



Australian Government

UEPOPS435 Operate and monitor flue gas (NO_x) mitigation systems

Release: 1

UEPOPS435 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 Generation Training Package.

Application

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

Nitrogen Oxides (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 flue gas (NOx) mitigation system, test flue gas (NOx) mitigation operation, analyse flue gas (NOx) mitigation system faults, inspect and monitor flue gas (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 typically trained and authorised to isolate, prepare plant and issue permits to work.

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

Note: Workplace practice

The application of the skills and knowledge described in this unit may require a licence or training permit to practice in the workplace where work is carried out on gas and electrical installations. Additional conditions may apply under state and territory legislative and regulatory licensing requirements.

Pre-requisite Unit

There are no prerequisite units.

Competency Field

Operations

Unit Sector

Electricity generation

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

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

1 Plan and prepare work

- 1.1 Safety issues for flue gas (NOx) mitigation are identified, in accordance with workplace procedures and Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) regulations and legislative requirements
- 1.2 Work requirements including the use of Personal Protective Equipment (PPE), permits and risk control measures are identified, in accordance with workplace procedures, from relevant personnel and documentation
- 1.3 Inspection, preoperational checks and preparations for flue gas (NOx) mitigation service are carried out, in accordance with workplace procedures and manufacturers' recommendations procedures
- 1.4 Flue gas (NOx) mitigation plant operational prerequisites are established, in accordance with workplace procedures and manufacturers' recommendations
- 1.5 Sequence for recommissioning of flue gas (NOx) mitigation plant is determined to suit existing circumstances, in accordance with workplace procedures and site requirements

2 Operate flue gas (NOx) mitigation plant

- 2.1 Flue gas (NOx) mitigation plant is operated, in accordance with workplace procedures and manufacturers' operating recommendations
- 2.2 Flue gas (NOx) mitigation plant is monitored and observed, in accordance with workplace procedures, to detect deviations from normal operating conditions
- 2.3 Corrective actions are taken to rectify flue gas (NOx) mitigation abnormalities, in accordance with workplace procedures, industry standards and site requirements

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| 3 Test flue gas (NOx) mitigation plant operation | 3.1 | Operational tests are performed, in accordance with workplace procedures |
| | 3.2 | Flue gas (NOx) mitigation plant is observed for correct operational response, in accordance with workplace procedures |
| | 3.3 | Corrective action is taken, in accordance with workplace procedures, when response does not meet with documentation, flue gas (NOx) mitigation plant integrity or personnel safety requirements |
| | 3.4 | Flue gas (NOx) mitigation plant is returned to required operational status upon completion of test, in accordance with workplace procedures |
| 4 Analyse flue gas (NOx) mitigation plant faults | 4.1 | Causes of abnormal flue gas (NOx) mitigation plant operating conditions are identified, in accordance with workplace procedures, and by analysing technical and operational information |
| | 4.2 | Corrective action is taken, in accordance with workplace procedures |
| | 4.3 | Flue gas (NOx) mitigation plant integrity and personnel safety is maintained, in accordance with workplace procedures, and in consultation with appropriate personnel and technical and operational documentation |
| 5 Monitor and inspect flue gas (NOx) mitigation plant | 5.1 | Flue gas (NOx) mitigation plant to be monitored and inspected is physically identified, in accordance with workplace procedures |
| | 5.2 | Flue gas (NOx) mitigation plant is monitored and inspected, in accordance with workplace procedures, for normal operation or to detect deviations |
| | 5.3 | Corrective action is taken, in accordance with workplace procedures |
| | 5.4 | Appropriate personnel are notified, in accordance with workplace procedures, when defects are detected |
| 6 Complete documentation | 6.1 | Flue gas (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 Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UEPOPS435B 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 UEPOPS435 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 Generation Training Package.

Performance Evidence

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

- analysing flue gas (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 flue gas (NOx) mitigation plant status
- implementing legislation, industry standards, codes of practice and regulations
- interpreting manufacturers' specifications and manuals
- monitoring and inspecting flue gas (NOx) mitigation plant
- operating flue gas (NOx) emission control plant and equipment
- organising resources
- preparing flue gas (NOx) mitigation plant and/or equipment
- recognising and responding to abnormal flue gas (NOx) mitigation plant operating conditions
- testing flue gas (NOx) mitigation plant operation using diagnostic and test techniques
- working with permit to work system

Knowledge Evidence

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

- legislation, industry standards, codes of practice and regulations
- manufacturers' specifications and manuals
- NOx mitigation system plant and equipment, its 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/or equipment
- performance tests on NOx mitigation system plant
- permit to work system
- typical arrangements of power production plant
- WHS/OHS legislated requirements including:
 - emergency procedures
 - risk control measures
 - safe working practices
- workplace documentation
- workplace policies and procedures

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

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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.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

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 currently used in industry
- applicable documentation including workplace procedures, industry standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

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