

Mark VIe Turbine Control System Foundation Course

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Overview

Mark VIe Turbine Control System Foundation Course is a one-week programme for control engineers, technicians, operators and commissioning personnel who leave with a Mark VIe System Inspection and Diagnostic Workbook. Participants trace architecture, controllers, I/O packs, IONet communications, ControlST and ToolboxST functions, operator interfaces, alarms, trips, backups and maintenance evidence. Activities use documentation and simulated records rather than live-system changes. Agile Leaders Training Center presents Mark VIe turbine control through structured technical checks.

Who Should Attend

- Teams responsible for gas turbine control-system operation and monitoring
- Personnel maintaining instrumentation, controllers, networks and I/O interfaces
- Engineers supporting commissioning, testing and handover activities
- Reliability functions analysing control-system faults and recurring diagnostics
- Supervisors planning controlled maintenance and configuration work

The course assumes participants can read basic electrical, instrumentation and control diagrams, and it leaves out turbine mechanical overhaul, live logic modification, site authorization and safety-system certification.

Departments and Industries

The course supports departments and industries that operate or maintain Mark VIe-based turbine and plant control applications.

- Power generation and combined-cycle plants
- Oil, gas and petrochemical facilities
- Utilities and industrial energy systems
- Instrumentation, control and automation departments
- Operations, maintenance, commissioning and reliability teams

Learning Objectives

By the end of this course, participants will be able to:

- Analyze Mark VIe architecture, redundancy and signal paths
- Use hardware and network information to locate system components
- Apply ToolboxST navigation to configuration and diagnostic records
- Prioritize alarm, trip and controller diagnostic evidence
- Build controlled backup, restore and change-documentation checks
- Evaluate commissioning and maintenance readiness against approved procedures

Course Agenda

Day 1: Architecture, Controllers and Redundancy

- Mark VIe Platform Scope and Application Map
- Simplex, Dual and Triple-Redundant Architecture
- Controller, Power and Supervisory Interface Roles
- Signal Path from Field Device to Control Logic
- Mark VIe System Inspection and Diagnostic Workbook Structure

Day 2: I/O Packs, IONet and System Interfaces

- I/O Pack Function and Terminal Interface Identification
- IONet Ethernet Communication Path
- Controller, Operator and Maintenance Station Connectivity
- Time-Coherent Data and Signal Quality Checks
- Network, Power and Hardware Diagnostic Indicators

Day 3: ControlST, ToolboxST and Operator Information

- ControlST Suite and ToolboxST Workspace Navigation
- Hardware and Software Configuration Record Review
- Block Diagrams, SAMA Formats and Sequential Function Charts
- Trending, Finder, Variables and Diagnostic Messages
- Operator Interface, Events and Process-Information Trace

Day 4: Alarms, Trips and Controlled System Changes

- Alarm, Event, Trip and Diagnostic Evidence Hierarchy
- First-Out Information and Cause-to-Effect Trace
- Configuration Revision History and Change Approval
- Backup, Restore and Baseline Verification Controls
- Cybersecurity-Aware Access and Removable-Media Practices

Day 5: Troubleshooting, Maintenance and Commissioning

- Exercise: Trace a Field Signal through I/O and Control Logic
- Exercise: Review Controller, I/O Pack and Network Diagnostics
- Exercise: Investigate an Alarm and Trip Evidence Set
- Exercise: Verify a Backup, Change and Restore Record
- Capstone Exercise: Complete a Mark VIe System Inspection and Diagnostic Workbook

Practical Exercises

The course uses suggested activities based on approved documentation, offline examples and simulated system records.

- Suggested activity: map controllers, I/O packs, IONet segments and operator stations
- Suggested activity: use trends and diagnostic messages to isolate a simulated fault
- Suggested activity: compare configuration revisions and identify unauthorized differences
- Suggested activity: prepare commissioning checks and a controlled maintenance handover

FAQs

Who is the course for and what does it assume?

It suits control engineers, technicians, operators, commissioning personnel and supervisors. It assumes basic familiarity with instrumentation diagrams, signals and industrial control concepts.

How does this differ from a general DCS course?

This course concentrates on Mark VIe architecture, I/O packs, IONet, ControlST and ToolboxST. A general DCS course compares broader control concepts and multiple platforms.

Does the course authorize live logic changes?

No. Configuration and diagnostic work uses documentation and offline or simulated examples. Live access, downloads and modifications require employer authorization, approved procedures, backups and site controls.

Does it cover Mark VIeS safety-system certification?

No. The course identifies the Mark VIeS distinction and interface only. Safety lifecycle work, certified hardware and safety instrumented-function programming require specialist training and authorization.

What practical output is completed?

Participants complete a Mark VIe System Inspection and Diagnostic Workbook covering architecture, signals, diagnostics, alarms, backups, controlled changes and commissioning evidence.

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Conclusion

Participants leave with a repeatable method for reading Mark VIe system information, tracing signals, interpreting diagnostics and documenting controlled work. The workbook connects architecture, software records, alarms and maintenance evidence while manufacturer documentation, approved procedures and authorized access remain in charge.

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