

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

- Participate in a 3D Model Review
- Perform Technical bid evaluation
- Review a One-Line Diagram
- Specify Electrical Equipment for Hazardous Locations
- Specify an Uninterruptable Power Supply for Process Control System
- Evaluate electricity costs

Distribution Equipment

- Configure a protective relay
- Perform a acceptance test on power distribution equipment
- Select Protective Relay Schemes
- Specify Power Factor Correction Equipment
- Specify a Lighting / Power Panel and associated transformer and Protection
- Specify a LV MCC
- Specify an Uninterruptable Power Supply for Power System Control/Protection
- Specify LV Switchgear
- Specify LV Transformer
- Specify MV Pad Mount Oil Filled Transformer
- Specify MV Substation Transformer
- Specify a Neutral Grounding Resistor
- Specify Power Poles and Support Structures
- Perform Slack / Span Calculations
- Specify Power Quality components

Cables / Conduit / Cable Tray

- Evaluate cable tray support systems
- Evaluate insulated cable specifications
- Perform Cable Tray fill Calculation
- Perform Conduit fill Calculation
- Size LV Conductors
- Size MV Conductors
- Specify Sub-Sea Cables

Generators

- Evaluate Generator Sizing
- Specify Generator Package
- Specify a Transfer Switch

Motors / Motor Control

- Evaluate motor control schematics
- Perform a acceptance test on an electric motor driven pump or compressor
- Specify a LV ASD / VFD
- Specify a LV Motor Starter
- Specify a MV ASD / VFD
- Specify a MV Motor Starter
- Specify Harmonic Mitigation Equipment
- Specify LV Motor
- Specify MV Motor
- Troubleshoot a motor problem
- Analyze a motor failure
- Troubleshoot a motor starting problem on a ASD / VFD / Soft Start



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Lighting Systems

- Perform indoor lighting calculations
- Perform outdoor lighting calculations
- Specify a Lighting control system
- Evaluate lighting levels during design or in an existing facility

Power System Modelling

- Model a facility power system
- Perform Arc Flash Hazard Analysis
- Perform Coordination Study
- Perform harmonic analysis
- Perform short circuit study
- Perform motor starting analysis

Heat Tracing Systems

- Perform Heat Trace Sizing Calculations
- Specify heat trace power and control systems

Reliability

- Perform reliability calculation for distribution system
- Perform reliability calculation for a generation system
- Evaluate Predictive Maintenance Test results and estimate equipment life