

Steam Turbine Fundamentals



Orlando, FL
February 26 – March 1, 2024

Embassy Suites Lake Buena Vista
8100 Lake Street
Orlando, FL 32836
Phone: 407-239-1144



presented by
David V. Hagenbuch

About the Program

Mechanical Dynamics & Analysis LLC Phone: 518-399-3616



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 several 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.

Control system philosophy and design overview will give participants a clear understanding of speed and load control. The starting and loading chart and instruction will be discussed and participants will work through interactive exercises to practice using this important tool. An overview of protective systems including alarm and trip functions will further the student's appreciation for safe operation and what to do under alarm or trip conditions. A significant portion of time will be spent reviewing and discussing correct response to each alarm and trip function. The recommended periodic testing procedures will be reviewed and the reasons behind each explored.

Abnormal operating conditions such as high vibration, water induction, bearing oil/metal temperature excursions, and generator faults will be reviewed. Emphasis will be placed on the underlying causes and prevention whenever possible and how to deal with them properly when they do occur. Protection of personnel and equipment will be given high priority throughout the program.

Finally, an overview of routine and periodic maintenance will round out the program. Students will be instructed on typical outage workscopes including subcontracting practices. They will learn the importance of sound maintenance and operating practices and their impact on outage intervals, efficiency, and equipment life.

Instructor – David V. Hagenbuch

David Hagenbuch (“hay-gen-book”) is a mechanical engineer with forty years in the power generation industry. He holds the BS degree in Mechanical Engineering from Lehigh University and the MBA degree from New York University.

Dave's career highlights include 23 years with GE in a variety of roles. He is a certified large steam turbine startup engineer and has been on dozens of new unit startups and hundreds of restarts. He started a customer training unit for the US market catering primarily to utilities and IPP's during the combined cycle boom of the early 1990's. After that he managed GE's world-renowned Field Engineering Program. Dave's last seven years with GE were devoted to helping develop and build a Contractual Services business to engage clients in shared risk and reward relationships.



Dave started his own consulting practice in 2003 to help clients improve productivity. Much of Dave's activities were involved in technical curriculum/course design and delivery, and knowledge management projects, as well. One of his major clients was MD&A. In January 2010, Dave joined MD&A on a full-time basis to provide focus and resources to offer world class customer training programs.

Hotel Information

Mechanical Dynamics & Analysis LLC Phone: 518-399-3616



Hotel Reservations:

Embassy Suites Lake Buena Vista
8100 Lake Street
Orlando, FL 32836
Phone: 407-239-1144



A **limited block** of rooms have been reserved at the Embassy Suites under the MD&A group at the rate of **\$169.00/night**, plus taxes and fees, for attendees who register on or before **January 10, 2020**.

Call Jared Kuhns 407-239-1144 extension 5305, or follow below link:

[Online Reservation Link Embassy Suites](#)

MD&A provides lunch and morning/afternoon coffee breaks for attendees Monday - Thursday.
Morning coffee break is provided on Friday.

The program begins at 8:00 AM on Monday and ends at noon on Friday

Airport Shuttle / Hotel Parking:

Airport Shuttle service is available for a nominal fee.

Overnight self-parking fee for hotel guests is \$10 (normally \$20) or valet service is available for \$27.00 per day. Daily rates are \$10.00 valet, and \$8.00 self-parking.

Area Attractions:



Disney World Attractions:

- Epcot
- Magic Kingdom Park
- Animal Kingdom Park
- Hollywood Studios
- Free shuttles from hotel

Other Area Attractions:

- Universal Studios
- SeaWorld
- Busch Gardens

Registration Information (Orlando, FL / February 26 – March 1, 2024)

Pricing:

- \$2,795 ea. Group Rate (3 or more from the same company, registering together)
- \$2,995 ea. Single Rate (1-2 Registrants on or before February 8, 2024)
- \$3,095 ea. Late Registration Rate (after February 8, 2024)

Payment Methods Accepted:

Payment is due upon registration. The following methods of payment are accepted.

- Most major credit cards* (**If single purchase limit is less than fee, please call!**)
- Company/personal check made payable to Mechanical Dynamics & Analysis LLC
- Purchase Order. Invoice will be issued at time of registration and due upon receipt.

*American Express cards are not accepted

All registrations are completed on-line by visiting our secure website:

<https://www.mdaturbines.com/events/steam-turbine-fundamentals-seminar-2024/>

Regular Registration Closes February 8, 2024

Cancellation Policy

If you cannot attend the session you registered for, you may send a substitute. Please contact MD&A regarding substitutions. There is a \$300 fee for those who cancel 31 days or more from the date of the event and do not send a substitute. Those who cancel 30 days or less from the date of the event and do not send a substitute will be charged the 50% of the registration fee.

International clients are required to pay in advance by credit card.

MD&A reserves the right to cancel seminars due to low attendance.

STEAM TURBINE FUNDAMENTALS

GENERAL QUESTIONS should be directed to David Hagenbuch in our Palatine, IL office: 847-705-0826, or email dhagenbuch@mdaturbines.com

ON-LINE REGISTRATION QUESTIONS should be directed to Kelly Plunkett in our Latham, NY office: 518-399-3616, or kplunkett@mdaturbines.com