

## ASME SECTION III – AN OVERVIEW

**LECTURER:** Mr. Richard W. Barnes, P. Eng./Dr. Amarjit Banwatt  
**LOCATION:** ANRIC Enterprises Inc., 701 Evans Ave., Suite 202, Toronto  
**FEE:** Register four weeks before and pay at time of registration:  
 \$1,595.00 (pp/plus HST)  
 Registrations received within four weeks: \$1,745.00 (pp/plus HST)

### OBJECTIVE:

The objective of the course is to introduce participants to an overview of Section III of the ASME Boiler and Pressure Vessel (B&PV) Code. The course examines the concepts and principles that are the basis of the requirements in Section III for the materials and components used in the Pressure Boundary of a Nuclear Power Plant and how their requirements are applied in Canada. It examines the Section III requirements for the Certification of Documents, particularly the Design Specification, and reviews the Section III Code Articles of which a working knowledge is required for Canada.

**CONTENTS:** A three-day course consisting of the following:

DAY 1:	DAY 2:	DAY 3:
<ul style="list-style-type: none"> <li>• Introduction               <ul style="list-style-type: none"> <li>- Review of participant needs and understanding of Section III</li> </ul> </li> <li>• Basic Concepts and Terminology               <ul style="list-style-type: none"> <li>- Structure of B&amp;PV Code</li> <li>- Scope of Section III</li> <li>- Service Loadings and Limits</li> <li>- Code Class</li> <li>- Review of Concepts in the Glossary</li> <li>- Comparison with N285.0</li> </ul> </li> <li>• Materials               <ul style="list-style-type: none"> <li>- Definition</li> <li>- Control</li> <li>- Concepts of traceability and Certification</li> <li>- Section III Material</li> <li>- Requirements</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Components               <ul style="list-style-type: none"> <li>- Owner Responsibilities</li> <li>- Manufacturer</li> <li>- Certificates of Authorization</li> <li>- Design Specifications</li> <li>- Certification Requirements of N285.0 and Section III Design Reports</li> <li>- N285.0 Clause 7 Comparison</li> </ul> </li> <li>• Quality Assurance, Inspection and Stamping               <ul style="list-style-type: none"> <li>- Basic Elements of QA for Section III</li> <li>- Code Requirements for Inspectors</li> <li>- Concepts Behind Stamping and its use in Canada</li> </ul> </li> <li>• Design and Overpressure Protection               <ul style="list-style-type: none"> <li>- Jurisdictional Boundaries</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Design and Overpressure Protection (cont'd)               <ul style="list-style-type: none"> <li>- Design by analysis</li> <li>- Design by rule</li> <li>- Discussion of failure mechanisms</li> <li>- Welded vessels</li> <li>- Requirements for overpressure</li> <li>- Comparison with N285.0</li> </ul> </li> <li>• Fabrication, Examination and Testing, and Other Subsections of Section III, Div. 1               <ul style="list-style-type: none"> <li>- Review of Content</li> <li>- Connection with Design Welded Vessels</li> <li>- Requirements for Temporary Attachments</li> </ul> </li> <li>• ASME and Canadian Standards               <ul style="list-style-type: none"> <li>- Brief Overview of the Relationship Between Legal Requirements and Codes and Standards comparing the United States with Canada</li> </ul> </li> <li>• Checkout</li> </ul>

### WHO SHOULD ATTEND?

This course will introduce the participants to the fundamentals of Section III of the ASME Code. It is an intermediate course directed toward personnel such as Designers, Inspectors, Maintenance and Operations Personnel and Management who need to have an understanding of the Code concepts and how they are integrated into the Canadian regulatory system. Minimal experience with the Code and its application is desirable. It will allow persons 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:

At the completion of this training session the participants with adequate experience will have attained the skills to:

1. Have an understanding of the concepts used by the Section III, Div. 1 Code to maintain Pressure Boundary integrity and to operate in a safe manner at the design conditions.
2. Have a working knowledge of the relationship between the various Subsections and Articles of the Section III, Div. 1 Code for Pressure Boundary components and its relationship with the corresponding Canadian Standard CSA N285 and how the Canadian requirements are integrated into the system.
3. Identify how the various books are structured and to summarize the scope of Section III.
4. Define the concept of classification with regards to ASME Section III and CSA N285.
5. Identify the duties and responsibilities for the various parties (Owner Certificate Holder).
6. Identify the specific material requirements associated with the construction class and how to compare material requirements when Code editions and Addenda are of an earlier version than the current Code.
7. Identify and select the correct QA program associated with the construction of Pressure Boundary Components.

## LECTURERS:

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 B51 Technical 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.

Dr. Amarjit Banwatt has been actively involved for over 35 years in the stress analysis field and the use of ASME Codes and CSA Standards. He has been involved for the past 10 years in the development of the CSA N285.0 Standard as member of the Technical Committee. He has worked at AECL to prepare registration documents for Pressure Boundary components. Dr. Banwatt is a recognized stress analyst and Codes expert; he is consulted by many groups for Code clarifications. Dr. Banwatt is the past president of the Canadian Society for Mechanical Engineering and past member of NSERC Grants Selection Committee, Ottawa. He is a fellow of the Canadian Society for Mechanical Engineering and the Engineering Institute of Canada.

## 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.

**ACCOMMODATION:** The Stay Inn, 560 Evans Ave (2 minute drive to 701 Evans Ave), has provided a quote of \$99.00 per night for 1 bed and \$109.00 for 2 beds, including a continental breakfast. The Stay Inn can be contacted at [info@stayinn.ca](mailto:info@stayinn.ca) or 416-259-7899/1-888-445-4473 for more information. Please refer to ANRIC Enterprises Inc. when speaking with reservations. This is a small hotel, so it is advisable to book early.

**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.