44TH TURBOMACHINERY & 31ST PUMP SYMPOSIA
HOUSTON, TEXAS | SEPTEMBER 14 – 17 2015
GEORGE R. BROWN CONVENTION CENTER

"Combined Cycle Power Plants - Emphasis on Gas and Steam Turbine Operations"

Instructors: Dr. Meherwan P. Boyce, P.E. The Boyce Consultancy Group, LLC.,
and
Francisco Gonzalez, Cheniere Energy Inc.

Meherwan P. Boyce is Chairman of The Boyce Consultancy Group, LLC, in Houston, Texas. He has 40 years of experience in the turbomachinery field, with 30 years in the design of compressors and turbines. His 15 years in academia include being Professor of Mechanical Engineering at Texas A&M University, and Founder of the Turbomachinery Laboratories and the Turbomachinery Symposium. Dr. Boyce has authored more than 130 technical publications and several books, including Gas Turbine Engineering Handbook, Cogeneration & Combined Cycle Power Plants, and Centrifugal Compressors, A Basic Guide. He has taught over 150 short courses globally attended by over 4500 students representing 400 companies, and is a Consultant to the aerospace, petrochemical, and utility industries. Dr. Boyce received a B.S. and M.S. degree (Mechanical Engineering) from the South Dakota School of Mines and Technology and the State University of New York, respectively, and a Ph.D. degree (1969) from the University of Oklahoma.

Francisco Gonzalez works for Cheniere Energy in Houston, Texas. Mr. Gonzalez has over two decades of experience in Operations and Maintenance of Rotating Equipment. Mr. Gonzalez has co-authored several technical papers for Turbomachinery Symposia and ASME Power Gen as well as articles on Improving Reliability in various publications. Mr. Gonzalez graduated from the University of Houston with a Bachelor's degree in Mechanical Engineering in 1990.

Who Should Attend

This course is aimed at engineers and operational personnel who need a broad-based introduction to practical operation and design considerations of major combined cycle, and cogeneration power plants. There is an open dialog between the Instructor and the Attendees regarding plant design, operation and equipment problems. There will be an emphasis on Gas and Steam turbine operation

Course Overview and Objective

The course deals with the cycle analysis in the design and general operation and maintenance characteristics of a combined cycle power plant with emphasis on the major components, such as the gas turbine, the heat recovery steam generator (HRSG), and the steam turbine. Overall design and operation concepts along with

basic operation and maintenance problems for the various pieces of turbomachinery such as gas and steam turbines.

An emphasis is placed on providing practical information with minimal theory.

Course Highlights

- Design of combined cycle plants
- Power augmentation
- Major components
    - Gas turbines
    - Steam turbines
- Condition monitoring
- Performance analysis
- Maintenance problems

The Second Edition of the Handbook for Cogeneration and Combined Cycle Power Plant written by the Instructor, Dr. Meherwan P. Boyce, P.E. and released in April 2010 by the ASME Press will be used. The Second Edition has a new Chapter "Case Histories of Problems encountered in Cogeneration and Combined Cycle Power Plants" This is an extensive treatise with 145 figures and photographs illustrating the many problems associated with Combined Cycle Power Plants.