

## Course Content

**Title:** Seismic Design and Retrofit of Mechanical Equipment and Piping

**Potential PDH:** 16

**Code:** BTT015

### Description:

A two-day course that covers the requirements for the seismic design or retrofit of critical plant and facility systems and equipment in accordance with the national standards and regulations from FEMA and the latest ASME and UBC codes.

### Outline:

- Regulations, codes, standards for seismic design
- IBC-ASCE seismic design
- NRC-Regulatory Guide seismic design
- Seismic ground motions
- Seismic response spectra
- Three methods of seismic design
- Classification of structures, systems and components
- Design qualification by analysis
- Static and dynamic design and analysis methods
- Storage tanks
- Pressure vessels
- Piping systems
- PiRetpe racks and frames
- Buried pipelines
- Duct systems
- Machinery
- Design by testing
- Earthquake experience data
- Introduction to probabilistic methods
- Seismic retrofit projects
- Seismic retrofit methods and criteria

### Instructor:

Mr. George Antaki, PE, Fellow ASME, Becht Engineering, Aiken SC USA, has over 43 years of experience in design, qualification, fabrication, trouble-shooting, fitness-for-service, and repairs of ASME pressure equipment and piping systems. He is past vice chairman of API 579/ASME FFS joint committee, and past member of ASME PCC-2. He is currently member of several ASME Code Committees, and a master instructor for ASME. He is the author of three textbooks on integrity and repairs of pressure equipment and piping systems.