

## FOSSIL/NUCLEAR THERMAL PERFORMANCE BASIC PROGRAM OWNER TRAINING

### CONTACT INFORMATION

Frank Todd



[fdt@tnorthconsulting.com](mailto:fdt@tnorthconsulting.com)



Phone: (970) 964-2753  
Cell: (609) 202-9080

### CLASSROOM INSTRUCTORS

The instructors are previous utility Thermal Performance Program Owners and have combined experience of more than 50 years in this area.



### INTENDED AUDIENCE

1. Thermal Performance Program Owner
2. BOP System Engineer



### TYPE

True North Consulting offers this as classroom training.



### DURATION

4 Days

## **ABSTRACT**

True North Consulting provides Thermal Performance Program Owner training for both the new Program Owner and requalification for existing qualified Program Owners. Monitoring a power plant's thermal performance requires talents from various disciplines combined with practical ability and a good understanding of thermodynamic principles. The True North Thermal Performance course brings these attributes together by combining excellent theoretical knowledge with significant plant experience. True North brings over 25 years of foundation in theory, provides practical methods for thermal performance program development, and explains how to detect and recover lost generation due to component or systemic problems. The course includes various workshops where the student uses tools to analyze plant problems. Interfaces with various departments are discussed along with how to integrate plant data into the decision-making process. This course is held over a four-day period. Prerequisites and requirements are a calculator, a Heat Balance Diagram and/or a Thermal Kit for your plant.

This training and the instructors can provide Thermal Performance training for Level 1, 2, and 3 Engineers.

## **TERMINAL LEARNING OBJECTIVES**

The key learning objectives will cover the following technical areas:

1. Thermal Performance Training Introduction
2. Thermodynamic Fundamentals - 1 Introduction
3. Thermodynamic Fundamentals - 2 Heat Balance Diagrams
4. Power Plant Component Evaluation - 1 Introduction Turbines
5. Power Plant Component Evaluation - 2 Condensers
6. Power Plant Component Evaluation - 3 Feedwater Heaters
7. Power Plant Component Evaluation - 4 Nuclear Components
8. Power Plant Component Evaluation - 5 Cooling Towers
9. Thermal Plant Testing Overview - 3 Cooling Tower Testing
10. Power Plant Cycle and Component Evaluation - 6 Power Calculation
11. Power Plant Cycle and Component Evaluation - 7 Cycle Isolation Monitoring
12. Thermal Performance Resources & Tools - 1 Instrumentation
13. Thermal Performance Resources & Tools - 2 Performance Software and Documentation
14. Thermal Performance Program Development Overview
15. Thermal Plant Testing Overview - 1 Turbine Testing

16. Thermal Plant Testing Overview - 2 Uncertainty
17. Thermal Performance Resources & Tools - 3 Measuring & Delivering Electricity
18. Exercises
19. Exercise Answers
20. Handouts
21. Heat Balance Diagrams
22. Mollier Diagrams

## KEY INDUSTRY DOCUMENTS

1. EPRI Volume 1, 2 & 3
2. Thermal Performance Manual 3002000560; 3002000489; 3002005346
3. Plant Engineering: Heat Cycle Isolation Valve Leakage Identification and Quantification [1025264]