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PROFESSIONAL DEVELOPMENT COURSE

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

LECTURER: Mr. Bob Masterson & Mr. Richard Barnes, P. Eng.
DATE: **November 2-3, 2020**
LOCATION: ANRIC Enterprises Inc., 701 Evans Ave., Suite 202, Toronto
FEE: **Register four weeks before and pay at time of registration**:
$1,495.00 (pp/plus HST)
Registrations received within four weeks: $1,645.00 (pp/plus HST)

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:

- **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
- **Design 3**
  - Snubbers
  - Welding and Bolting
  - Load Rating
  - High Cycle Fatigue, Limit Analysis
- Functional Requirements

DAY 2:

- **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
  - Design Registration and Document Certification
- Engineer Qualification Requirements
- NF Appendices
- Interpretation
- Code Cases
- Sample Problems - Plate & Shell Analysis
- Linear Analysis
- Load Rating Analysis

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.

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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.

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."

Mr. Richard W. Barnes is the Principle Engineer at ANRIC Enterprises Inc. and has been actively involved for over 30 years in the development of the ASME and CSA Codes and Standards associated with Pressure Boundary for both nuclear and non-nuclear power plants. Mr. Barnes leads the team at ANRIC Enterprises Inc that offers technical assistance for companies registering Pressure Boundary products, and provides expert consultation on the application of the various pressure boundary codes. The ANRIC team also develops and delivers training on both the CSA and ASME Codes and Standards for delivery on-site at the ANRIC Learning Centre and off-site at the clients' premises. Mr. Barnes sits on various code committees responsible for the development of Codes and Standards. He is the past-chair and member of the ASME Standard Committee of the BPV III, which is responsible for the development of Section III of the ASME BPV Code; past Vice-Chair and member of N285A Technical Committee on CANDU Nuclear Power Plant Systems and Components, member of the B51Technical Committee on Boilers and Pressure Vessels, and member of N286 Technical Committee on Overall Quality Assurance for Nuclear Power Plants of the CSA Standards Committee; and member of ASME B16 Standards Committee of Standardization of Valves, Flanges, Fittings and Gaskets and member of the Subcommittee responsible for development of the B16:34 Standard . Mr. Barnes has received the ASME Dedicated Service Award and the highest ASME Nuclear award, the Bernard F. Langer Nuclear Codes and Standards Award in recognition for his contributions to the nuclear industry. In 2007, was elected to the ASME Grade of Fellow. In 2009, Mr. Barnes received the CNA Outstanding Contribution Award and in 2011 the CSA Award of Merit.

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.

CANCELLATION POLICY: Cancellation must be received in writing 7 days prior to course start date. If cancellations are made after that date, the cancellation fee will be 50% of the course cost. You may send a substitute. Notification of a substitute must be received at least 48 hours prior to the commencement of the course or a cancellation fee will be charged. **PLEASE NOTE:** The cancellation fee can be discounted towards any future course taken at the ANRIC Learning Centre.

FOOD AND BEVERAGE: At the start of the day juice, fruit, pastries, coffee and tea will be provided before the course. Coffee and Tea will be provided at mid-morning break, including pop in the afternoon and lunch will be provided. Please indicate when you are enrolling for the course if you have any specific food requirements. Every effort will be made to accommodate your needs in this area.

COURSE TIMES: Registration begins at 8:00 a.m. The course will begin at 8:30 a.m. and conclude at 4:30 p.m.

DRESS: Please dress so that you will be comfortable. It is prudent to dress light and bring a light jacket in case you need it during the course. The tolerance to temperature varies for people and sometimes room temperature acceptable to the majority may not be right for an individual.

PARKING: There is parking available for a fee of $5.00 per day. There is parking at 701 and 703 Evans Ave.

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.

For all course inquiries, please contact ANRIC at (416) 253-9459 ext. 123; email: training@anric.com
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