



# Thermal Performance Training

The Next Level for Thermal Performance

## HOW CAN MY PLANT MAKE MORE ELECTRICITY?

Monitoring a power plant's thermal performance requires various disciplines combined with practical ability and a good understanding of thermodynamic principles. True North Consulting's Thermal Performance courses bring these attributes together by combining excellent theoretical knowledge with significant plant experience. True North Consulting brings over 25 years of applying thermodynamic theory and procedures to increase plant generation and recover lost generation.

The Thermal Performance courses lay a foundation in theory, provide practical methods for thermal performance program development and explain how to detect and recover lost generation due to component or systemic problems. The courses include various workshops where the student uses tools to analyze plant problems. Department interfaces are discussed along with how to integrate plant data into the decision making process.

## WHO SHOULD ATTEND?

- Engineers responsible for thermal performance at power plants.
- Test Engineers responsible for testing plant equipment.
- Experienced Engineers who need refresher training or are looking for new ideas.
- Supervisors who want to develop and implement an effective thermal performance program.
- Balance of Plant Design Engineers who desire to understand how their work can affect the entire secondary cycle.
- Shift Supervisors or Operators who want to increase their understanding of how to operate a plant to achieve maximum plant efficiency or how to detect problems that result in decreased plant generation.

## BASIC COURSES

### 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.

## WHAT YOU WILL LEARN

- Refresher on basic thermodynamic principles and how they are employed in monitoring plant efficiency.
- The essential elements of a thermal performance program.
- How to streamline data to reduce repetition and shorten

the time to perform analysis.

- How to use various tools (everything from references to on-line monitoring software) to implement a thermal performance program.
- How not to be fooled by instrumentation or plant historian problems.
- How to effectively interface with Operations, Maintenance and Work Control.
- The fundamentals of all reporting aspects, from daily generation to industry performance indicators.
- How to effectively use thermal performance data to aid other programs such as erosion/corrosion, design engineering, projects and environmental licensing.
- Monitoring of critical performance parameters.
- Evaluation of the plant to detect lost efficiency on a component-by-component basis as well as on a system-wide basis. This will include practical examples and workshops.
- Performance testing including ASME PTC-6 testing and CTI cooling tower testing.

## BENEFITS

Identify new areas where plant efficiency can be increased

- **Establish** a thermal performance monitoring program
- **Recover** lost megawatts
- **Reduce** elapsed time between the start of a problem and the correction of the problem

## ADVANCED COURSES

### Performance Monitoring Software Use

Detailed explanation and workshops on how to use thermal performance software to:

- Find lost plant generation
- Perform design analyses
- Generate reports
- Evaluate plant changes

### Power Plant Thermodynamic Applications

In depth study of thermodynamics as it relates to the analysis of power plant components and cycles. This course will take you through the theory and application using many hands-on examples. All components of the power plant will be covered in detail.

### Power Plant Testing

This course enables an engineer to design and implement a full scale ASME PTC-6 test along with other component tests for feedwater heaters, condensers and cooling towers.

### Turbine Specification Development

The aging fleet is looking at the new vendor turbine designs as a way of improving and extending the life of existing investments. This course provides the necessary information to ensure that the generation purchased will be the generation delivered.

## ABOUT TRUE NORTH CONSULTING

True North Consulting is a leading provider of thermal performance services and supporting products in the power plant industry.

It is all about making electricity and making it efficiently. Whether the reason is to use less fuel, put more megawatts on the grid or gain environmental credits the True North Consulting training courses will enable you to meet these goals.

Classes are held in Montrose, CO in January and August of each year. For a complete list of our class offerings, or to get more information about custom courses, go to our website: [www.tnorthconsulting.com](http://www.tnorthconsulting.com) or call Karla Todd at 970-964-2754 or e-mail [kjt@tnorthconsulting.com](mailto:kjt@tnorthconsulting.com).