∟.

**Core units**

| | |
|---|---|
| UEECD0024 | Implement and monitor energy sector WHS policies and procedures |
| UEECD0007 | Apply work health and safety regulations, codes and practices in the workplace |
| UEPOPS001 | Analyse single protection device operation |
| UEPOPS003 | Apply quality systems to work |
| UEPOPS031 | Coordinate response to critical incidents<br>∟ UEPOPS130 Respond to a critical incident |
| UEPOPS032 | Coordinate team activities |
| UEPOPS043 | Interpret and analyse multi-operation protection devices |

└ UEPOPS001 Analyse single protection device operation

UEPOPS047    Maintain quality systems within the team

└ UEPOPS003 Apply quality systems to work

UEPOPS053    Manage operational crisis to maintain or restore power system integrity

UEPOPS058    Manage Work Health and Safety policy and procedures

└ UEECD0024 Implement and monitor energy sector WHS policies and procedures

UEPOPS061    Monitor and implement environmental site plans and procedures

UEPOPS130    Respond to a critical incident

## Group A: Specialist Electives - Operations

UEPOPS011    Conduct multiple energy source isolation procedures for permit to work

└ UEPOPS017 Conduct single energy source isolation procedures for permit to work

UEPOPS017    Conduct single energy source isolation procedures for permit to work

UEPOPS019    Control electrical energy production

UEPOPS028    Coordinate permit to work system

└ UEPOPS011 Conduct multiple energy source isolation procedures for permit to work

UEPOPS055    Manage permit to work system

└ UEPOPS011 Conduct multiple energy source isolation procedures for permit to work

└ UEPOPS028 Coordinate permit to work system

UEPOPS056    Manage quality control procedures

UEPOPS075    Operate and monitor a.c. electrical systems

UEPOPS089    Operate and monitor d.c. electrical systems

UEPOPS127    Plan and organise work

## Group B: Specialist Electives - System Operations

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|---|---|
| UEPOPS026 | Coordinate network/system |
| UEPOPS030 | Coordinate power generation |
| UEPOPS036 | Develop H.V. switching programs |
| UEPOPS040 | Facilitate the use of contingency plans for power generation facilities |
| UEPOPS052 | Manage high voltage network system <br> ∟ UEPOPS026 Coordinate network/system |
| UEPOPS108 | Operate and monitor system equipment |
| UEPOPS124 | Perform switching to a switching program |

## Group C: General electives

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|---|---|
| BSBHRM523 | Coordinate the learning and development of teams and individuals |
| BSBINS501 | Implement information and knowledge management systems |
| BSBLDR522 | Manage people performance |
| BSBOPS502 | Manage business operational plans |
| BSBOPS505 | Manage organisational customer service |
| BSBPEF501 | Manage personal and professional development |
| BSBSTR501 | Establish innovative work environments |
| BSBSTR502 | Facilitate continuous improvement |
| BSBTWK502 | Manage team effectiveness |
| BSBWHS521 | Ensure a safe workplace for a work area |
| UEECO0001 | Estimate electrotechnology projects |
| UEPOPL003 | Licence to operate a reciprocating steam engine |
| UEPOPL004 | Licence to operate a steam turbine |

| UEPOPS002 | Apply environmental and sustainable energy procedures |
|---|---|
| UEPOPS004 | Carry out operational checks on in-service electrical plant |
| UEPOPS006 | Collect and analyse hydrological and meteorological data |
| | └ UEPOPS122 Perform process plant inspections |
| UEPOPS012 | Conduct non-routine operational testing |
| UEPOPS013 | Conduct operational checks and carry out corrective action on in-service electrical plant |
| UEPOPS014 | Conduct operational checks on in-service mechanical plant |
| UEPOPS015 | Conduct project management |
| UEPOPS018 | Conduct water conveyance and control |
| UEPOPS020 | Control hydro generation pumping |
| UEPOPS021 | Control permit to work operations |
| UEPOPS022 | Coordinate and direct switching program |
| | └ UEPOPS124 Perform switching to a switching program |
| UEPOPS023 | Coordinate electrical energy production |
| | └ UEPOPS019 Control electrical energy production |
| UEPOPS024 | Coordinate first response team operation |
| UEPOPS025 | Coordinate local H.V. networks |
| UEPOPS027 | Coordinate operational strategies for power production |
| UEPOPS029 | Coordinate photovoltaic solar power plant operations |
| UEPOPS033 | Coordinate the use of contingency plans |
| | └ UEPOPS040 Facilitate the use of contingency plans for power generation facilities |
| UEPOPS034 | Coordinate wind farm operations |
| UEPOPS035 | Coordinate workplace communication |

              ∟ UEPOPS041 Facilitate workplace communication

| | |
|---|---|
| UEPOPS037 | Ensure compliance with Work Health and Safety policy and procedures |
| UEPOPS038 | Evaluate cost estimations and initiate appropriate solutions<br>∟ UEECO0001 Estimate electrotechnology projects |
| UEPOPS039 | Evaluate scheduling of generation plant<br>∟ UEPOPS132 Schedule generation |
| UEPOPS041 | Facilitate workplace communication |
| UEPOPS042 | Implement dam safety surveillance procedures |
| UEPOPS048 | Manage commissioning and decommissioning |
| UEPOPS049 | Manage critical incidents<br>∟ UEPOPS031 Coordinate response to critical incidents<br>∟ UEPOPS130 Respond to a critical incident |
| UEPOPS050 | Manage environmental management systems |
| UEPOPS051 | Manage first response team<br>∟ UEPOPS024 Coordinate first response team operation |
| UEPOPS052 | Manage high voltage network system<br>∟ UEPOPS026 Coordinate network/system |
| UEPOPS054 | Manage operational strategies for power production |
| UEPOPS057 | Manage system restart |
| UEPOPS059 | Manage, operate and monitor a gas turbine unit |
| UEPOPS060 | Monitor and coordinate the operation of a combined cycle gas turbine unit<br>∟ UEPOPS059 Manage, operate and monitor a gas turbine unit<br>∟ UEPOPS073 Operate and monitor a steam turbine<br>∟ UEPOPS095 Operate and monitor fuel firing plant - gas/oil<br>∟ UEPOPS101 Operate and monitor HRSG hot gas control system |
| UEPOPS062 | Monitor and maintain civil assets |

| UEPOPS063 | Monitor and maintain wind farm civil assets |
|---|---|
| UEPOPS064 | Monitor climatic conditions for renewable energy production |
| UEPOPS065 | Monitor implementation of quality control for production and maintenance<br>∟ UEPOPS047 Maintain quality systems within the team |
| UEPOPS066 | Monitor power generation plant reliability |
| UEPOPS067 | Monitor the implementation of under frequency load shedding |
| UEPOPS068 | Operate a hydro generator synchronous condenser pump unit |
| UEPOPS070 | Operate and monitor a boiler unit |
| UEPOPS071 | Operate and monitor a heat recovery steam generator unit<br>∟ UEPOPS101 Operate and monitor HRSG hot gas control system<br>∟ UEPOPS138 Start and run up gas turbine<br>∟ UEPOPS141 Start up a heat recovery steam generator unit |
| UEPOPS072 | Operate and monitor a hydro turbine |
| UEPOPS073 | Operate and monitor a steam turbine |
| UEPOPS076 | Operate and monitor air conditioning plant and ventilation systems |
| UEPOPS077 | Operate and monitor alkalinity reduction plant |
| UEPOPS081 | Operate and monitor auxiliary steam systems |
| UEPOPS082 | Operate and monitor boiler draught system |
| UEPOPS083 | Operate and monitor boiler steam/water cycle |
| UEPOPS084 | Operate and monitor brine concentrator plant |
| UEPOPS086 | Operate and monitor compressed air systems |
| UEPOPS087 | Operate and monitor compressed gas systems |
| UEPOPS088 | Operate and monitor condenser and auxiliary cooling systems |

| UEPOPS090 | Operate and monitor dual fuel firing plant |
| UEPOPS092 | Operate and monitor fixed fire protection systems |
| UEPOPS093 | Operate and monitor flue gas (NOx) mitigation systems |
| UEPOPS094 | Operate and monitor fuel firing plant -coal |
| UEPOPS095 | Operate and monitor fuel firing plant -gas/oil |
| UEPOPS096 | Operate and monitor fuel supply |
| UEPOPS098 | Operate and monitor gas production plant |
| UEPOPS099 | Operate and monitor generator/alternator |
| UEPOPS100 | Operate and monitor heat exchangers and cooling systems |
| UEPOPS101 | Operate and monitor HRSG hot gas control system |
| UEPOPS102 | Operate and monitor hydro plant auxiliary systems |
| UEPOPS103 | Operate and monitor hydro unit control and protection systems |
| UEPOPS104 | Operate and monitor oil systems |
| UEPOPS105 | Operate and monitor reverse osmosis plant |
| UEPOPS107 | Operate and monitor supervisory, control and data acquisition systems |
| UEPOPS109 | Operate and monitor water quality monitoring systems |
| UEPOPS110 | Operate and monitor water systems condensate and feedwater |
| UEPOPS111 | Operate and monitor water treatment plant |
| UEPOPS112 | Operate bulk coal handling plant |
| UEPOPS113 | Operate fabric filter dust collection plant |
| UEPOPS114 | Operate H.V. condition changing apparatus |
| UEPOPS115 | Operate hydroelectric generating plant and auxiliary equipment |

UEPOPS116        Operate local H.V. switchgear

UEPOPS117        Operate local L.V. switchgear

UEPOPS118        Operate manual systems
                 ∟UEPOPS145 Undertake local systems operations

UEPOPS120        Undertake operational commissioning and decommissioning

UEPOPS122        Perform process plant inspections

UEPOPS123        Perform risk analysis of generation plant

UEPOPS126        Plan a scheduled outage

UEPOPS128        Produce maintenance plans for generation production plant

UEPOPS129        Produce maintenance strategies for generation production plant
                 ∟UEPOPS128 Produce maintenance plans for generation production plant

UEPOPS131        Run up a steam turbine

UEPOPS132        Schedule generation

UEPOPS133        Shut down a boiler unit

UEPOPS134        Shut down a gas turbine

UEPOPS135        Shut down a heat recovery steam generator unit
                 ∟UEPOPS101 Operate and monitor HRSG hot gas control system
                 ∟UEPOPS134 Shut down a gas turbine

UEPOPS136        Shut down a hydro turbine

UEPOPS137        Shut down a steam turbine

UEPOPS138        Start and run up gas turbine

UEPOPS139        Start and run-up a hydro turbine

UEPOPS140        Start up a boiler unit

UEPOPS141        Start up a heat recovery steam generator unit

⌊ UEPOPS101 Operate and monitor HRSG hot gas control system

UEPOPS143          Tune process plant and equipment

UEPOPS144          Undertake dam safety surveillance

UEPOPS145           Undertake local systems operations

# Qualification Mapping Information

This qualification replaces and is equivalent to UEP50218 Diploma of ESI Generation Operations and UEP50118 Diploma of ESI Generation - Systems Operations

# Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1715b9fa-e7bd-441c-bb8d-cf22c9c825a8