

MK VI SPEEDTRONIC CONTROL SYSTEM MAINTENANCE

Course Objectives

To enable an engineer to be fully conversant with all aspects of the MK VI Control System and would have significantly increased confidence/experience in the areas of troubleshooting/fault finding.

Course Description

The MK VI Speedtronic Control System is a complex and multi-faceted system. This course provides a detailed examination of all the main aspects of the MK VI Control System. This will include MK VI Speedtronic Hardware, Software and a detailed evaluation of Control System Theory/Sequencing. The student will also benefit from a detailed description of troubleshooting techniques and will be allowed to practice these skills with a variety of simulated faults on a Speedtronic Gas Turbine Simulator.

Who Should Attend

This is an essential course for those engineers/technicians involved with the troubleshooting of Gas Turbine faults using a MK VI Speedtronic Control System. On completing this course an engineer would expect to be fully conversant with all aspects of the MK VI Speedtronic Control System and would have significantly increased confidence/experience in the areas of troubleshooting/fault finding. Gas Turbine operators who are looking to advance their career potential would find the course useful and would those Team Leader/Shift Supervisors wishing to increase their knowledge of the MK VI Speedtronic Control system.

Pre-Requisites

All Attendees should have a sound power generation background and have used a MK VI Control system.

Course Outcome

At the end of this course you will be able to maintain a gas turbine using a MK VI Control System.

Course Outline

Day 1

Introduction

Introduction Speedtronic Mark VI
GE Gas Turbine Fundamentals and control basics

Day 2

Speedtronic Mark VI hardware

Panel, modular concept discussion
Mark VI cards
Internal and external Mark VI wiring
Hardware documentation
The main protection system VPRO
Supply voltage

Day 3

Operator Interface Overview

MK VI toolbox
The M6B file, functions, modules and tasks
The Finder
Cimplicity Server
Cimplicity Startup/Shutdown
Menu System and Structure

Day 4

Gas Turbine Control

Startup Control
Speed Control
Temperature Control
Shutdown Control

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Gas turbine Protection

Overtemperature Protection
Overspeed Protection
Vibration Protection

Day 5

Data Structure of the operator interface <HMI>

Brief discussion of the Windows 2000/XP based operator interface
Most important files of the operator interface and their function
Failure of the operator interface, what to do
Communications with the operator interface, Ethernet and DCS communications

Day 6

Mark VI tools (TOOLBOX practice)

Trend Recorder Historical trip display Alarms and SOE's
Troubleshooting Alarms
Practical Troubleshooting and fault finding
Mark VI software structure
M6B file downloading
M6B file verification

Day 7

Practical exercise: Mark VI software with TOOLBOX

Adding Digital input
Adding Digital output
Adding Alarms
Adding Rungs

Day 8

Updating Cimplicity (HMI)

Adding Alarms
PUT/Get Database
Changing Cimplicity Screens
EGD data
Changing menu structure

Day 9

Practical exercise : Linking data to HMI

Creating Alarm Drop
Adding EGD Data
Reading / Writing EGD Data
Building CRM file

Day 10

Additional Information
Process Changing
Trending (HMI)
Trip history

Course Review and Feedback