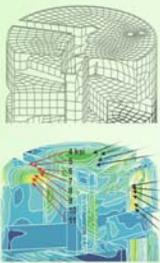


Embrittlement Database – EDB

Computational Structural Fracture Mechanics Team

The ORNL Modeling and Simulation Group (MSG) develops sophisticated numerical solutions for a wide range of scientific, engineering, and operational applications. MSG's core competency is computational physics and engineering, and within our Computational Structural Fracture Mechanics Team we have been developing new tools for research in the area of Nuclear Pressure Vessel Technology. Sponsored by the U.S. Nuclear Regulatory Commission's Office of Nuclear (NRC), ORNL is working on an effort to create a web-based reactor pressure vessel (RPV) steel embrittlement database for the entire U.S. fleet of 104 commercial Nuclear Power Plants (NPPs).

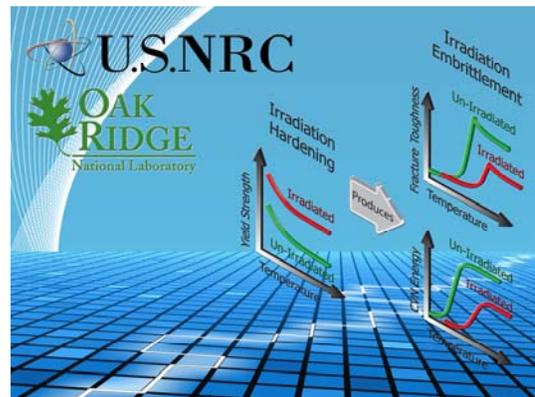


**Modeling
and
Simulation
Group**

Main Characteristics

The initial version of the embrittlement database is intended to:

- (1) Provide an important tool for RPV integrity assessment within the NRC regulatory environment.
- (2) Constitute a crucial element for development of future embrittlement predictive models for light water reactor (LWR) RPVs.
- (3) Provide data (both un-irradiated and irradiated) entered from surveillance reports submitted to NRC by 104 commercial NPPs.
- (4) Contribute to Reg. Guide 1.99 and 10 CFR 50 Appendix H.



The NRC recognizes that a project of such scope cannot be conducted by any one organization. To be successful, such a project requires the participation of organizations and individuals representing a wide range of interests (e.g., regulators, industry, universities, research organizations, and national laboratories) worldwide. MSG is uniquely positioned to address this challenge in that it provides a confluence of database and web hosting capabilities as well as a demonstrated track record in interacting with nuclear technology collaborators both domestic and internationally. We welcome the opportunity to discuss your potential applications and ways that the Embrittlement Database can contribute to a solution.

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