Training Programs

Site Gasket, Flange Assembly and Flange Design

After working with client engineering, maintenance and purchasing staff to update their gasket specifications, VSP Technologies strongly encourages site maintenance personnel and Area, Mechanical Integrity and Reliability engineers attend one or more of the following training courses:

Site Gasket Materials

An interactive, practical review of the current site gasket materials and industry standards with emphasis on their identification and handling performance limitations and failure mode. The class duration is typically one hour, depending upon the number of gasket materials in use at the site.

This course was developed for Maintenance, Planning and Engineering personnel.

Fasteners, Torque and Flange Assembly Best-Practices

An informative, hands-on class which, through demonstrations and practical examples, teaches important concepts of fasteners, torque, and flange assembly. The use of special test fixtures and equipment including Skidmore Bolt Tension Measuring Device and a Strain Gauged Flange Fixture result in very meaningful, eye opening examples with long lasting impact on the attendees. The class duration is typically 1-1/2 hours, and addresses the following topics: Fastener Identification and Head Markings - Demonstration, Bolting Materials (Stainless, Alloy, Carbon Steel), and Flange/Component Assembly.

This course was developed for Maintenance and Planning personnel.

Bolted Flange Connection Engineering and Potential Pitfalls (4 PDHs)

Review of the ASME design rules for flanged connections and pipe flanges including an indepth understanding of the caveats that contribute to many of the sealing and reliability issues with pressure vessel flanges. Affectionately referred to as- "What You Didn't Learn In College," this training session presents a fundamental review of real-world experiences and understanding of: Flange Design & Selection Gasket Materials, Pressure Vessel Fasteners, Assembly Bolt Torque Calculation Methods, and Assembly Best Practices. The class duration is typically 4 hours, depending upon the questions and application discussions that arise.

This course was developed for Engineering personnel.

Instructors: *Technical & Standards Committees*

Our instructors are recognized globally for their expertise in Bolted Flange Joint Assembly and actively participate in the following organizations and technical committees

- **American Society of Mechanical Engineers (ASME)**, B16, NPPS NM-2, PCC-1, PVP Computer Technology and Bolted Joint Technical Committee, RTP-1, Post Construction Committee (S/C Flange Assembly), Section XII (Transport Equipment), Section VIII (SWG BFJ Design Rules), Pressure Vessels & Piping Division
- **Association of American Railroads (AAR)**, TG Flange Assembly
- **American Society of Testing Materials (ASTM)**, F03
- **Chlorine Institute**
- **Fluid Sealing Association,** Gaskets Division
- **International Tank Container Organization (ITCO)**
- **National Association for Hose and Accessories**

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Elevate Your Expertise with In-Person ASME PCC-1 Training

1 **Level 1: Fundamentals** -introductory course for new hires and apprentices who plan on working with Assemblers on the basics of bolted flange joint assemblies (BFJAs).

2 **Level 2: Assembler** - through academic and hands-on training, the participants learn about gasket materials, proper inspection techniques, and the procedures for assembling a BFJA according to PCC-1 guidelines.

3 **Level 3: Supervisor/Inspector** - expands on principles covered in Levels 1 - 2. Participants will learn to troubleshoot common issues and ensure BFJA integrity through proper inspection and testing.

4 **Level 4: Subject Matter Expert (SME)** - covers the management of BFJA assembly processes, training others in assembly procedures, and the development of company-specific procedures in accordance with PCC-1 guidelines

Powered Equipment: Provides a thorough understanding of joint assembly, disassembly, and tightening using hydraulic or pneumatic equipment. Based on PCC-1 Appendix A, Section A-1.3.6.

Heat Exchangers: Provides a thorough understanding of the assembly, disassembly and tightening of exchanger joints. Based on PCC-1 Appendix A Section A-2.3.3.

ASME PCC-1: A Step-Change from a Bolting Guideline to a Bolting Standard

ASME PCC-1 for Pressure Boundary Bolted Flange Joint was written as a standard for the 2022 publication. It is now a path for plant & company SME's to write their procedures and incorporate better bolting practices within their organization.

Safety: Ensures that assembly processes are performed in accordance with industry and site standards.

Consistency and Quality Assurance: Establishes a reliable and consistent framework for BFJ assembly, enhancing overall quality assurance in the process.

Regulatory Compliance: Adheres to recognized standards.

Cost Savings: Implementing clear guidelines minimizes the occurrence of unplanned downtime, caused by leaks and enhancing the overall efficiency of plant operations.

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