



**Australian Government**

# **UEPOPS141 Start up a heat recovery steam generator unit**

**Release: 1**

# UEPOPS141 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 Electricity Supply Industry – Generation Sector Training Package Release 2.0.

## Application

This unit involves the skills and knowledge required to start up a heat recovery steam generator (HRSG) for service.

HRSG 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 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 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.

## Pre-requisite Unit

UEPOPS101 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 Performance criteria describe the performance needed to

outcomes.

demonstrate achievement of the element.

### **1 Plan and prepare HRSG start-up 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 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 specifications, and workplace procedures

### **2 Conduct HRSG start-up**

- 2.1** Preoperational conditions of the 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 manufacturers' recommendations and specifications, and workplace procedures
- 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' recommendations and specifications, and workplace procedures
- 2.4** Exhaust temperature, flow to HRSG and gas turbine power output are adjusted to achieve required steam conditions and demand in accordance workplace procedures
- 2.5** HRSG plant is operated within limits of design in accordance with workplace procedures
- 2.6** HRSG plant is monitored to detect deviations from required operating conditions in accordance with workplace procedures
- 2.7** Corrective action is taken to rectify HRSG abnormalities in accordance with manufacturers' recommendations and specifications, and workplace procedures

### **3 Test HRSG plant operation**

- 3.1** Tests are performed in accordance with workplace procedures

- 3.2 HRSG plant is observed for correct operational response in accordance with workplace procedures
        - 3.3 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 by analysing technical and operational information in accordance with workplace procedures
    - 4.2 HRSG plant integrity and personnel safety are maintained through consultation with relevant personnel and technical and operational documentation in accordance with workplace procedures
    - 4.3 Relevant personnel are notified when defects are detected in accordance with workplace procedures
  - 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 UEP Electricity Supply Industry – Generation Sector Training Package Companion Volume Implementation Guide.

## Unit Mapping Information

This unit replaces and is equivalent to UEPOPS432 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>

