



Australian Government

UEPOPS093 Operate and monitor flue gas (NO_x) mitigation systems

Release: 1

UEPOPS093 Operate and monitor flue gas (NOx) mitigation systems

Modification History

Release 1. This is the first release of this unit of competency in the UEP Electricity Supply Industry – Generation Sector Training Package Release 2.0.

Application

This unit involves the skills and knowledge required for the operation, inspection and monitoring of flue gas – Nitrogen Oxides (NOx) mitigation systems. NOx mitigation systems are used by coal, gas, oil and biomass fired, oil and gas fired gas turbines and combined cycle power generation facilities.

NOx are poisonous gases derived from nitrogen and oxygen combustion under high pressure and temperatures. NOx is composed of nitric oxide (NO), and a smaller percentage of more poisonous nitrogen dioxide (NO₂).

Competency in this unit requires the ability to plan work, carry out operation of NOx mitigation system, test NOx mitigation operation, analyse NOx mitigation system faults, inspect and monitor NOx mitigation system, and complete all documentation. Individuals will, in general, work under supervision, in a power generation facility as an operator.

Power generation plant operators are trained and authorised to isolate, prepare plant and issue permits.

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

Pre-requisite Unit

There are no prerequisite units

Competency Field

Operations

Unit Sector

Electricity generation

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Plan and prepare work

- 1.1** Work health and safety (WHS)/occupational health and safety (OHS) regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, environmental requirements and workplace procedures are identified, applied and monitored
- 1.2** Work requirements, including permits, are identified from relevant personnel and documentation in accordance with workplace procedures
- 1.3** Inspection, preoperational checks and preparations for NOx mitigation service are carried out in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 1.4** NOx mitigation plant operational prerequisites are established in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 1.5** Sequence for recommissioning of NOx mitigation plant is determined to suit existing circumstances in accordance with workplace procedures

2 Operate NOx mitigation plant

- 2.1** NOx mitigation plant is operated in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 2.2** NOx mitigation plant is monitored and observed to detect deviations from normal operating conditions in accordance with workplace procedures
- 2.3** Corrective actions are taken to rectify NOx mitigation abnormalities in accordance with workplace procedures

3 Test NOx mitigation plant operation

- 3.1** Operational tests are performed in accordance with workplace procedures
- 3.2** NOx mitigation plant is observed for correct operational response in accordance with workplace procedures
- 3.3** NOx mitigation plant is returned to required operational status upon completion of test in accordance with workplace procedures

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| 4 Analyse NOx mitigation plant faults | 4.1 | Causes of abnormal NOx mitigation plant operating conditions are identified by analysing technical and operational information in accordance with workplace procedures |
| | 4.2 | NOx mitigation plant integrity and personnel safety is maintained in consultation with relevant personnel and technical and operational documentation in accordance with workplace procedures |
| 5 Monitor and inspect NOx mitigation plant | 5.1 | NOx mitigation plant to be monitored and inspected is physically identified in accordance with workplace procedures |
| | 5.2 | NOx mitigation plant is monitored and inspected for normal operation and to detect deviations in accordance with workplace procedures, |
| | 5.3 | Relevant personnel are notified when defects are detected in accordance with workplace procedures |
| 6 Complete documentation | 6.1 | NOx mitigation plant problems, movements and status are reported in accordance with workplace procedures |
| | 6.2 | Documentation is updated in accordance with workplace procedures |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEP Electricity Supply Industry – Generation Sector Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UEPOPS435 Operate and monitor flue gas (NOx) mitigation systems.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1715b9fa-e7bd-441c-bb8d-cf22c9c825a8>

Assessment Requirements for UEPOPS093 Operate and monitor flue gas (NOx) mitigation systems

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria on at least two separate occasions and include:

- analysing NOx mitigation plant faults using data analysis techniques and tools
- applying work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - emergency procedures
 - risk control measures
 - safe working practices
- communicating with personnel
- completing documentation using recording procedures
- identifying NOx mitigation plant status
- implementing regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- interpreting manuals
- monitoring and inspecting NOx mitigation plant
- operating NOx emission control plant and equipment
- organising resources
- preparing NOx mitigation plant and equipment
- recognising and responding to abnormal flue gas (NOx) mitigation plant operating conditions
- testing NOx mitigation plant operation using diagnostic and testing techniques
- working with permit system.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria and include knowledge of:

- arrangements of power production plant
- manuals
- regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements

- NOx mitigation system plant and equipment, location and operating parameters, including:
 - NOx generation during combustion process within fossil fuelled boilers and gas turbines
 - NOx emission control plant and equipment components and the way they interact with plant and equipment
- performance tests on NOx mitigation system plant
- permit system
- WHS/OHS requirements, including:
 - emergency procedures
 - risk control measures
 - safe working practices
- workplace documentation
- workplace policies and procedures.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

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