



Australian Government

Assessment Requirements for PMAOPS315 Operate and troubleshoot process control systems

Release: 1

Assessment Requirements for PMAOPS315 Operate and troubleshoot process control systems

Modification History

Release 1. Unit code and title changed. Application and Performance Criteria changed. Range of Conditions removed. Assessment Requirements changed. Supersedes and is equivalent to PMAOPS305 Operate process control systems.

Performance Evidence

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

- at least 2 times, each in a separate work context.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- process control systems, including:
 - the function and location of the equipment
 - operating parameters and integrity limits
 - impact of external factors, including variations in weather and feed
 - emergency shutdown procedures
 - control system architecture
 - basis of control for the plant/s
 - types of instrumentation and control systems, including feedforward, feedback and open control
 - types of instrumentation and control system components and their role, including primary sensing devices, final control elements and transducers and transmitters
 - how control loops and their components, including proportional integral derivative (PID) control, set points, controlled variable and indicated variable, operate to control the process, and their limitations
 - interaction between multiple control loops, including cascade control
 - impacts of changing controller settings and the limits within which changes can be made
 - uninterruptable power supplies (UPS) and its applications and use
- organisational processes and procedures, including:
 - interactions between plant items and processes
 - specific plant process operations
 - process drawings, such as piping and instrumentation diagram (P&ID) and process flow diagrams (PFD)
 - process control philosophies and strategies

- physics and chemistry to the level of being able to provide an overview of the science of the process control system
- basic science of upstream and downstream processes
- principles of cause and effect
- product specifications and tolerances
- process control system abnormal situations and required action including but not limited to:
 - instrument failure and malfunction
 - electrical failure and malfunction
 - mechanical failure and malfunction
 - equipment design deficiencies
 - product parameters (temperature, flows, pressure and levels)
 - process control system malfunction
 - power and utility failures
 - variation in feed rate; quality or loss of feed
 - unstable control of pressure, temperature, level and/or flows
 - unstable and suboptimal operation
 - control equipment failure
 - process plant trips
 - change in atmospheric conditions (rain, temperature, wind and lightning)
 - emergency situations
- process control system hazards:
 - possible causes
 - potential consequences
 - appropriate risk controls
 - reporting and escalation procedures.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - plant, process control system, interface
 - operating procedures
- abnormal situations must be relevant to process control systems.

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

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=9fc2cf53-e570-4e9f-ad6a-b228ffdb6875>