



Occupational Area:	Asset/Site – Installation Electrician
Job Role Examples:	Electrical Installation Technician or Electrician
Role Overview:	
<p>Installation Electricians are responsible for the installation, inspection, testing, commissioning and diagnosis of faults in electrical plant and its associated cabling and equipment. These activities are typically undertaken on equipment such as electrical distribution systems, generators, electric motors, HVAC (Heating, ventilation and air-conditioning) systems. To achieve these functions the Installation Electrician must be able to interpret technical specifications and drawings and, where necessary demonstrate the effective use of reasoning skills in the resolution of faults and problems. Whilst Installation Electricians are required to use specialist tools and equipment, they also routinely use traditional hand tools and test equipment during the execution of their duties. Installation Electricians undertake these tasks on sites such as petrochemical plants, upstream and downstream oil and gas installations, power generating plants, chemical plants and food processing and other processing plants, which often necessitates them working in hazardous conditions.</p>	
Knowledge & Skills:	
<p>The Installation Electrician will:</p> <ul style="list-style-type: none">• Have the required competencies to install, inspect, test, commission and diagnose faults in electrical plant and its associated cabling and equipment to the required standard while adhering to health, safety and environmental regulations and safe working practices, and taking into account environmental and sustainability considerations.• Understand the relevant legislative, regulatory and local requirements or procedures and safe working practices, including their responsibilities with regards to reporting lines and procedures.• Understand the preparation and reinstatement requirements in respect of the work area, materials and equipment, and the possible consequences of incorrect actions in these areas.• Be able to read and interpret relevant engineering drawings, related specifications, quality standards and equipment manuals, and to follow work instructions and relevant plans and schedules.• As necessary, put forward suggestions and develop modification requests to improve plant/equipment efficiency/safety of operations.• Understand which tools and equipment to use and know when these are required. Relevant training and taught techniques should be demonstrated to ensure compliance to safety procedures and quality control at all times.• Understand their responsibilities for ensuring the care and security of tools and equipment used.• Understand the types of defects and faults that can occur, how to identify them, and what action to take.• Be able to handle a range of digital information, technology and equipment to support work related tasks and to communicate information.	
Technical Competencies:	
<ul style="list-style-type: none">• TIE04 - Install Electrical Distribution Final Systems - safely isolate a Three Phase Distribution Board, install single & three phase final circuits, and carry out suitable 'Dead' Tests using appropriate materials, equipment, tools and techniques.• TIE08 - Installing AC Electrical Motors - Install suitable cables, terminate and test a three-phase motor, using appropriate materials, equipment, tools and techniques.• TIE15 - Installing support systems - measure, cut, shape construct, and install a cable support system to specification. Construct and install a cable support consisting of tray and channel components to specification• TIE16 - Installing cables in an Intrinsically Safe system - select, gland & terminate industrial type cable into an Intrinsically Safe installation, and safely follow the installation Loop drawing.• TIE17(Ex) - Install, Gland and Terminate Power Cables - Select, gland & terminate industrial type cables (E.g., Braid and SWA) to a suitable component (E.g., Junction Box) and associated cable tray in line with details on the appropriate specification.	



Behaviours:

- Establish and maintain effective working relationships, communicate effectively, and work inclusively to deliver work within given specifications.
- Demonstrate team working skills and interact with team members in a positive and professional manner.
- Work within an overall risk control strategy which has been developed by safety specialists and includes detailed criteria for identifying risks, together with clearly defined procedures for action which must be followed.
- Take personal ownership of, and responsibility for, completing tasks and procedures. Follow procedures and relevant codes of conduct with integrity and rigour and complete actions and documents accurately and honestly.
- Take responsibility for identifying and reporting instances where procedures or work instructions cannot be met or where a variation in them is required.
- Deal promptly and effectively with problems within their control and report those that have been, and those that cannot be, solved.
- Take responsibility for supervising and mentoring others where appropriate.
- Demonstrate the ability to coordinate work scopes and SIMOPS (Simultaneous Operations) effectively within a wider team, as required.
- Demonstrate effective handover of responsibility and equipment at the end of a task.
- Take responsibility and ownership of personal development, set targets to plan on how these will be achieved.
- Support operational requirements, achieve targets and maintain records as required, thereby minimising backlog and downtime.
- Maintain compliance with legislative requirements and company policies, procedures and standards.
- Maintain and demonstrate ongoing technical competence and skill set to current standards and updates.
- Support innovation and development for improvements.

Determining Work scopes:

Other categories of workers may be mobilised to complete certain stand-alone activities/work scopes within the electrical installation discipline. Relevant technical tests for those workers are identified below:

- Ex Inspection – Test reference TIE17 / TIE17Ex Install, Gland and Terminate Power Cables
- Ex Inspection – Test reference TIE16 Installing cables in an Intrinsically Safe system

Although appropriately qualified for these specific work scopes, it should be noted that without the full suite of electrical installation tests the person should not be deemed as demonstrating full 'currency of competence' across the electrical installation discipline.

Where different sectors have additional specific competency requirements, these are also highlighted in the accompanying **Supporting Notes for Connected Competence**



The Connected Competence standard role profile for an Installation Electrician sets out the knowledge and skills, technical competencies and behaviours that are expected from a fully competent electrical installation technician in any sector of the engineering construction industry. Attainment of these is achieved through training and on-site experience/exposure and is measured through standardised assessment. Once competence is achieved, regular testing ensures that ongoing competence is maintained.

This supporting document highlights additional requirements that are specific to any engineering construction sector.

Sector Specific Competency Requirements

OFFSHORE - OIL & GAS

Prerequisite/Premobilisation Qualification Requirements

Prior to embarking on the formal assessment cycle, an individual would be expected to have core trade qualifications as a minimum requirement:

- ECITB, Scottish Joint Industry Board (S/JIB), City & Guilds or other relevant apprenticeship, or relevant vocational qualification (VQ)
- Valid Connected Competence Knowledge Only (KO) test or certificate of current technical tests (if the KO test has been superseded by Technical Tests)
- Valid Ex Inspection tests - Connected Competence TIE17 & 16 or alternatively CompEx modules Ex 02 & 04

Given the hazardous nature of the working environment, the overall risk control strategy for organisations within the offshore industry will usually require Installation Electricians to be familiar with, and work within, a formal Permit to Work system. Compliance with a specific company or site safety management system (SMS) will also usually be required. Specialist safety training may also be required as a prerequisite in addition to role specific training.

Installation Electricians will be expected to be certified, trained and competent in conducting LV isolations and switching, and to have had adequate training in the relevant current IET Regulations.

In addition to the core technical competence tests, fully competent electrical installation technicians will be expected to have achieved:

- Relay protection training
- LV/HV switching and isolating procedures training
- HV Authorisation
- SAEP Authorisation

Within the offshore sector, Installation Electricians electrical maintenance technicians may also be required to carry out / witness cable tests and test runs of vendor/specialist repaired equipment/plant and sign documentation to verify acceptance.