



### Typical Basic / Intermediate Training Course Program

This **Basic / Intermediate SCR Training Program** focuses on essential system concepts – ideal for training the student to identify a faulty sub-system or electronic module or card, while avoiding detailed involvement with the electronic cards themselves, thus encouraging the student to simply change out the faulty card or component for a spare. The course is ideal for a competent rig electrician who has no previous SCR experience, and who needs to gain familiarity with the Hill Graham / Ross Hill type of system. An Intermediate to Advanced level course is also available.

#### Introduction

##### Basics of Rectification

- Diode Operation
- Testing a Diode
- Single Phase Bridge
- Three Phase SCR Bridge
- SCR Rectification
- Testing an SCR
- SCR Failure Modes
- SCR Protection (snubbers)

#### SCR DC Motor Control

- DC Motors
- Voltage Feedback
- Current Feedback
- Control Loops
- DC Module Electronics

#### Generators

- Exciter Control
- Actuator Control
- AC Module Electronics

#### Practical Oscilloscope Training

##### DC and AC Module practical session with oscilloscope

#### SCR System Logic

- Assignment logic
- SCR control circuits
- Logic indicators
- Purge cycles and remote auxiliaries
- Troubleshooting
- Passive Field Supply
- Active Field Supply
- Mud Pump Active load sharing

#### Changing a Thyristor Puck Practical exercise

##### Includes Practical session with fault finding simulator

#### System Circuits

- Power Limit
- Driller's Console
- Sprocket Slip
- AC Ground Fault Detection
- DC Ground Fault Detection
- Dynamic Braking
- Regenerative Braking
- Surge Suppression
- Schematic drawings

#### Question and Answer Session