GE LM 2500 Gas Turbine

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This five-day course begins with a review of gas turbine theory. Next, the major components of the GE LM 2500 turbine are described before reviewing the air inlet/filtration system, compressor, combustion system, turbine section, support systems, and protection system. Finally, we discuss common turbine failures and how to troubleshoot various turbine problems.

I. Gas Turbine Theory

- Laws and Principles
- Terms

II. General Characteristics

- Basic Gas Turbine Cycle

III. Major Components

- Compressor Front Frame
- Compressor
- Combustor
- Turbine Mid Frame
- High Pressure Turbine
- Accessory Drive Section
- Low Pressure Turbine
- Turbine Rear Frame
- High Speed Flexible
- Bearings and Sumps
- Air Seals
- Oil Seals
- Engine Fuel System
- Engine Oil System
- Sensors

IV. Principles of Operation

- Controls
- Start up
- Shutdown
- Emergency

V. Parameters / Operating Limits

- Gas Generator Speed
- Power Turbine Speed
- Turbine Temperature
- Vibration
- Lube Oil Pressure
- Fuel Manifold Pressure
- Start Air Pressure
- Lube Oil Temperature
- Inlet Air Temperature (Icing)
- Module Temperature
- Cooling and Combustion Air Differential
- Pressure

VI. System Interface

- Gas Generator Speed
- Power Turbine Speed
- Turbine Temperature
- Vibration
- Lube Oil Pressure
- Fuel Manifold Pressure
- Start Air Pressure
- Lube Oil Temperature
- Inlet Air Temperature (Icing)
- Module Temperature
- Cooling and Combustion Air Differential
- Pressure

VII. Safety Precautions

- Handling Synthetic Lube Oil
- When Operating This System

VIII. Gas Turbine Module System

- Air inlet System
- Inlet air Chamber
- Inlet Duct
- Cooling Duct
- Gas Turbine Module (GTM)
- Inlet Plenum Chamber
- Base
- Engine Compartment
- Combustion Air System
- Exhaust System
- Exhaust Duct
- Vent Damper
- Flame Detectors
- Enclosure Heaters
- Ice Detectors
- Lighting
- Temperature Detectors
- Moisture Separator (Demister Pads)

IX. Support / Site System

- Water Wash System
- Power Supplies
- Starting System
- Cooling System
- Service Air

X. Maintenance

- Maintenance Planning
- Maintenance Inspections
- Levels of Maintenance
- Standard Maintenance Practices

XI. General Inspections

- Intake Air System
- Inlet Plenum
- Module
- Cooling System
- Service Air

XII. Generator

- Generator
- Generator Cooling System
- Generator Oil System
- Enclosure
- Reduction Gear