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PROFESSIONAL DEVELOPMENT COURSE

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

LECTURER: Mr. Bob Masterson, P.E.
DATE: **See website for Delivery Dates**
LOCATION: **ON-LINE Delivery through** ANRIC Enterprises Inc.
FEE: **Register & PAY three (3) weeks before start: $1830.00** (pp/plus HST)
Registrations received within three weeks: $1,970.00 (pp/plus HST)
Group pricing available; please contact training@anric.com or call +1 (416) 253-9459. ** **Payment can be made by Credit Card or Purchase Order.**

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 Documents meet the qualification requirements of CSA N285.0 /Section III, Appendix XXIII. The requirements for supports in the CSA Standard, CSA N285.0-17, 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 four-half day course consisting of the following:

COURSE CONTENT

- **General**
  - Scope of NF
  - Types of Supports
  - Intervening Elements and Boundaries of Jurisdiction
- **Materials**
  - Permitted Materials, Exempt Materials
  - Certification
  - Impact Testing
  - Quality Systems Program
- **Design 1**
  - Loadings and Service Conditions
  - Code Class and Design Procedures
  - Stress Intensities and Allowable Stresses
- **Design 2**
  - Plate & Shell Supports
  - Linear Supports, Standard Supports
  - Component and Piping Supports
  - Snubbers
  - Welding and Bolting
- **Design 3**
  - Load Rating
  - High Cycle Fatigue, Limit Analysis
- Functional Requirements

COURSE CONTENT

- **Fabrication**
  - General Requirements
  - Form Fitting and Aligning
  - Welding
  - Heat Treatment and Boiling
- **Examination**
  - Methods
  - Acceptance Standards
  - Special Considerations
- **Stamping**
  - NPT Stamp
  - Data Report
  - NS Certificate
- **Canadian Requirements**
  - CSA N285.0
  - Classification
  - Design Registration
  - Design, Materials & Fabrication Requirements
- Engineer Qualification Requirements
- NF Appendices
- Interpretation
- Code Cases
- Sample Problems - Plate & Shell Analysis
- Linear Analysis
- Load Rating Analysis

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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. List the material requirements and any special requirements conflicting with permitted material specifications.
3. Explain and discuss the general design requirements for acceptability of support design.
4. Define the fabrication and installation requirements.
5. Identify the appropriate type of examination to be administered during fabrication.
6. List the type of records to be supplied with the support.
7. Review the Canadian Requirements for Supports.

LECTURERS:

Mr. Bob Masterson has over 35 years experience working in industry with nuclear supports and the requirements of Section III of the ASME Boiler and Pressure Vessel Code. He is presently the Chair of the Working Group on Nuclear Supports (Sec. III) and a member of the Subgroup on Design (Sec. III). As a member of the Working Group on Nuclear Supports, Mr. Masterson has chaired and/or participated in several speciality Task Groups – design rewrite of Subsection NF, definition, and rewrite of the boundaries of jurisdiction, acceptable materials, examination, and accreditation requirements. He is currently the Manager of Engineering Services for Anvil International, a manufacturer of Nuclear and Commercial Pipe Support Products. Prior to joining Anvil International, Mr. Masterson was the Vice President of Operations for EAS Energy Services whose business included mechanical and structural engineering, litigation support, NRC audit support, turnkey projects, and valve qualification. Mr. Masterson is the author of Chapter 10, Subsection NF-Supports, of the ASME publication "Comparison Guide ASME B&PVC: Criteria and Commentary Select Aspects ASME Boiler, Pressure Vessel and Piping Codes."

IMPORTANT INFORMATION:

PAYMENT: Full payment is due at time of registration. Payment can be made via credit card (VISA, MasterCard or American Express), cheque or purchase order. **PLEASE NOTE:** Payment is non-refundable within 3 weeks prior to the start of the course.

CANCELLATION POLICY: Cancellation must be received in writing 7 days prior to course start date. You may send a substitute. Notification of a substitute must be received at least 72 hours prior to the commencement of the course to allow time for delivery of course material. If a substitute is not available, the fee for the course may be used towards another ANRIC course at a later date.

ANRIC Enterprises Inc. specializes in courses of calibre to industry by providing lecturers who have recognized expertise and who are involved with the development and application of Codes and Standards.

** **ANRIC Enterprises Inc. reserves the right to cancel any course and/or change lecturers. Courses that fail to register a "MINIMUM" of 7 participants will be cancelled. Personnel who require this course to meet qualification requirements should contact the office at training@anric.com to discuss/arrange other options.**

INFORMATION ASSOCIATED WITH ON-LINE COURSES FOLLOWS:

The course is delivered on-line.

The maximum number of people per course is 16 people. This limitation is set because the courses are run with Workshops using Breakout Rooms to provide for maximum interaction and learning experience. This provides an excellent learning opportunity.

All rights, title and content of the course manuals and all other instructional material shall remain the property of ANRIC Enterprises Inc.

The manuals will be delivered to course participants by courier.

Courses are run in half day sessions, (e.g., a 2-day course – 4 half-days, a 3-day course – 4 half-days and one full day), to accommodate the ergonomic issues of sitting at a small screen. This course is a 2-day course. An added benefit is that it allows people to cover off other work duties during the course. We have successfully done this for the nuclear power stations in Ontario over the past 2 years and this system has proven to be excellent.

There will be an examination at the end of each course. ANRIC Enterprises Inc. will provide certificates of successful completion for participants that achieve an examination result of 80% or higher.

NOTE: It is a REQUIREMENT of this course that participants have video and audio capability. If the dates of this course are not available for you, please contact us to arrange for other possibilities.