

# Engineering Services Overview



## Overview

BWXT Canada Ltd. (BWXT) has been continuously engineering critical components for commercial nuclear power plants for over 50 years. Although BWXT may be best-known for its extremely successful Replacement Steam Generator designs, our engineering capabilities and experience extend well beyond SG design to include services for a variety of ASME Sec. III and Sec. VIII components, including Steam Generators (SGs), safety-related and balance of plant Heat Exchangers (HXs), feedwater heaters, pressurizers and Reactor Vessels (RVs).

## Applications

Utilities can benefit from BWXT's engineering service capabilities in the following areas:

- Life cycle management, assessment of active and potential degradation due to corrosion, cracking or mechanical damage
- Engineering assessments of operational issues such as vibration and wear, tube support fouling, establishing plugging margins
- Operational support, including optimization of inspection plans, tube integrity assessments and disposition of foreign objects in tube bundles
- Field modifications to pressure components such as SGs, HXs, pressurizers and RVs
- Specialized engineering support services by our experienced engineering analysts using the latest commercial and proprietary software related to Finite Element Analysis (FEM), Computational Fluid Dynamics (CFD) analysis, thermal-hydraulic analysis of SGs and HXs, Flow Induced Vibration (FIV) and wear analysis

## Capability and Tools

BWXT has a variety of methods available to perform inelastic analysis with proven commercial Finite Element (FE) codes (ANSYS, ABAQUS).

Capabilities include:

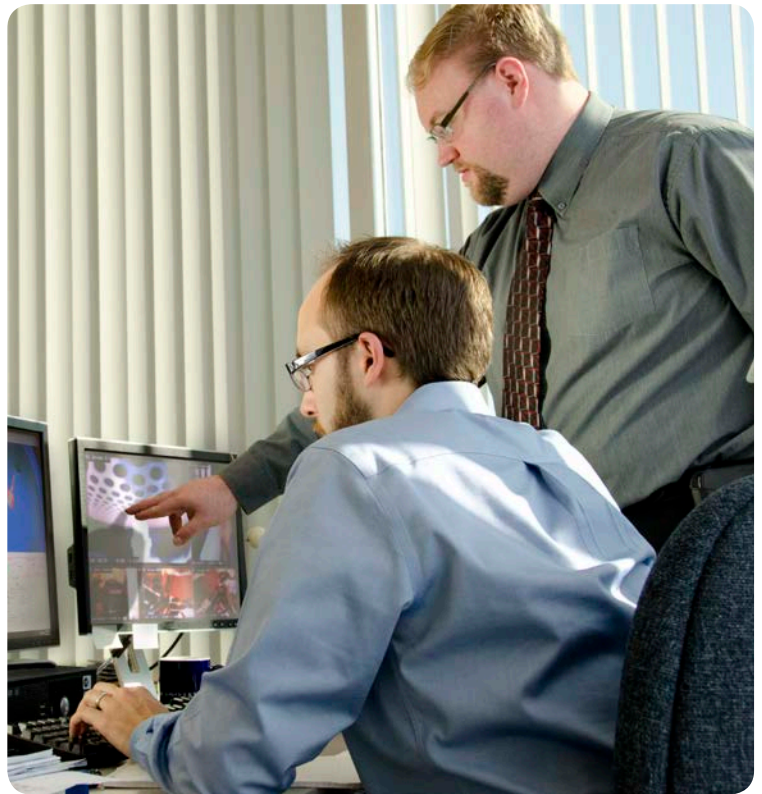
- Primary stress or limit analysis through elastic iterations
- Elastic-perfectly plastic limit or primary stress analysis
- Plastic analysis, including hardening and non-linear geometric effects
- Analysis of anisotropic and perforated structures
- Explicit FE analysis for highly non-linear problems
- Inelastic transient and fatigue analysis

The analysis method can be selected based on the nature of the problem to be analyzed and the preference of the client.

Engineering Services analyses at BWXT are performed by the same pool of engineers that design and support the fabrication of BWXT's nuclear SGs, HXs and other equipment. These engineers have an extensive knowledge of the ASME Pressure Vessel and Piping Code and have developed a strong analytical capability that provides a depth to our engineering services capabilities that stand-alone engineering organizations cannot match.

## Engineering Services

The Engineering Services organization draws from a pool of nearly 80 technical employees. BWXT has a well-balanced demographic, with approximately 25% of employees having 20+ years of service, 25% with 10 to 20 years of service, 7% with 5 to 10 years of service and 43% with less than 5 years of service. 90% of these employees have a mix of Doctorate, Masters and Bachelors degrees, and the remaining 10% technical diplomas. The large number of new employees is an indication of the recent growth that BWXT has experienced in its engineering organization and demonstrates that BWXT supports student training programs, has a history of hiring new-grad engineers to engage in new ideas and ways of thinking, and is serious about knowledge transfer from our senior employees over to the future leaders.



**NUCLEAR ENERGY**

GOVERNMENT SERVICES

ADVANCED TECHNOLOGIES

BWXT Canada Ltd. is a subsidiary of BWX Technologies, Inc. (BWXT). Headquartered in Lynchburg, Va., BWXT is a leading supplier of nuclear components and fuel to the U.S. government; provides technical, management and site services to support governments in the operation of complex facilities and environmental remediation activities; and supplies precision manufactured components and services for the commercial nuclear power industry.

The information contained herein is provided for general information purposes only and is not intended nor to be construed as a warranty, an offer, or any representation of contractual or other legal responsibility.

Products and services described herein are provided by BWXT Canada Ltd., a BWXT subsidiary.

© 2021 BWXT Canada Ltd. All rights reserved.

[www.bwxt.com](http://www.bwxt.com)



ANSYS® is a registered trademark of ANSYS, Inc.

<sup>1</sup> CFX® is a registered trademark of Sony Corporation.



BWXT Canada Ltd.

**BWXT Canada Ltd.**

581 Coronation Blvd.

Cambridge, ON

N1R 5V3 Canada

t: +1.519.621.2130