Title | Utilise a Distributed Control System (DCS) in the operation of an electricity generation power station

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Purpose | People credited with this unit standard are, in an electricity supply environment, able to: demonstrate knowledge of DCSs; carry out operations using a DCS; carry out alarm and event management; and manipulate data using a DCS.

Classification | Electricity Supply > Electricity Supply - Power System Management

Available grade | Achieved

Guidance Information

1. This unit standard is intended for, but not restricted to, workplace assessment. The range statements across the unit standard can be applied according to industry specific equipment, procedures, and processes.

2. Safety of personnel and plant must be a priority throughout the assessment. If the safety requirements are not met the assessment must stop and the candidate will be assessed as not yet competent.


4. Industry requirements include all industry and workplace documented policies, procedures, specifications, business and quality management requirements relevant to the workplace in which assessment is carried out.

5. Practical exercises should be used for training and assessment wherever possible.

6. For the purpose of this unit standard the term distributed control system (DCS) includes: Supervisory Control and Data Acquisition (SCADA), Man Machine Interfaces (MMI).
Outcomes and performance criteria

Outcome 1
Demonstrate knowledge of DCSs.

Performance criteria

1.1 Terminology and abbreviations associated with DCSs are identified and explained.

1.2 System configuration is described.

Range may include but is not limited to – operating system, digital inputs and outputs, analogue inputs and outputs, central processing units (CPU), back-up/redundancy system, integration with other plant systems’ DCSs.

1.3 The control logic used in DCSs is demonstrated using a simple diagram.

Outcome 2
Carry out operations using a DCS.

Performance criteria

2.1 Navigation around screens is demonstrated.

Range may include but is not limited to – dropdown menus, overview screen, toolbar navigation, alarm point navigation, ‘quick’ buttons.

2.2 Operating system is used to carry out functional operations.

Range may include but is not limited to – printing, navigation, security, screen/window management, profiles, ‘snapshots’, file management.

2.3 Current status of plant is verified in accordance with industry requirements.

2.4 Plant sequences are operated and monitored in accordance with industry requirements.

Range may include but is not limited to – automatic plant sequence, sequence tracking, auto/manual start/stop.

2.5 Function groups are operated in accordance with industry requirements.

Range may include but is not limited to – manual/auto, start/stop, reset.
2.6 Valves and pumps are operated in accordance with industry requirements.

Range may include but is not limited to – manual/auto, start/stop, duty/standby, alter set points, control valve inching.

Outcome 3

Carry out alarm and event management.

Performance criteria

3.1 Types and priorities of alarms are identified.

Range may include but is not limited to – alarm warning (advisory or critical), alarm tolerance.

3.2 Alarms screens are interpreted and explained.

Range may include but is not limited to – new, current, acknowledged, reset.

Outcome 4

Manipulate data using a DCS.

Range current and historical.

Performance criteria

4.1 Data is used for event and process investigation.

Range may include but is not limited to – filter, retrieve historical data, trends, reports, logic diagrams, logs, sequence of events.

4.2 Trends are set up to display data.

Range may include but is not limited to – scale, range, add/remove tags, retrieve historical data.

4.3 Screen dumps are carried out.

Range may include but is not limited to – hard copy, electronic copy.

This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.
Status information and last date for assessment for superseded versions

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<tr>
<th>Process</th>
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<tbody>
<tr>
<td>Registration</td>
<td>1</td>
<td>25 September 2006</td>
<td>31 December 2020</td>
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<tr>
<td>Review</td>
<td>2</td>
<td>24 January 2019</td>
<td>31 December 2020</td>
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Consent and Moderation Requirements (CMR) reference 0120