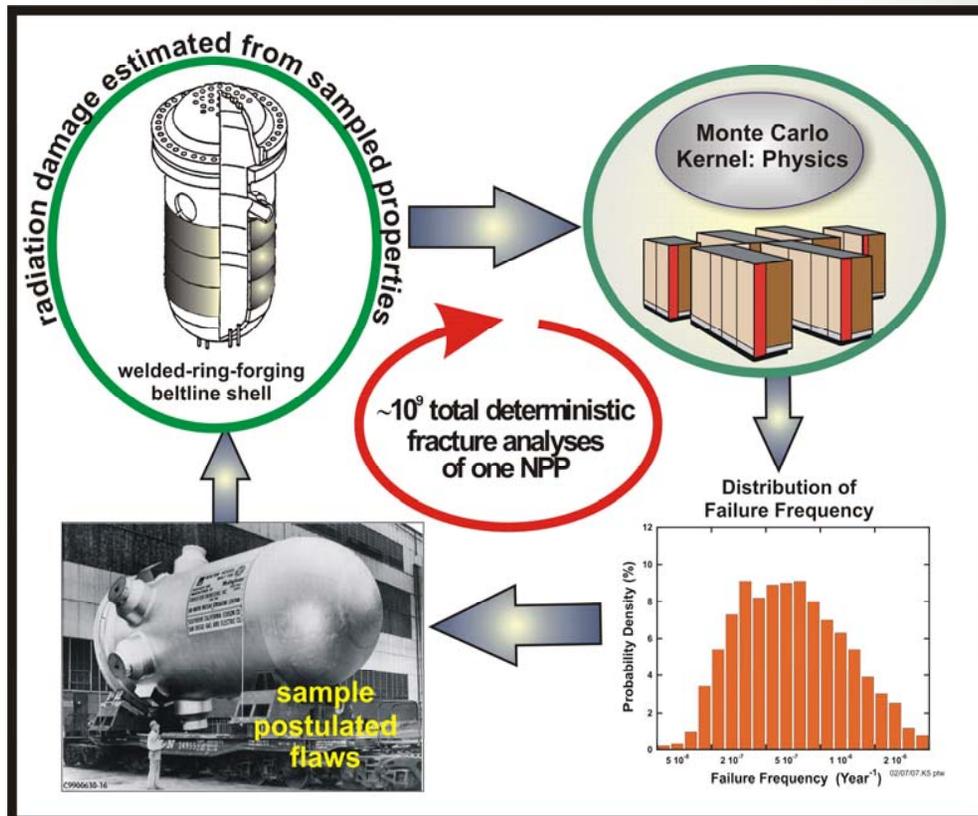


# FAVOR (Fracture Analysis of Vessels - Oak Ridge)

Modeling and Simulation Group

Computational Sciences & Engineering Division



Point of Contact:

B. Richard Bass  
(865) 576-8571  
bassbr@ornl.gov

## Problem Statement:

- On behalf of the NRC, ORNL is helping to:
  - Finalize and/or develop technical bases for revision of 10 CFR 50.61(a); Appendix G to 10 CFR Part 50; and RG 1.154, "Format and Content of Plant-Specific Pressurized Thermal Shock Safety Analysis Reports for Pressurized-Water Reactors," based on an amalgamation of recent research advancements.
  - Extend existing technical understanding and analysis methodologies so that they can be used to perform probabilistic safety assessments of the mechanical integrity of pressurized components in general, and not be limited in their validated applicability to only the beltline region of the reactor pressure vessel (RPV).

## Technical Approach:

- Through its support of the Probabilistic Pressure Boundary Integrity Safety Assessment (PISA) Program, the CSED-developed FAVOR probabilistic fracture mechanics (PFM) code is the NRC/industry standard for RPV assessment.
- FAVOR has a tool-kit with unique capabilities to perform P-T analyses.

## Benefit:

- CSED's PFM code FAVOR provided best-estimate and uncertainty assessments for informed regulatory decisions leading to recently implemented Alternative Pressurized-Thermal-Shock (PTS) *Rule 10 CFR 50.61a* and for risk-informed update of plant operating limits defined in *10 CFR 50 Appendix G*.

