



Australian Government

UEPOPS432 Start up a heat recovery steam generator unit

Release: 1

UEPOPS432 Start up a heat recovery steam generator unit

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 to start up a Heat Recovery Steam Generator (HRSG) for service.

HRSGs are recovery heat exchangers that retrieve the heat from hot gas streams which are then supplied to steam turbines to generate additional electric power. Placing an HRSG in-service will require the entry of a heating medium and the control of water within the steam and/or water drum. It includes monitoring the flow and quality of feedwater, steam pressure and temperature increases and metal temperatures within HRSG design limits so that the HRSG is supplying a constant flow of steam at the required temperature and pressure.

Competency in this unit requires the ability to plan and prepare start up, operate HRSG plant during start up, test and analyse HRSG system faults and complete 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

UEPOPS333 Operate and monitor HRSG hot gas control system

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 HRSG start up work

- 1.1** Safety issues are identified in accordance with Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) regulations and workplace procedures
- 1.2** Work requirements are identified from relevant personnel and documentation, in accordance with workplace procedures
- 1.3** Preoperational checks are carried out on plant, in accordance with manufacturers' recommendations and workplace procedures and site requirements

2 Conduct HRSG start up

- 2.1** Preoperation conditions of the Heat Recovery Steam Generator (HRSG) and gas turbine are established, in accordance with workplace procedures
- 2.2** Minimum operation of gas turbine is established and supported, in accordance with workplace procedures and manufacturers' specifications
- 2.3** Monitoring of HRSG drum level, feedwater flow, steam and metal temperature rates of rise, steam pressure rate of rise and control of steam flow and drainage is carried out, in accordance with manufacturers' specifications and workplace procedures
- 2.4** Exhaust temperature, flow to HRSG and gas turbine power output are adjusted, in accordance workplace procedures, to achieve required steam conditions and demand
- 2.5** HRSG plant is operated within limits of its' design, in accordance with workplace procedures.
- 2.6** HRSG plant is monitored, in accordance with workplace procedures, to detect deviations from required operating conditions
- 2.7** Corrective action is taken to rectify HRSG abnormalities, in accordance with manufacturers' recommendations and workplace procedures

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| 3 Test HRSG plant operation | 3.1 Tests are performed, in accordance with workplace procedures |
| | 3.2 HRSG plant is observed, in accordance with workplace procedures, for correct operational response |
| | 3.3 Corrective action is taken, in accordance with workplace procedures, when response does not meet documentation, plant integrity or personnel safety requirements |
| | 3.4 HRSG plant is returned to required operational status upon completion of testing, in accordance with workplace procedures |
| 4 Analyse HRSG faults | 4.1 Causes of abnormal HRSG plant operating conditions are identified, in accordance with workplace procedures, by analysing technical and operational information |
| | 4.2 Corrective action is taken, in accordance with workplace procedures |
| | 4.3 HRSG plant integrity and personnel safety is maintained, in accordance with workplace procedures, and through consultation with appropriate personnel and technical and operational documentation |
| | 4.4 Appropriate personnel are notified, in accordance with workplace procedures, when defects are detected |
| 5 Complete documentation | 5.1 HRSG plant problems, movements and status are reported, in accordance with workplace procedures |
| | 5.2 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 UEPOPS432B Start up a heat recovery steam generator unit.

Links

Companion Volume implementation guides are found in VETNet -

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