

## 2012 Open Enrollment Seminar Schedule

### ***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.

This seminar strongly emphasizes “real life, hands-on” operation, maintenance, and data analysis situations. There are sections devoted to conducting turbine testing, steampath audits and analyzing data collected from station instrumentation and the DCS. These lessons are directly transferable and intended to provide the “take-home” knowledge needed to immediately reduce the heat rate of your power plant. The text and technical papers provide a reference library that you will use repeatedly throughout your career. Information contained in this seminar is based on the 25 years of career experience of the presenter, as well as the published works of many of the most recognized authorities in the industry.

### ***Instructor – Deborah H. Cioffi***

Deborah H. Cioffi (“chaw-fee”) received both her Bachelors and Masters degrees in Mechanical Engineering at Rensselaer Polytechnic Institute (RPI). She is a registered Professional Engineer in New York State and a member of the American Society of Mechanical Engineers, the National Society of Professional Engineers and the Albany Engineering Society. Her expertise lies in thermodynamics, heat transfer and fluid mechanics.

Deborah is employed as a Consulting Engineer at Mechanical Dynamics & Analysis, Ltd. located in Latham, New York. She provides fossil, industrial and nuclear engineers with consultation on power plant performance, steampath audits, steam turbine performance analyses, power plant testing, and heat balance analysis.



After working closely for more than 10 years with author KC Cotton, in 1999 Ms. Cioffi developed the 4 ½ day seminar entitled, “Evaluating and Improving Steam Turbine Performance.” This seminar is based on the authoritative textbook of the same title written by Mr. Cotton. During her 25 years as a consulting engineer Deborah has become recognized as one of the top authorities on the subject of steam turbine performance and turbine testing. Ms. Cioffi has published eleven technical papers on steam turbine performance and has spent over 1,000 hours lecturing on the subject of turbine testing and performance issues to the industry’s top professionals. Her expertise, presentation style and enthusiasm for the subject of turbine performance have made her seminar notably popular, frequently sold out and recognized as “the benchmark” in turbine performance education in the United States.

### ***Dates and locations***

<u>Course number</u>	<u>location</u>	<u>dates</u>	<u>price</u>
0502305-1-1	Marco Island, FL	1/23 to 1/27/12	\$2295

Group rate is \$2095 for 3 or more registrants from the same company registered at the same time. For late registration add \$100 per registrant.

**Call (847) 705-0826 to register or get answers to any questions you might have.**

## 2012 Open Enrollment Seminar Schedule

### 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®. The program includes a coupling alignment workshop using simulators for “hands-on” learning experience.

The program begins with a review of steam turbine and generator construction and relevant, major components. Participants will build their understanding using two rotor, four bearing simple setup and finally address issues that come up with multiple rotor systems, 3-bearing units, and others. A major inspection work scope will be reviewed including opening, clearance checks, alignment checks, disassembly, evaluation, repair, reassembly, alignment, and commissioning. Participants will get a sense for critical path activities and the impact of alignment decisions. Participants will have the opportunity to review real life data sets and make alignment calculations. Open discussions will allow participants to learn from one another as well as from the instructor. Advantages and disadvantages of different approaches will be reviewed. Finally, the impact of misalignment on unit operation and component integrity will be reviewed. Students will gain an understanding of the long term ramifications associated with certain types of misalignment. The instructor will give actual examples of misalignment including the troubleshooting and correction activities.

This program is geared toward plant engineers, maintenance engineers, system engineers and others who participate in or have oversight responsibility for unit alignment, with 0-5 years of experience. Some knowledge of steam turbine technology would be helpful although not required. Experienced engineers will also benefit from the training.

### Instructor – Charles J. Monestere

Since joining MD&A in 2004, Charles Monestere (“mon-a-stair”) has both managed the turbine alignment business and personally performed alignments on over 80 turbine sections using MD&A’s Topless Alignment® process. Units aligned ranged in ratings from 30MW to 1100 MW on various makes and models, predominantly Westinghouse, GE, Toshiba, Hitachi and Allis-Chalmers steam turbines.

Prior to joining MD&A, Charles worked for GE Power Systems / GE Energy for over 15 years. While at GE, Charles worked as a Field Engineer, a Steam Turbine instructor at Power Systems University, Manager of Methods Engineering, and Training Manager for the Service Shops. While working as an instructor at Power Systems University, Charles taught the Steam Turbine Field Engineering Program and developed and taught the advanced school on Turbine Laser Alignment.



Mr. Monestere holds a Masters of Business Administration from Union College in Schenectady, NY, and a Bachelor of Science in Marine Engineering from Massachusetts Maritime Academy

### Dates and locations

<u>Course number</u>	<u>location</u>	<u>dates</u>	<u>price</u>
0502302-1-1	St. Louis, MO	12/6 to 12/8/11	\$1995
0502304-1-1	Marco Island, FL	1/10 to 1/12/12	\$1995

Group rate is \$1795 for 3 or more registrants from the same company registered at the same time. For late registration add \$100 per registrant.

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## 2012 Open Enrollment Seminar Schedule

### 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 the correct response to each alarm and trip function. The periodic testing recommendations 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 covered. 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 worksopes, subcontracting practices, and specification writing. They will learn the importance of sound maintenance and operating practices and the impact on outage intervals, efficiency, and equipment life.

### Instructor – David V. Hagenbuch

David Hagenbuch ("hay-gen-book") is a mechanical engineer with thirty years in the power generation industry. He holds a BS degree in Mechanical Engineering from Lehigh University and an 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 left GE in 2003 to start his own consulting practice, WorkSmart Consulting, helping clients improve productivity. Much of Dave's practice was involved in technical curriculum and course design/delivery, and knowledge management. 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 promote customer training programs.

### Dates and locations

<u>Course number</u>	<u>location</u>	<u>dates</u>	<u>price</u>
0502306-1-1	Marco Island, FL	2/6 to 2/10/12	\$2095

Group rate is \$1895 for 3 or more registrants from the same company registered at the same time. For late registration add \$100 per registrant.

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