



## PHASE 348 RT48 Power Turbine Maintenance

<b>Who should attend</b>	: Mechanics and maintenance support personnel.
<b>Duration</b>	: 2 days (between Mon-Fri)
<b>Location</b>	: RR Facility / Customer Facility on-shore
<b>Class Size</b>	: 12 Maximum
<b>Course Identification</b>	: Phase 348 (RT48)
<b>Prerequisites:</b>	: None

### AIMS:

The course is designed to give the attendees a detailed knowledge of the RT48 Power Turbine.

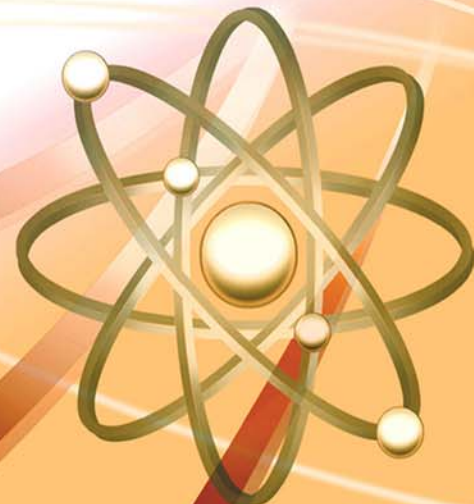
### OBJECTIVES:

Upon successful completion of the course, the attendee will be able to:

- List and describe the Power Turbine construction and theory of operation.
- Explain the purpose and location of instrumentation sensors.
- Explain the normal and abnormal conditions based upon observed parameters
- Describe the purpose of proper start up and routine maintenance procedures.
- Identify the required auxiliary support systems including:
  - Mineral oil, normal, coast down, post lube
  - Instrument, bleed, seal and cooling air
  - Instrumentation
- Describe procedures and special tools to remove / install the power turbine rotor.

### COURSE CONTENTS:

- Course Induction.
- Power Turbine Major component identification and purpose
  - Rotor / Stator and Support component build up
  - Rear Support, bearing case, rotor assembly, journal bearings, thrust bearings, thrust collar, coupling hub
  - Front Support, mount ring, 2<sup>nd</sup> blade case, 2<sup>nd</sup> nozzle case, diaphragm support, 1<sup>st</sup> nozzle case, inlet diffuser, power turbine support spring
- Instrumentation sensors.
  - Speed pickup, bearing RTD, Shaft vibration, Rim cooling thermocouple
- Operation and Monitoring.
  - Startup, Warm up, Rim Cooling, Disc life, Seal inspection and adjustment, power output, inspection criteria
- Life Cycle Maintenance.
  - Continuous site evaluation during operation, Oil sample, vibration analysis, seal air test and adjustment, coupling and alignment, borescope, Blade tip clearance, Bearing inspection, Rotor removal.





## PHASE 356 RT56 Power Turbine Maintenance

<b>Who should attend</b>	: Mechanics and maintenance support personnel.
<b>Duration</b>	: 2 days (between Mon-Fri)
<b>Location</b>	: RR Facility / Customer Facility on-shore
<b>Class Size</b>	: 12 Maximum
<b>Course Identification</b>	: Phase 356 (RT56)
<b>Prerequisites:</b>	: None

### AIMS:

The course is designed to give the attendees a detailed knowledge of the RT56 Power Turbine.

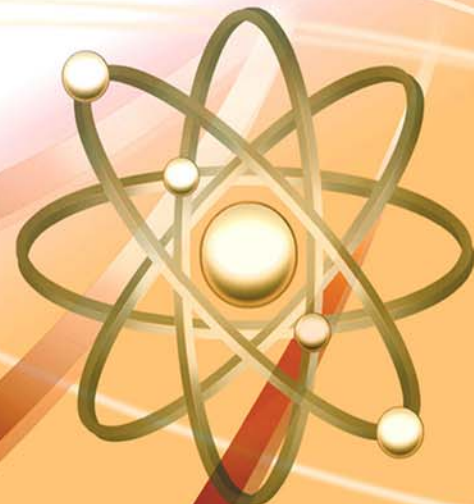
### OBJECTIVES:

Upon successful completion of the course, the attendee will be able to:

- List and describe the Power Turbine construction and theory of operation.
- Explain the purpose and location of instrumentation sensors.
- Explain the normal and abnormal conditions based upon observed parameters
- Describe the purpose of proper start up and routine maintenance procedures.
- Identify the required auxiliary support systems including:
  - Mineral oil, normal, coast down, post lube
  - Instrument, bleed, seal and cooling air
  - Instrumentation
- Describe procedures and special tools to remove / install the power turbine rotor.

### COURSE CONTENTS:

- Course Induction.
- Power Turbine Major component identification and purpose
  - Rotor / Stator and Support component build up
  - Rear Support, bearing case, rotor assembly, journal bearings, thrust bearings, thrust collar, coupling hub
  - Front Support, mount ring, 2<sup>nd</sup> blade case, 2<sup>nd</sup> nozzle case, diaphragm support, 1<sup>st</sup> nozzle case, inlet diffuser, power turbine support spring
- Instrumentation sensors.
  - Speed pickup, bearing RTD, Shaft vibration, Rim cooling thermocouple
- Operation and Monitoring.
  - Startup, Warm up, Rim Cooling, Disc life, Seal inspection and adjustment, power output, inspection criteria
- Life Cycle Maintenance.
  - Continuous site evaluation during operation, Oil sample, vibration analysis, seal air test and adjustment, coupling and alignment, borescope, Blade tip clearance, Bearing inspection, Rotor removal.





## PHASE 361 RT61 Power Turbine Maintenance

<b>Who should attend</b>	: Mechanics and maintenance support personnel.
<b>Duration</b>	: 2 days (between Mon-Fri)
<b>Location</b>	: RR Facility / Customer Facility on-shore
<b>Class Size</b>	: 12 Maximum
<b>Course Identification</b>	: Phase 361 (RT61)
<b>Prerequisites:</b>	: Phase 2R or 12R recommended

### AIMS:

The course is designed to give the attendees a detailed knowledge of the RT61 Power Turbine.

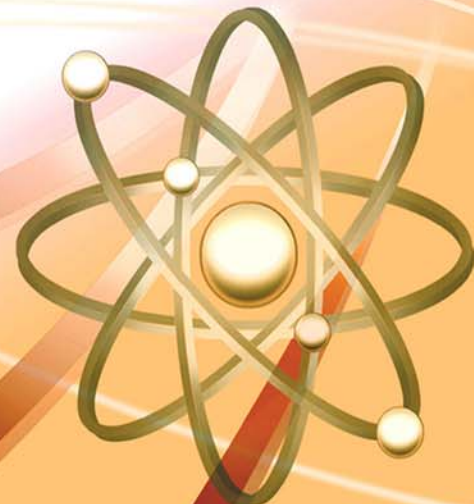
### OBJECTIVES:

Upon successful completion of the course, the attendee will be able to:

- List and describe the Power Turbine construction and theory of operation.
- Explain the purpose and location of instrumentation sensors.
- Explain the normal and abnormal conditions based upon observed parameters
- Describe the purpose of proper start up and routine maintenance procedures.
- Identify the required auxiliary support systems including:
  - Mineral oil, normal, coast down, post lube
  - Instrument, bleed, seal and cooling air
  - Instrumentation
- Describe procedures and special tools to remove / install the power turbine rotor.

### COURSE CONTENTS:

- Course Induction.
- Power Turbine Major component identification and purpose
  - Rotor / Stator and Support component build up
  - Rear Support, bearing case, rotor assembly, journal bearings, thrust bearings, thrust collar, coupling hub
  - Front Support, mount ring, 2<sup>nd</sup> blade case, 2<sup>nd</sup> nozzle case, diaphragm support, 1<sup>st</sup> nozzle case, inlet diffuser, power turbine support spring
- Instrumentation sensors.
  - Speed pickup, bearing RTD, Shaft vibration, Rim cooling thermocouple
- Operation and Monitoring.
  - Startup, Warm up, Rim Cooling, Disc life, Seal inspection and adjustment, power output, inspection criteria
- Life Cycle Maintenance.
  - Continuous site evaluation during operation, Oil sample, vibration analysis, seal air test and adjustment, coupling and alignment, borescope, Blade tip clearance, Bearing inspection, Rotor removal.





## PHASE 362 RT62 Power Turbine Maintenance

<b>Who should attend</b>	: Mechanics and maintenance support personnel.
<b>Duration</b>	: 2 days (between Mon-Fri)
<b>Location</b>	: RR Facility / Customer Facility on-shore
<b>Class Size</b>	: 12 Maximum
<b>Course Identification</b>	: Phase 362 (RT62)
<b>Prerequisites:</b>	: Phase 2R or 12R recommended

### AIMS:

The course is designed to give the attendees a detailed knowledge of the RT62 Power Turbine.

### OBJECTIVES:

Upon successful completion of the course, the attendee will be able to:

- List and describe the Power Turbine construction and theory of operation.
- Explain the purpose and location of instrumentation sensors.
- Explain the normal and abnormal conditions based upon observed parameters
- Describe the purpose of proper start up and routine maintenance procedures.
- Identify the required auxiliary support systems including:
  - Mineral oil, normal, coast down, post lube
  - Instrument, bleed, seal and cooling air
  - Instrumentation
- Describe procedures and special tools to remove / install the power turbine rotor.

### COURSE CONTENTS:

- Course Induction.
- Power Turbine Major component identification and purpose
  - Rotor / Stator and Support component build up
  - Rear Support, bearing case, rotor assembly, journal bearings, thrust bearings, thrust collar, coupling hub
  - Front Support, mount ring, 2<sup>nd</sup> blade case, 2<sup>nd</sup> nozzle case, diaphragm support, 1<sup>st</sup> nozzle case, inlet diffuser, power turbine support spring
- Instrumentation sensors.
  - Speed pickup, bearing RTD, Shaft vibration, Rim cooling thermocouple
- Operation and Monitoring.
  - Startup, Warm up, Rim Cooling, Disc life, Seal inspection and adjustment, power output, inspection criteria
- Life Cycle Maintenance.
  - Continuous site evaluation during operation, Oil sample, vibration analysis, seal air test and adjustment, coupling and alignment, borescope, Blade tip clearance, Bearing inspection, Rotor removal.

