

# PROFESSIONAL DEVELOPMENT COURSE

PRESENTED BY ANRIC Enterprises Inc. [www.anric.com](http://www.anric.com)

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## ASME SECTION III DIV. 1 - SUBSECTION NF CODE REQUIREMENTS FOR COMPONENT & PIPING SUPPORTS

### OBJECTIVE:

The objective of this course is to provide participants with a comprehensive overview of the requirements in Section III, Div. 1 for supports of the Nuclear Pressure Boundary. The scope of this course will cover more than design since it will cover the full construction of supports (i.e., materials, design, fabrication & examination), intended to conform to the requirements for Classes 1, 2, 3 and MC construction of Section III, Div. 1. It has been developed in combination with the Section III - Overview Course, to assist participants who are required to certify Design Reports to meet the qualification requirements of CSA N285.0 /Section III, Appendix XXIII. The requirements for supports in the CSA Standard, CSA N285.0-95, will be covered so that participants will understand the relationship and application of the ASME Code to nuclear supports as required in Canada. The course will provide ample opportunity to discuss issues raised by the participants.

### CONTENTS: A two day course consisting of the following:

Day 1 - Course Content	Day 2 - Course Content
<ul style="list-style-type: none"><li>• <b>General</b><ul style="list-style-type: none"><li>- Scope of NF</li><li>- Types of Supports</li><li>- Intervening Elements and Boundaries of Jurisdiction</li></ul></li><li>• <b>Materials</b><ul style="list-style-type: none"><li>- Permitted Materials, Exempt Materials</li><li>- Certification</li><li>- Impact Testing</li><li>- Quality Systems Program</li></ul></li><li>• <b>Design 1</b><ul style="list-style-type: none"><li>- Loadings and Service Conditions</li><li>- Code Class and Design Procedures</li><li>- Stress Intensities and Allowable Stresses</li></ul></li><li>• <b>Design 2</b><ul style="list-style-type: none"><li>- Plate &amp; Shell Supports</li><li>- Linear Supports, Standard Supports</li><li>- Component and Piping Supports</li></ul></li><li>• <b>Design 3</b><ul style="list-style-type: none"><li>- Snubbers</li><li>- Welding and Bolting</li><li>- Load Rating</li><li>- High Cycle Fatigue, Limit Analysis</li><li>- Functional Requirements</li></ul></li></ul>	<ul style="list-style-type: none"><li>• <b>Fabrication</b><ul style="list-style-type: none"><li>- General Requirements</li><li>- Form Fitting and Aligning</li><li>- Welding</li><li>- Heat Treatment and Boiling</li></ul></li><li>• <b>Examination</b><ul style="list-style-type: none"><li>- Methods</li><li>- Acceptance Standards</li><li>- Special Considerations</li></ul></li><li>• <b>Stamping</b><ul style="list-style-type: none"><li>- NPT Stamp</li><li>- Data Report</li><li>- NS Certificate</li></ul></li><li>• <b>Canadian Requirements</b><ul style="list-style-type: none"><li>- CSA N285.0</li><li>- Design Registration and Document Certification</li></ul></li><li>• <b>Engineer Qualification Requirements</b></li><li>• <b>NF Appendices</b></li><li>• <b>Interpretation</b></li><li>• <b>Code Cases</b></li><li>• <b>Sample Problems - Plate &amp; Shell Analysis</b></li><li>• <b>Linear Analysis</b></li><li>• <b>Load Rating Analysis</b></li></ul>

### WHO SHOULD ATTEND:

This course is directed toward piping designers, component & piping support designers and personnel required to review with and to understand the design documents associated with nuclear supports piping in operational Nuclear Power Stations. It will allow individuals who are required to certify Design Documents as required by the Section III, Division 1, to count this course as part of their experience base in accordance with the requirements in Appendix XXIII of Section III, Division 1.

### EXPECTATIONS:

Course participants with adequate experience will, by the end of the course, have attained the skills to:

1. Identify the various types of supports found in piping systems.
2. Compare the differences between the Canadian Standard and the ASME Code.
3. List the material requirements and any special requirements conflicting with permitted material specifications.
4. Explain and discuss the general design requirements for acceptability of support design.
5. Define the fabrication and installation requirements.
6. Identify the appropriate type of examination to be administered during fabrication.
7. List the type of records to be supplied with the support.

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