

2017 Open Enrollment Seminars

Evaluating and Improving Steam Turbine Performance: 4-1/2 days

This seminar is highly beneficial to anyone involved in determining, maintaining and maximizing the performance of a steam turbine. It has been designed to present a clear understanding of the many cause-effect performance issues commonly encountered in nuclear, fossil and industrial power plants ranging from 25 to 1000 Megawatts. The background of attendees varies from Operators and Shift Supervisors to Performance Engineers to Designers and A&E Engineers. For those with considerable experience, you will find the answers to many of the questions surrounding tasks such as calculating N2 packing leakage and determining LP turbine efficiency. For those who are new to the field, you will find a wealth of "fundamentals" that serves as the basis for determining how to operate, troubleshoot and improve the efficiency of your turbine based on the machine's design and the configuration of your plant.

Dates and locations

| <u>Course number</u> | <u>location</u> | <u>dates</u> | <u>price</u> |
|----------------------|-----------------|-------------------|--------------|
| 508668-1-1 | San Antonio, TX | 1/23 to 1/27/2017 | \$2395 |
| 508672-1-1 | St. Louis, MO | Sept 2017 (tbd) | \$2395 |

Steam Turbine Alignment: 3 Days

The Steam Turbine Alignment seminar teaches participants the theory and correct alignment practices for steam turbines-generators. Particular emphasis will be placed on large steam units. Various methods of alignment will be addressed including tight wire, laser, ERAG/CAT, Alignment Bar, and Lead Wire. The following alignment processes will also be discussed: Tops off alignment, Tops-on / Tops-off alignment, and Topless Alignment®. Students also practice taking coupling readings and making rotor moves using custom designed simulators.

Dates and locations

| <u>Course number</u> | <u>location</u> | <u>dates</u> | <u>price</u> |
|----------------------|-----------------|-------------------|--------------|
| 508667-1-1 | San Antonio, TX | 1/10 to 1/12/2017 | \$2195 |

Steam Turbine Fundamentals: 4-1/2 Days

This course is ideal for plant operations, maintenance, and engineering personnel interested in gaining broad understanding of turbine-generator design, operation, troubleshooting and maintenance. It is ideal for new engineers and/or those who are new to turbine-generator technology. The program is based on a large steam turbine design by GE, but references to different OEMs will be made. Participants will learn about turbine-generator design and construction and will be able to identify major components using correct terminology. Auxiliary systems will be described and students will review one line diagrams and consider typical problems and corrective responses. Startup and operation, periodic testing, alarms and troubleshooting are thoroughly covered; interactive exercises are utilized extensively.

Dates and locations

| <u>Course number</u> | <u>location</u> | <u>dates</u> | <u>price</u> |
|----------------------|-----------------|-------------------|--------------|
| 508670-1-1 | San Antonio, TX | 1/30 to 2/3/2017 | \$2295 |
| 508671-1-1 | Charlotte, NC | 5/15 to 5/19/2017 | \$2295 |
| 508673-1-1 | St. Louis, MO | Sept 2017 (tbd) | \$2295 |

For more information on these and other training offerings visit our website at www.mdaturbines.com, or contact Dave Hagenbuch on (847) 705-0826, email dhagenbuch@mdaturbines.com