

Thermal Performance Training for Fossil

October 11-14, 2022

Course will be conducted to accommodate both in-person (recommended) and virtual attendance. Please specify desired option on Registration Form below.

OVERVIEW

GSE Programs & Performance, formerly known as True North Consulting, will be conducting Thermal Performance Training courses for Fossil/Combined Cycle Plants beginning October 11 and concluding October 14, 2022, in Montrose, CO. Courses and associated details are below with additional information available at the provided links. The courses include many **hands-on** examples to drive home the theory and practical application. If you are not in Thermal Performance, please forward this invitation to the person responsible for Thermal Performance.

COURSE CONTENT

- **Thermal Performance Program Development:** Designed to review thermodynamic fundamentals and describe the essential elements of a thermal performance program
- **Power Plant Cycle & Component Evaluation:** Designed to teach how to identify and recover lost megawatts throughout the thermal cycle.
- **Thermal Plant Testing Overview:** Designed to provide an introduction and overview to power plant testing.
- **Heat Rate Optimization**

SCHEDULE AT A GLANCE – October 11-14, 2022

Tuesday	8:00am 4:00pm	Thermodynamic Fundamentals & Component Analysis
Wednesday	8:00am 4:00pm	Cycle and Component Analysis
Thursday	8:00am 4:00pm	Thermal Performance Tools and Resources
Friday	8:00am 11:30am	Testing & Program Development

*All times are Mountain

CONTINUING EDUCATION UNITS (CEU)

Each attendee will receive a Certificate of Completion for 2.8 Continuing Education Units (CEU) credits to qualify for 28 Professional Development Hours (PDH) needed to fulfill Professional Engineers' continuing education requirements. The credits will be awarded without authorization. It is the attendee's responsibility to keep and present the certificate to any organization that requires the certificate.

FEE: \$2,695

*Lunches and beverage service will be provided.

** Calculator, Heat Balance Diagram and/or Thermal Kit of your Plant

TRAINING LOCATION

The Bridges Golf & Country Club
2500 Bridges Dr
Montrose, CO 81401

ACCOMMODATION SUGGESTIONS

Holiday Inn Express
1391 S. Townsend Ave.
Montrose, CO 81401
(970) 240-1800

The Bridges Golf & Country Club
2500 Bridges Drive
Montrose, CO 81401
970-252-1119 (rooms are limited)

Hampton Inn
1980 North Townsend
Montrose CO 81401
970-252-3300

ABOUT THE INSTRUCTORS

Bob Marlowe: Mr. Marlowe is a recently retired Thermal Performance Engineer, with 40+ years' experience, at First Energy's Fossil Division. Bob worked at Pleasants, Sammis, Bruce Mansfield, and Eastlake generating stations. Bob's background includes, but is not limited to: Emissions Control, Turbine Steam Path Audits, Heat Rate Calculation and Evaluation, ASME PTC6 testing, and includes extensive trouble shooting of major components.

Rich Booth: Mr. Booth is a Mechanical Engineer at True North consulting. He has 55 years of combustion, emissions, and performance experience. The past 48 years have been spent managing and implementing field engineering projects to solve performance and reliability as well as combustion-related emissions problems on a wide size range of industrial and electric utility boilers. These projects included performance testing and thermal performance auditing of several large coal-fired units for electric utility customers. Mr. Booth has also been the lead project investigator for a multi-year EPRI sponsored thermal performance assessment project carried out at seventeen host sites. Other EPRI sponsored work has included studies of the performance effects of constant and sliding pressure steam turbine operation and the effects of load cycling on unit performance.

QUESTIONS - Contact Carrie Briggs at carrie.briggs@gses.com.

Instructions for Virtual Thermal Performance Training:

1. Please minimize multitasking and be engaged as if all were together in a common training facility. We will be engaging everyone as we teach the class (and we may ask a question or two) so stay on your toes.
2. Required to have a video connection so we can see you
3. Attire is your choice, but remember you are on camera.
4. Background noises such as pets and family are understandable. Minimize if you can but no worries when the dogs bark at the doorbell. We might draw the line at Elephants, snakes or really big spiders.
5. Zoom will be the platform used to facilitate the virtual training week. Zoom has web-based versions as well as free desktop apps. If you haven't used Zoom on the computer you will use for the training, it would be good to either load Zoom or to explore/test the web version prior to the training.
6. If you have a question, you can ask at any time. We greatly encourage questions.
7. We will send hard copies of the exercises.
8. We will be doing the exercises together and you will be expected to actually do them with a pencil and a calculator.
9. We will be taking hourly breaks (feel free remind us if we get too carried away, we love thermo)
10. The class will start at 8:00 am. MDT so y'all in the east get to sleep in.
11. The class will end at 4:00 pm. MDT so y'all in the east get to work a little late.
12. We will take a 45-minute lunch break sometime around 12:00-12:45 MDT.