INFORMATION ABOUT THE LM6000 GAS TURBINE TRAINING COURSE BASED ON ALL LM6000 MODELS (INCLUDING SAC AND DLE)

Week 14 (03 – 07 April 2023), Elst, The Netherlands.

Reference number: 42608778

Course Objective:
This course is intended for customer personnel concerned with day-to-day on-site operations and maintenance of the GE LM6000 aero-derivative gas turbine models. The purpose of the training is to provide the knowledge required to ensure consistent, trouble-free performance from the engine and its associated equipment.

For Whom?
Operators and Maintenance engineers (mechanical as well as I&C).
In general for those who need an in-depth understanding of the LM6000 gas turbines and the related auxiliary systems.

The training course is meant for employees of companies that are (future) end users of LM gas turbines or contractors that operate the gas turbines on behalf of those companies.

Entry Level
The course participants should have some basic knowledge of operation and maintenance of rotating equipment, not necessarily gas turbines.

Course manual
Each trainee will receive a training manual (approximately 850 pages in full color), covering the relevant subjects of the training course. The manual consists of equipment descriptions, schematics and operating and maintenance instructions. The text is supplemented by a large number of illustrations, drawings and photographs of the equipment. The manual also contains an abundance of reference information, for further private studies. To support the discussed subjects, a calculation and simulation program will be used.

Language
The training will be executed in English. The manuals are in the English language as well.

Trainer
A qualified English speaking senior instructor with over 20 years' of experience will present the course.

Course content:

- **Make acquaintance and presentation of the program**
- **Introduction to gas turbines**
  - Where it all started
  - Introduction to various GT models LM6000 (SAC & DLE)
  - Gas turbine basics
- **Major Components of the LM6000 where applicable**
  - Inlet Section
  - Variable Inlet Guide Vanes Assembly (VIGV)
  - Low Pressure Compressor (LPC)
    - Principle of operation, Rotor parts, Stator parts
  - High Pressure Compressor (HPC)
    - Principle of operation, Rotor parts, Stator parts
  - Variable Geometry Control System (VGC)
    - Principle of operation, Details of the VSV system
  - Combustion system (SAC & DLE)
    - Principle of operation, Details of the combustion system
  - High Pressure Turbine (HPT)
    - Principle of operation, Rotor parts, Stator parts
  - Low Pressure Turbine (LPT)
    - Principle of operation, Rotor parts, Stator parts
  - Bearings, sumps and frames
    - The bearings, Principle of a sump, The A, B, C, D and E sumps
  - Accessory Drive Assembly & Accessories
  - The Inlet Gearbox (IGB), Radial Drive Shaft, Transfer Gearbox (TGB) and Accessory Gearbox (AGB)
- **Auxiliary Equipment & Systems of the gas turbine**
  - Introduction
  - Flow & Instrument Diagrams (F&ID's / P&ID's) and Device List
  - Instrumentation on/around the gas turbine
  - Hydraulic starting system
  - Gas turbine lube oil system
  - Generator/load gearbox lube oil system
  - Hydraulic oil system
  - Fuel systems (SAC & DLE)
  - SPRINT system
  - Inlet air and ventilation system
  - Fire protection system
  - Compressor water wash system

- **Gas Turbine Operation**
  - General operating instructions
  - Gas turbine performance calculations
  - Start and stop graphs
- **Gas Turbine Maintenance**
  - LM gas turbine maintenance philosophy
  - Levels of maintenance
  - Service Bulletins and Service Letters
  - Maintenance manuals
- **Introduction to the LM Control Systems**
  - Gas turbine control system, general
  - Principle of fuel control (including DLE)
  - Protection systems
- **Troubleshooting and Cases**
  - Troubleshooting principles
  - Practical cases
- **Generator and Electrical System**
  - Generator basics
  - Capacity diagram
  - Brushless excitation (AVR)
  - Protection systems
- **Remaining subjects and answers to questions**
- **Evaluation of the training course**
  - Course evaluation and issue of certificates

After completion of this training the student knows:

- The principles, the construction, the operation and maintenance aspects of the LM6000 (PA – PF) (SAC & DLE) gas turbines.
- The participant will also be introduced to the gas turbine control and protection systems.

Certificate

Every participant will receive a personal certificate at the closing of the course.

Training location
The training course will be held at VBR, Elst The Netherlands.

Training Duration

Monday/Tuesday/Wednesday/Thursday	09:00 – 16:00
Friday	09:00 – 14:00
Lunch provided by VBR	12:00 – 13:00

Pricing / Payment conditions
For the LM6000 (PA – PF), (SAC & DLE) gas turbine training course, the cost will be:
€ 2 200.- per person. (excl. VAT, lodging and travel expenses)

Payment in advance after receipt of our invoice.

Registration
If you wish to participate in the course please use the registration form at least three (3) weeks prior to the start of class. You can also request a registration by e-mail (refer to the e-mail address below.

VBR requests to send a PO (purchase order) with or immediately after the registration.

Receipt of the registration form will be formally confirmed by mail. An invoice will be included if prepayment is required.

Cancellation
If you have received a registry confirmation but are forced to cancel due to circumstances beyond your control, you can cancel the registration up to two (2) weeks before the course commencement date. The paid amount will then be refunded. After this date, or in the event of a no-show, no amount will be refunded.

VBR reserves the right to cancel or defer the course. Cancellation or deferment of the training course will be notified by VBR two (2) weeks prior to the course date. VBR is not responsible for any expenses incurred due to non-refundable airline tickets or hotel accommodations.

Hotel accommodation
As an attachment to the registry confirmation, you will receive a list of hotels in the vicinity of Elst, and a map showing the route to the training location.

Further information
For all training related questions please contact the VBR Turbine Partners training department:
e-mail: training@vbr-turbinepartners.com