Course DESCRIPTION (4½ Days)
This 4½-day course teaches attendees how to diagnose root causes of fossil and combined cycle power plant performance deficiencies. Over 25 different case studies are presented and solved, beginning with test data on specific components, followed by pertinent performance calculations, and ending with a “root cause” analysis of the problem. Diagnostic flowpaths, using expert system techniques, are provided for many of the case studies. The case studies are based on GP Strategies’ extensive experience in troubleshooting and testing all types of power plant equipment. Topics are optimally arranged to allow engineers from both plant types to pick and choose the equipment of most interest to them without any loss of continuity. Attendees have the option of attending the first 3½ days on the Rankine cycle plant, the last 3½ days on the combined cycle plant, or the full 4½-day program.

Prerequisites
Basic familiarity with equipment performance test methods and power plant thermodynamics.

Who Should Attend?
This course is for experienced power plant engineers and managers who are familiar with the ASME Performance Test Codes and knowledgeable in power plant components/systems.

Course CONTENT
- Boilers and Air Heaters
- Feedwater Heaters
- HRSGs
- Steam Turbines
- Gas Turbines
- Pumps
- Condensers and Auxiliaries
- Combined Cycle

Course OBJECTIVES
At the end of this course, students should be able to:
- Recognize the principles of thermodynamics and heat transfer
- Identify where thermal losses occur
- Determine if problems are due to equipment or operational difficulties
- Act to effectively control heat rate
- Monitor improvements and continually reassess strategies for optimum performance

Course MATERIALS
The textbook Advanced Performance Analysis, diagnostic flowpaths, steam tables, and performance software are provided. Attendees are requested to bring a laptop computer with Microsoft® Excel™. Each attendee will receive a personal copy of the latest version of GPCALCS™ Software.

REGISTRATION
To register for open enrollment courses or to obtain more information, contact GP Strategies™ Energy Services at +1 716.799.1080 or 800.803.6737. Visit us online at http://fossilfuelcourses gpstrategies.com/crs.aspx