



Australian Government

MSFGG4014 Operate complex glass processing plant control systems

Release: 1

MSFGG4014 Operate complex glass processing plant control systems

Modification History

Release 1. Supersedes and is equivalent to MSFGG4006 Operate complex glass processing plant control systems.

Application

This unit describes the skills and knowledge required to operate a complex glass processing plant control panel using control loops and a broad range of control algorithms to control plant areas and multiple products and /or process streams.

This unit applies to technicians and/or central control room operators who manage multiple complex tasks and take overall responsibility for the operation of all equipment and processes within the plant area. This may include optimisation of the area using the control system.

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

N/A

Unit Sector

Glass and Glazing.

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Use operator interface	1.1 Correctly use system equipment and features to access control system 1.2 Monitor glass processing task using the operator interfaces selecting appropriate controller modes 1.3 Access required historical data and information from system 1.4 Monitor and acknowledge messages and alarms and take appropriate action in accordance with workplace procedures 1.5 Access and manage advanced control features to meet work requirements

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
2. Access control information	2.1 Access relevant data and information from the control system and drawings by applying systems knowledge 2.2 Determine status of individual pieces of equipment from control panel readings and use information to identify potential faults 2.3 Minimise fluctuations and variations in process through the interpretation of existing trends and control schematics 2.4 Determine and relate overall operating effectiveness of the plant area to the required targets for the area
3. Control process variations and monitor operations	3.1 Use historical data on plant operations to assist the identification of problems and process all available information to identify potential faults 3.2 Make required set point or output changes to meet plant area and process requirements 3.3 Adjust production in response to test results and control panel information 3.4 Monitor key process and environmental variables and take appropriate action according to workplace procedures 3.5 Adjust controller settings in accordance with procedures 3.6 Optimise plant area in accordance with guidelines 3.7 Undertake coordination with stakeholder's external to the plant area based on work requirements 3.8 Accurately record adjustments and variations to specifications and/or schedules and communicate to appropriate personnel within required timeframes
4. Facilitate planned and unplanned process startups and shutdowns	4.1 Select and apply procedures for planned startup and shutdown processes 4.2 Select and apply procedures to unplanned shutdown processes 4.3 Implement emergency responses in accordance with workplace procedures 4.4 Identify and communicate necessary information to all personnel affected by events 4.5 Log required information accurately and regularly
5. Respond to alarms or out of specification	5.1 Identify and prioritise system(s) affected by the alarm or condition and take appropriate action in accordance with workplace procedures

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
conditions and control hazards	5.2 Respond promptly to alarm or incidents in accordance with workplace procedures 5.3 Deal with any out of specification material in accordance with procedures and communicate the problem and/or solution to appropriate personnel 5.4 Record incident information as required by workplace procedures and communicate details of the alarm and action taken to the next shift at change over 5.5 Follow up incidents to confirm that appropriate action has been taken 5.6 Identify hazards in the production and/or processing work area and assess the risks arising from those hazards 5.7 Implement measures to control risks in line with workplace procedures and duty of care
6. Resolve other problems within scope of responsibility	6.1 Identify possible problems in equipment, control systems or process to determine problems needing action 6.2 Establish possible fault causes and rectify problem using appropriate solution within area of responsibility 6.3 Follow initiated control actions until resolution and report problems outside area of responsibility to designated person

Foundation Skills

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

Unit Mapping Information

Supersedes and is equivalent to MSFGG4006 Operate complex glass processing plant control systems.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

Assessment Requirements for MSFGG4014 Operate complex glass processing plant control systems

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and:

- determined, analysed and acted on all of the following causes of problems, alarms and/or fault indications at least once, including:
 - instrument failure or malfunction
 - electrical failure or malfunction
 - mechanical failure or malfunction
 - equipment design deficiencies
 - product parameters (temperature, flows, pressure and levels)
 - process control system malfunction
 - power or utility failures
 - software problems.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- basic science of upstream and downstream glass processes
- glass product specifications and tolerances
- general operating principles and features of glass processing plants, including:
 - process control philosophies, strategies and systems, including multiple control systems
 - systems operating parameters and integrity limits
 - architecture and location of the glass process and/or production equipment
 - interactions between glass plant items and/or processes and between plant units within entire plant
 - communication systems and techniques for effective communication
 - fire and gas detection and protection systems
 - emergency shutdown procedures
- organisational procedures for the operation of a specific plant control system
- features and functions of control loops, including:
 - interactions between multiple control loops

- cascade control
- piping and instrumentation (P&ID) control
- set points
- controlled variable and indicated variable
- features and functions of instrumentation and control systems and components, including:
 - feed forward, feedback and open control
 - sensing devices
 - final control elements
 - transducers and/or transmitters
- impacts of changing controller settings and the limits within which changes can be made
- features of typical problems encountered in a glass processing plant, and the process of how to respond, including for:
 - operating without advanced control features
 - loss of power or utilities
 - analysing failure modes
 - variation and/or loss of feed
 - unstable control of pressure, temperature level and flows
 - control equipment failure
 - process plant trips
 - change in atmospheric conditions (rain, temperature, wind and lightning)
 - emergency situations
 - how to interpret complex process drawings, including P&ID diagrams, probability of failure on demand (PFD) and cause and effect.

Assessment Conditions

Skills must have been demonstrated in a glass processing workplace.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

Links

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