PD386
Design of Bolted Flange Joints

Day One

- Codes Addressing Flange Design
  - Discuss how the various Code sections address the design of flange joints and the applicability of flange standards
  - Vessels: ASME Section VIII, Div 1, Div 2; Section I; Section III
  - Piping: ASME B31.3, B31.1, B31.4, B31.8

- Flange Standards
  - Discuss the ASME flange standards, their basis, applicability and how they are used within the structure of the ASME Codes and Standards
  - ASME B16.5
  - ASME B16.47 (API, MSS)

- Strength Design Methods
  - Raised face flanges: ASME design methodology and basis
  - Flanges with metal-to-metal contact outside of the bolt circle: ASME design methodology and basis
  - Flanges with full-face gaskets: published methods for design
  - Design for external loads: discuss various methods of designing for external loads

- Design for Leakage
  - PVRC method: background and basis of the PVRC research on flange design for leakage including ASME design methodology and basis
  - New proposed code rules: overview of the new ASME design rules currently under development

- Flange Joint Analysis
  - Methods of flange joint analysis, interaction between the flange, bolts, and gasket
  - Behavior of flange joints: apply principles discussed by the use of a computer program
  - Examples: troubleshooting field problems