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## ASME SECTION III - DESIGN REQUIREMENTS FOR NUCLEAR PIPING

### OBJECTIVE:

The objective of this course is to provide participants with an understanding of the existing rules of NB/NC/ND-3600 and their basis. There will be references, as appropriate, to the use of NB-3200 Design by Analysis in the design of piping. Emphasis will be given to the importance of the Design Specification in assuring Code satisfaction and the basis of the new Seismic rules will be discussed. The course will also cover design requirements for the interface between piping and its supports from the piping designer perspective. This course has been designed, in combination with the Section III - An Overview course, to assist the participants required to certify Design Reports to meet the qualification requirements of Appendix XXIII. The requirements for piping in the CSA Standard, CSA N285.0-95, will be covered so that participants will understand the relationship of the ASME Code to nuclear piping in Canada. The course will provide ample opportunity to discuss issues raised by the participants.

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

<p><b>DAY 1:</b></p> <p><b>CLASS 1 PIPING:</b></p> <ul style="list-style-type: none"> <li>• Introduction to Piping Design</li> <li>• Importance of the Design Specification</li> <li>• <b>Discussion of Design by Analysis</b> <ul style="list-style-type: none"> <li>- NB-3200 Criteria versus Piping Design</li> </ul> </li> <li>• <b>Primary Stress Protection</b> <ul style="list-style-type: none"> <li>- Minimum thickness, Standard Fittings, Fabricated branch connections</li> </ul> </li> <li>• <b>Collapse Protection</b> <ul style="list-style-type: none"> <li>- B Indices, Loadings-Design</li> <li>- Level A, Level B, Level C, Level D</li> </ul> </li> <li>• Seismic Rule Discussion</li> <li>• CSA CN285.0 Requirements</li> </ul>	<p><b>DAY 2:</b></p> <p><b>CLASS 1 PIPING (continued):</b></p> <ul style="list-style-type: none"> <li>• <b>Fatigue</b> <ul style="list-style-type: none"> <li>- C and K Indices, Shakedown, Inelastic Cycling, Usage Factor Determination</li> </ul> </li> </ul> <p><b>CLASS 2 AND 3 PIPING:</b></p> <ul style="list-style-type: none"> <li>• Background</li> <li>• Primary Stress Protection</li> <li>• <b>Collapse Protection</b> <ul style="list-style-type: none"> <li>- Stress Intensification Factors, B Indices versus 0.75i</li> </ul> </li> <li>• Loadings</li> <li>• Fatigue</li> <li>• <b>SUPPORT/PIPING INTERFACE</b> <ul style="list-style-type: none"> <li>- Piping designer perspective</li> <li>- Interaction between piping and supports</li> <li>- Discussion on areas of concern</li> </ul> </li> </ul>
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### WHO SHOULD ATTEND?

This course is directed towards piping designers and the personnel who are required to interact with and to understand the design documents associated with piping in the operation of Nuclear Power Stations.

### EXPECTATIONS:

The course will provide participants with an excellent explanation of the requirements for nuclear piping in Section III, and the basis for these requirements and their application to piping systems.