

ELECTRICAL ENGINEERING

GUIDED WORK EXPERIENCES



PetroSkills Guided Work Experiences (GWEs) enable technical professionals to deliver a tangible work product through specific deliverables and performance measures. GWEs have been developed by industry experts and deliver the on-the-job connection between knowledge and action.

General Principles

- Select protection methods for instrumentation in hazardous locations
- Participate in a HAZOP
- Participate in a LOPA
- Participate in a SIL Study
- Gather control system data during a site-visit for expansions or as-builts
- Conduct a pre-bid meeting
- Produce a contractor scope of work
- Review a set of P&IDs
- Participate in a 3D Model Review
- Generate a spare parts list
- Conduct a factory acceptance test on a control system
- Review an equipment packager control system
- Review a Burner Management System
- Determine locations for fire and gas detection equipment
- Evaluate hazardous area classifications and ventilation calculations
- Participate in an Alarm Objective Analysis
- Perform Loop checks during pre-commissioning

Instrumentation

- Select materials of construction for sour service
- Select materials of construction for high temperature service
- Specify a Pressure Transmitter / Gauge
- Specify a Level Gauge
- Specify a Magnetic Level Indicator
- Specify a Level Switch
- Specify a DP Level Transmitter
- Specify a Gas Detector
- Specify a Fire Detector
- Specify a Temperature Sensor / Transmitter / Switch / Gauge / Thermowell
- Specify a Radar Level Transmitter
- Specify a Capacitance Level Transmitter / Switch
- Specify a Displacer Level Transmitter / Controller
- Specify a Nuclear Level Transmitter
- Specify a Gas Chromatograph
- Specify an Analyzer (General)



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Metering

- Select a Flow Meter for Process Control
- Select a Liquid Flow Meter for Custody Transfer
- Select a Gas Flow Meter for Custody Transfer
- Specify a Orifice Meter
- Specify a Coriolis Meter
- Specify a Turbine Meter
- Specify a Magnetic Flow Meter
- Specify an Ultrasonic Flow Meter
- Specify a Vortex Flow Meter
- Specify a Positive Displacement Flow Meter
- Observe a meter calibration or proving

Control Valves

- Specify a Control Valve for Liquid Application
- Specify a Control Valve for Gas Application

Cable / Conduit / Cable Tray

- Size a Cable tray for Instrument Cables
- Size a Conduit
- Select cable types for instrumentation

Control System Hardware

- Evaluate control system hardware
- Evaluate a control system network architecture
- Review a control panel design
- Specify a Flow Computer

Control System Software

- Review a Cause and Effect Diagram
- Review a Control System Narrative / Functional Description
- Review an Operator Interface Design