



Presentation:

Spallation Neutron Source Project: Design of the Sequoia Detector Vessel

Speaker: Richard M. Grant, M.Eng., P.Eng.
President, Grantec Engineering Consultants Inc.

Location: Dalhousie University, Sexton Campus, Room C111
1360 Barrington Street, Halifax, NS

Date & Time: March 13, 2009, 12:30 to 13:30

Abstract: The Spallation Neutron Source (SNS) project in Oak Ridge, Tennessee is an accelerator-based neutron source that provides the most intense pulsed neutron beams in the world for scientific and industrial research and development. At the end of 2007, the SNS was listed in the Guinness Book of Records as the most powerful neutron source in the world. The research instruments at SNS, located on the eighteen beam lines from the neutron source, will make possible neutron scattering studies of complex materials that are of interest to a great range of industries.

One of the research instruments at SNS is the Sequoia Fine-Resolution Fermi Chopper Spectrometer, a direct geometry time of flight chopper spectrometer with fine energy transfer and wave vector resolution. During 2006, Grantec Engineering Consultants Inc. of Halifax, Nova Scotia, was engaged to perform the mechanical and structural design of the Sequoia Detector and Sample vessels, the primary neutron containment envelopes for the Sequoia Spectrometer instrument. The Sequoia Detector Vessel is considered to be one of the largest vacuum chambers in North America and is the largest vacuum chamber at any neutron scattering facility in the world.

The presentation will provide an overview of the design and analysis performed by Grantec for the Sequoia Detector and Sample vessels. The presentation will also include a video overview of the Spallation Neutron Source project.

Biography: Richard Grant is the President and Principal Engineer of Grantec Engineering Consultants Inc. Richard is a graduate of Dalhousie University (B.Eng. 1983 and M.Eng. 1984) and has over twenty-five years experience in areas that include: mechanical and structural engineering, and naval architecture. He has held senior management positions with various organizations within the Halifax-Dartmouth area. He is the vice-chair of the Strategic Steering Committee on Offshore Structures (SSCOS), the principal committee responsible for the direction for the offshore structures standards initiatives under CSA and ISO in Canada. His firm, Grantec, is a specialist engineering consulting firm that provides services to the offshore, energy, research, petro-chemical, marine, manufacturing, and defence sectors. Information on Grantec can be found on their website, www.grantec.ca. Grantec, and its involvement with the SNS project, is the subject of a feature article in the March 2009 edition of the Business Excellence magazine, www.bus-ex.com.