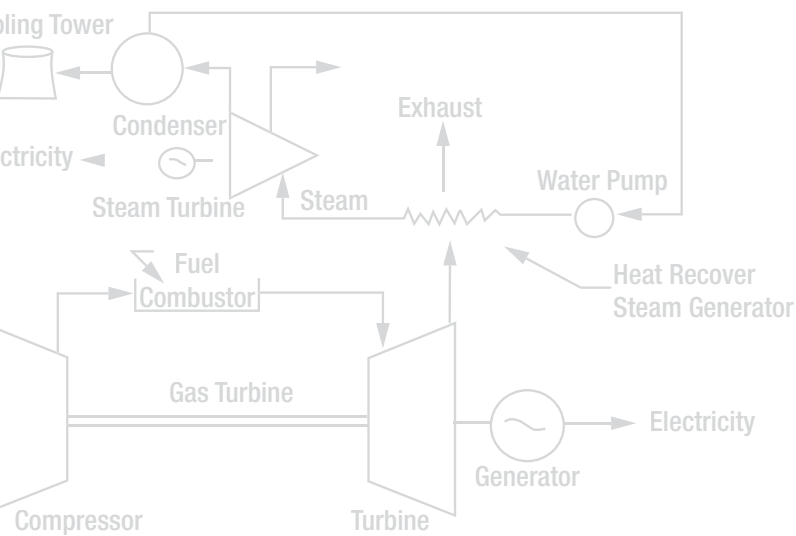




## CCGT/HRSG Water Chemistry



A Scientech  
Training Course

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March 18-22, 2019  
Clearwater, Florida

## ▶ Course Overview

This course covers a wide range of combined cycle power plant operational chemistry concerns. It was developed FOR power plant chemistry personnel BY a former power plant Chief Chemist with over twenty years of on-the-job experience. It is designed to provide an understanding of the chemistry principles related to system chemistry control, water treatment, and analytical methods.

Subjects of interest include:

- integrated combined cycle plant chemistry
- corrosion control
- process considerations
- the chemistry associated with boiler chemical cleaning
- selective catalytic reduction

In addition, guidelines for chemistry control programs such as frequency of analyses, chemistry specifications and limits, and data evaluation are presented.

The instructor will share with you his practical knowledge, the tips and tricks he has picked up over the years, and his actual power plant chemistry experience. Learn from an instructor who really KNOWS power plant chemistry and who has faced and solved the same problems you see every day.

PLEASE NOTE: The number of registrations is strictly limited so that the instructor can customize the course presentation to meet the attendee's needs. If you work in a combined cycle power plant operational chemistry environment, we assure you that this course will be relevant to your individual job responsibilities! This course is appropriate for power plant personnel who have laboratory experience. It is particularly suitable for those needing an understanding of the overall fossil chemistry program.



## ▶ Who Should Attend

This course is appropriate for combined cycle power plant operators and engineers responsible for analyzing and interpreting power plant chemistry data. It is also appropriate for engineers and managers who are responsible for establishing a combined cycle power plant chemistry control regime.

## ▶ This Course Covers

Following is an abbreviated list of the topics covered:

### HRSO Chemistry

- Water chemistry concepts
- Flow accelerated corrosion
- Corrosion and corrosion control
- Congruent phosphate treatment
- Equilibrium phosphate treatment
- All Volatile Treatment (AVT)
- Water treatment methods
- Reverse osmosis
- Chemistry control surveillance and analytical methods
- On-line instrumentation
- Data management evaluation

### Process Considerations

- HRSO design
- Cogeneration
- Combined cycle
- Water/steam injection
- Evaporative cooling
- Inlet fogging
- SCR operation
- Start-up and shutdown
- Lay-up
- Cold-end corrosion
- Balance of plant

### Boiler Chemical Cleaning

- Pre-operational cleaning
- Steam blows
- Chemical cleaning solutions
- Waste treatment

## ▶ About the Instructor



In his 14 years at Florida Power Corporation's Crystal River facility, Mr. Witherow held positions as Laboratory Supervisor, Plant Chemist, and Head of Corporate Fossil Chemistry. He also served as Corporate Quality Control Officer for the State of Florida COMPQA program.

- Over 30 years experience in industries including:
  - Organic feedstock production
  - Coal gasification pilot plant research
  - Environmental laboratory direction
  - Electric utility operation
- Utility experience includes:
  - Oversight of corporate chemistry program
  - Technical support to simple cycle combustion turbines and combined cycle CT/HRSG plants
- High purity water production processes includes:
  - Cold lime softening
  - Demineralization
  - Evaporation
  - Reverse osmosis
- Cooling tower experience includes:
  - Hyperbolic and mechanical draft salt water systems using dispersants, penetrants, and biocides for fill deposition control
- Central laboratory oversight includes:
  - Fuel analyses (oil and coal)
  - Transformer oil analyses
  - Water analyses using AA, HGA, ICP, automated and manual bench testing
  - Field sampling and analyses protocols
- Coal gasification pilot plant experience includes:
  - High-pressure sampling
  - Chemical analyses of synthesis gas and waste streams
  - Analyses of fuels, slags, ashes, and chemical deposits

## ▶ Course Schedule

### Monday through Friday Schedule, March 18-22, 2019

M: 3-18	1:00 pm	—	5:00 pm	Course w/afternoon break
TWT: 3/19-21	7:30 am	—	8:00am	Continental breakfast in training room
	8:00 am	—	12:00 noon	Course w/ morning break
	12:00 noon	—	1:00 pm	Lunch at Sheraton's Island Grille Café
	2:00 pm	—	5:00 pm	Course w/afternoon refreshment break
F: 3/22	7:30 am	—	8:00am	Continental breakfast in training room
	8:00 am	—	12:00 noon	Course w/ morning break

## ▶ Registration Information

### CCGT/HRSG Water Chemistry

The registration fee is \$3885.00 per attendee and includes all course materials; continental breakfast each day; full lunch in Sheraton's Island Grille Café each day of full instruction; afternoon refreshment breaks each day, and a Certificate of Educational Achievement for each student that successfully completes the course.

Register on-line at our secure web site:

*[www.chemistryapplications.scientech.com](http://www.chemistryapplications.scientech.com)*

1. In the menu in the middle of the screen, click **Event Schedule**
2. Under the 2019 heading, click **CCGT/HRSG Water Chemistry, March 18-22**
3. Click **Registration** in the menu box on the left side of the screen
4. Enter the registrant's e-mail address and leave the ID Code Box blank
5. Click **Continue** to complete the registration
6. A confirmation will be sent to you via e-mail

**Register Today!**





The latest information on all Scientech Chemistry training courses and meetings is available on our Web site at [www.chemistryapplications.scientech.com](http://www.chemistryapplications.scientech.com)

#### **Cancellation Policy**

Scientech reserves the right to cancel this course at any time and refund the full amount of all registration fees paid. Scientech must have a minimum number of students to hold this course. When the minimum number of attendees is reached, Scientech will send a notice (21) days prior to the course start date, that the required quota has been met or the course has been cancelled. Any cancellations made after the date of the notification e-mail, the attendee will be charged a 75% cancelation fee.

**Please do not make any non-refundable travel reservations until we tell you that the course will definitely be held as scheduled. Substitutions can be made at any time.**

#### **Hotel**

A block of rooms has been reserved at the Sheraton Sand Key Resort at the rate of \$229 per night. Please make your hotel reservations directly with the Sheraton by calling 727.595.1611. Be sure to specify that you are attending this Scientech course to receive the reduced rate. The room block will be released 30 days before each course. After that, the Sheraton cannot guarantee rate or availability.

#### **Contact Information:**

For general information contact Rose Kieffer at:

Voice: 727.669.3055

Toll-free: 800.637.2743 x 3055