

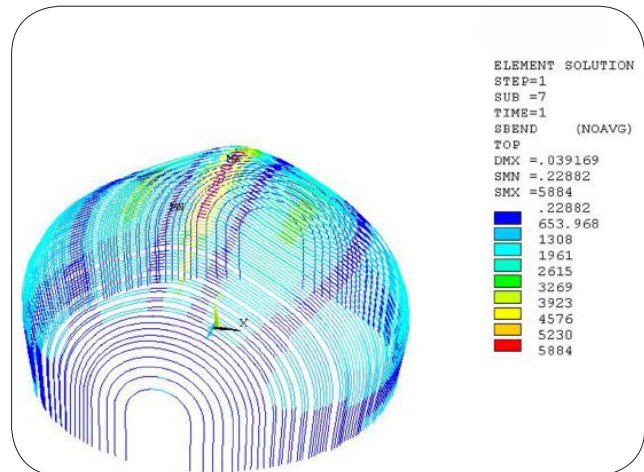
## Overview

With over 50 years of experience in research and design of nuclear equipment, BWXT Canada Ltd. (BWXT) has developed an integrated approach for structural evaluation, which is comprised of finite element analysis, classical analysis and testing. The approach has been applied to many component and piping designs and field modifications, in compliance with all code and regulatory requirements.

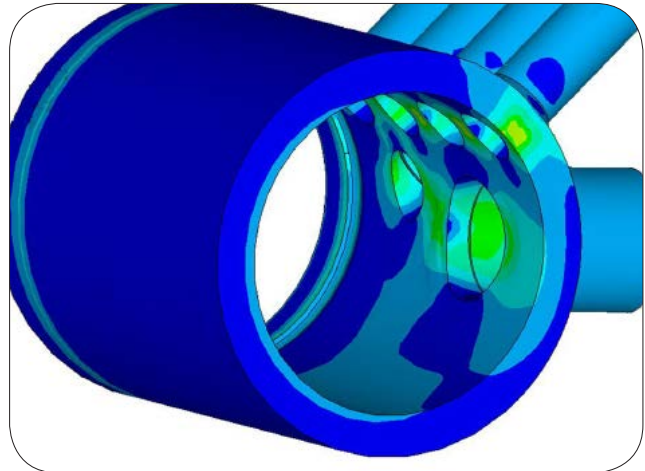
## Applications

BWXT's experienced engineers participate in ASME Code committees, industry groups, and conferences and can offer their expertise and talent in the following areas:

- Design of ASME Code Section III Class 1, 2 and 3 vessels, components and piping
- Design of ASME Code Section VIII Div. 1, 2 and 3 vessels
- Transient heat transfer and thermal stress analysis
- Seismic analysis – response spectrum analysis and time history analysis
- Elastic-plastic analysis – limit and collapse load analysis
- Linear and non-linear large deformation dynamic analysis
- Piping system analysis in accordance with ASME B31.1 Power Piping Code or Section III of ASME code
- Pressure vessel bolted closure design, redesign and assessment of existing designs, including gasket testing and analysis
- Fracture mechanics analysis including crack growth, leak before break, failure assessment and testing in accordance with ASME Code Sections III and XI
- Fatigue analysis to the ASME Boiler & Pressure Vessel Code Sections III and VIII criteria



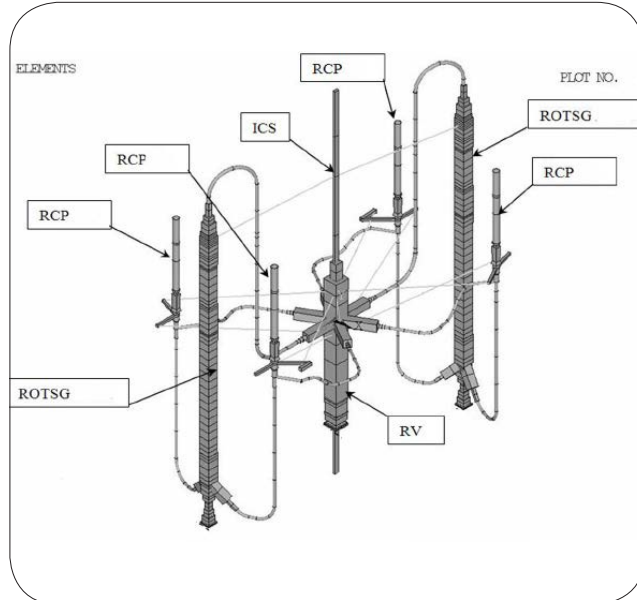
*Evaluation of personnel loading on U-tubes and its support structure*



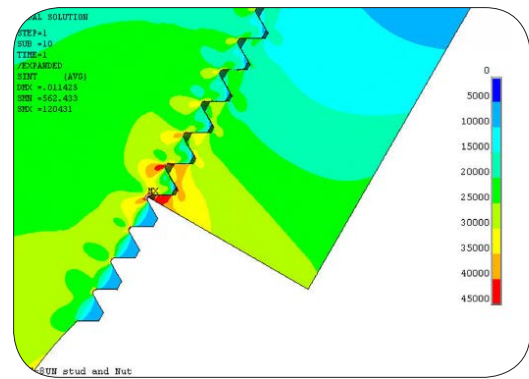
*Finite element model of a complex header assembly, showing residual stresses*

## Capability and Tools

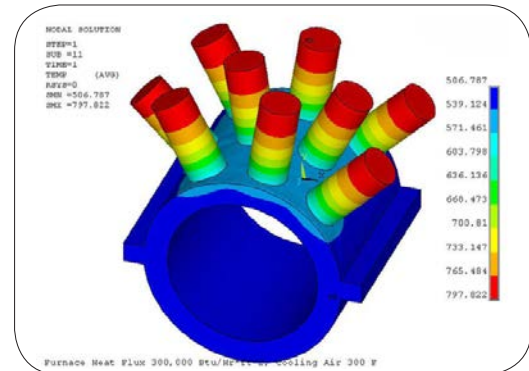
BWXT uses industry leading computer codes including ABAQUS™ and ANSYS®, for finite element analysis and 3-D modeling. Commercial codes are supplemented by in-house computer codes meeting BWXT's QA requirements for specific applications and proprietary analyses. Customer-specific requirements for other specified software can be accommodated.



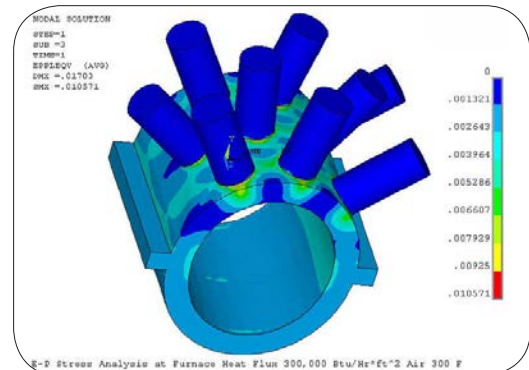
ANSYS® model of BWXT PWR reactor coolant system for seismic analysis



Stress analysis of specialized threaded connection under tension



Temperature distribution of furnace tube under radiation and internal water flow



Plastic strain distribution of furnace tube under radiation and internal water flow

## NUCLEAR ENERGY

## GOVERNMENT SERVICES

## ADVANCED TECHNOLOGIES

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

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