Seismic Design and Retrofit of Mechanical Equipment and Piping

Potential PDH: 16

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

Subject Matter Expert (SME):

George Antaki, Fellow ASME, has over 40 years of experience in nuclear power plants and process facilities, in the areas of design, safety analysis, startup, operation support, inspection, fitness for services and integrity analysis, retrofits and repairs. George has held engineering and management positions at Westinghouse and Washington Group International, where he has performed work at power and process plants, and consulted for the Department of Energy (DOE), the Nuclear Regulatory Commission (NRC) and the Electric Power Research Institute (EPRI). He also is an instructor of failure prevention, inspection and equipment integrity courses for ASME, and has done teaching assignments for the Department of Energy as well as many other private organizations. Mr. Antaki has authored several articles, publications and two textbooks on design and mechanical integrity of plant systems and components. George serves as a member of several committees including:

- ASME/API Joint Committee on Fitness for Service Member
- B31 Mechanical Design Technical Committee Vice Chair
- Post Construction Subcommittee on Repair and Testing (PCC) Member
- Pressure Technology Post Construction Committee Member
- Pressure Technology Post Construction Executive Committee Member
- Subgroup on Dynamic Qualification Member
- Task Group on Impulsively Loaded Vessels (SC VIII) Member
- Working Group on Piping (SG-D) (SC III) Chairman