



Australian Government

Assessment Requirements for UEEIC0038

Solve problems in density/level measurement components and systems

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including applying safe working practices
- applying sustainable energy principles and practices
- cleaning and making work site safe
- completing work and documenting work activities
- dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- documenting completed work
- implementing risk control measures
- obtaining tools, equipment and testing devices
- determining work on density/level measurement components and systems
- solving density/level measurement problems
- solving problems in density/level measurement systems
- working with density/level apparatus.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- introduction to level/density measurement. including:
 - definitions density and relative density (sg)
 - application
 - factors affecting density
 - density measurement
 - Archimedes principle
 - density calculations

- types and applications of level/density transducers
- transducers input/outputs (I/O) - measurement and evaluation
- transducer connections
- level/density measurement techniques sight type, including:
 - dipstick and hook gauges
 - tubular and flat glass gauges
 - accuracy of flat glass gauges
 - magnetically coupled gauges
 - float level measuring devices
 - application of float devices
- level/density measurement - force type techniques, including:
 - comparison of float and displacement type systems
 - interface sensing devices
 - torque tube type displacer operation
 - torque tube type displacer construction
 - pneumatic and electronic transmitters
- level/density measurement - pressure-type techniques, including:
 - diaphragm level detectors
 - applications of diaphragm level detectors
 - differential pressure cells advantages and disadvantages
 - density measurement using D/P cells
- level/density measurement - electrical type techniques, including:
 - application of conductance probes
 - operation of a conductivity-level controller
 - resistance tapes level detectors
 - capacitance probes level detectors
 - ultrasonic level detectors
 - microwave-based level detectors
 - nucleonic-type level sensors
 - load cells used for level measurement
- level/density measurement - non-intrusive type techniques, including:
 - radiation-type density sensor
 - hydrometer element used for density measurement
 - vibrating tube type liquid density meter
- level/density measurement calibration for:
 - D/P cell calculations
 - D/P calibration
 - open tank installation level measurement
- problem solutions in density/level measurement systems
- relevant job safety assessments or risk mitigation processes, including risk control measures

- relevant manufacturer specifications
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures
- safe working practices.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>