

PROFESSIONAL DEVELOPMENT COURSE

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CSA N285.0 and ASME SECTION III – An Overview/CSA N285 Refurbishment/Maintenance

[Combined course including workshop activities that meets the objectives of two former courses, SEC III – An Overview and CSA N285 (Series). Includes Repairs, Replacement and Modifications – PEL 71212]

LECTURER: Richard Barnes, P. Eng.
DATE: See website for Delivery Dates
LOCATION: ON-LINE Delivery through ANRIC Enterprises Inc.
FEE: **PAY (3) weeks before the start: \$2,550.00** (pp/plus HST).
Pay after (3) weeks: \$2,650.00 (pp/plus HST).
Group pricing available; please contact training@anric.com or Call (416) 253-9459.
**** Payment can be made by Credit Card or Purchase Order.**

OBJECTIVE:

The objective of the course is to introduce participants to an overview of the codes and standards that govern the requirements for pressure boundary design and construction. The governing Standard is CSA N285.0 which makes extensive reference to 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 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 requirements for the Certification of Documents, particularly the Design Specification, and reviews the Section III Code Articles for which a working knowledge is required for Canada. This course has been developed to cover the objectives of two courses offered by ANRIC and as such would replace the need to attend these two courses to be qualified. By combining the two courses, ANRIC has been able to provide more effective training. It has reduced the training time from 5 days (2 days for N285 (Series) plus 3 days for SEC III – An Overview) to 4 days and include the requirements for Repairs, Replacements, Modifications and Testing.

WHO SHOULD ATTEND?

This course will introduce the participants to the fundamentals of the CSA Standard N285.0/N285.6 and 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 understand the Code concepts and how they are integrated into the Canadian regulatory system. Some introductory experience with the Code and its application is desirable and will help the participant engage in the course more easily. 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 the training, the participants with adequate experience will have attained the skills to:

1. Understand the concepts used 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 scopes of N285.0 and 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, etc.).
6. Identify the specific material requirements associated with the construction class and how to compare material requirements of the current Code with Code editions and Addenda of an earlier Code Edition.
7. Identify and select the correct QA program associated with the construction of the Pressure Boundary Components.
8. An overview of the design concepts and their relationship to fabrication, installation, examination and the testing requirements.

LECTURERS:

Mr. Richard W. Barnes is the Principal 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 all course inquiries, please contact ANRIC at (416) 253-9459 ext. 123; email: training@anric.com

ANRIC Enterprises Inc. | 701 Evans Ave, Suite 202 | Toronto, ON M9C 1A3 | (PH) 416-253-9459 | (FX) 416-252-5335 | www.anric.com

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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 items and provides expert consultation on the application of the various pressure boundary codes. Mr. Barnes sits on various code committees responsible for the development of Codes and Standards for quality assurance and requirements for the pressure boundary. He is:

- Past-chair and member of the ASME Standard Committee of the BPV III (Section III); Past Vice-Chair and member of N285A Technical Committee; Member of the B51 Technical Committee; Member of N286 Technical Committee; and Member of ASME B16 Standards Committee.
Mr. Barnes is a Fellow of ASME and has been recognized for contribution to the industry through the following awards:
- The ASME Dedicated Service Award; The Bernard F. Langer Nuclear Codes and Standards Award; The CNA Outstanding Contribution Award; The CSA Award of Merit; and The ASME Melvin R. Green Codes and Standards Medal.

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.

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

CONTENTS: Live online delivery – Delivered over 8 half-day segments (12:00 PM – 4:00 PM)

COURSE CONTENTS	COURSE CONTENTS	COURSE CONTENTS
<p>Introduction: Safety & pressure boundary integrity. Regulatory requirements. Review of participant needs and understanding of N285.0 & Section III.</p> <p>Scope of CSA pressure boundary Standard N285.0: Other N285 Standards</p> <p>Fundamental Concepts: Control of Activities. Third Party Inspection and Compliance.</p> <p>Review of participant needs and understanding of N285.0 & Section III:</p> <p>Basic Concepts and Terminology: Structure of B&PV Code</p> <p>ASME SEC III & the N285 Series: Classification. Section III is a component code. Design Registration.</p> <p>Scope of Section III: Basic Concepts Service loadings and limits Code Class Review of Concepts in the Glossary Comparison with N285.0</p>	<p>N285.0 & SEC III Materials: Definition. Control. Concepts of identification and certification. Section III Material requirements.</p> <p>Components: Owner responsibilities. Brief overview of the relationship between legal requirements and Codes and Standards comparing the United States with Canada Manufacturer certificates of authorization. Design specifications. Certification.</p> <p>Requirements of N285.0 and Section III Design Reports</p> <p>N285.0 Clause 7: QA - N285.0, requirements for Components: Quality assurance, inspection and stamping. Basic elements of QA for Section III. Code requirements for inspectors. Concepts behind stamping and its use in Canada.</p>	<p>Design: Jurisdictional boundaries Design by analysis Design by rule Discussion of Failure Mechanisms Welded vessels</p> <p>Requirements for overpressure protection and comparison with N285.0:</p> <p>Fabrication, Examination and Testing, and Other Subsections of Section III, Div. 1: Review of content. Connection with design of welded vessels. Requirements for temporary attachments.</p> <p>Repairs, Replacements & Modifications: Definitions Repairs Replacements Modifications New Modification Modification to an existing system Temporary Modification Refurbishment</p>

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IMPORTANT INFORMATION:

PAYMENT: Full payment is due at time of registration. Payment can be made via credit card (VISA, MasterCard or American Express) 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 later.

**** 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 live 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.

The course is run online in half day sessions, (e.g., a 2-day course – 4 half-days, a 3-day course – 4 half-days and one full day, 4-day course – 8 half-days), to accommodate the ergonomic issues of sitting at a small screen. 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 year and this system has proven to be excellent. **This course if run in a classroom setting, is a 4 full day course. It will be run live on-line i.e., On-line conducted over 8 half-days.**

REQUIREMENT: This course requires participants to have video and audio capability. If the dates for this course are not available to you, please contact us to arrange other possibilities

There will be an examination/checkout at the end of each course. ANRIC Enterprises Inc. will only provide certificates of successful completion for participants that achieve an examination result of 80% or higher and video access is required for the checkout.