

Global Engineering Services

Specialized Structural Analysis and Design Capabilities

Background

Westinghouse provides full-scope structural capability, including seismic and dynamic analysis and design to address utility needs for both nuclear safety-related and conventional industrial buildings and structures.

Westinghouse has a long history of providing innovative solutions for specialized customer needs to meet code, regulatory, and other unique requirements.

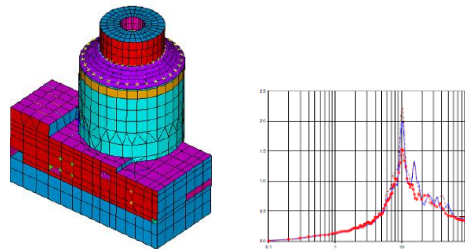
With its vast experience in power plant design and implementation, Westinghouse has the expertise to develop, plan, and perform state-of-the-art analysis and the know-how to implement practical solutions.

Description

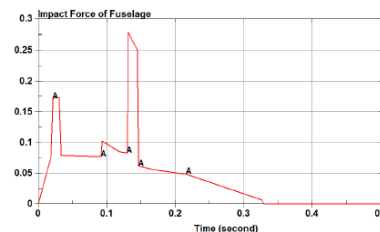
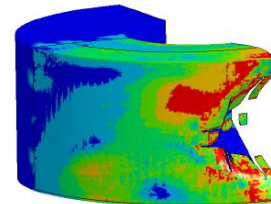
Westinghouse has extensive experience in the following areas:

- Seismic in-structure response spectra (ISRS) and site-specific time history development
- Modal superposition and time history analysis of buildings, systems, and components
- Seismic fragility development
- Soil-structure interaction analysis (SSI)
- Dynamic and non-linear analysis (3D ANSYS®/LS-DYNA®/ABAQUS®) of concrete, steel, and composite structures
- Impact and missile barrier design and analysis
- Tornado and hurricane wind and missile
- Accidental explosion design and analysis
- Coupled thermal-structural analysis, including fire effects on building structures
- FLEX (flexible strategies to protect against extended loss of power resulting from beyond design basis events) evaluation and strategy
- Aircraft impact analysis and structural design optimization

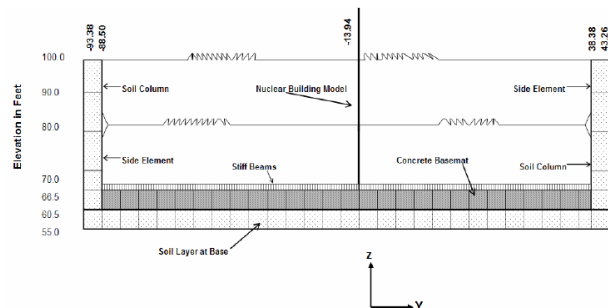
- Experienced seismic and structural experts for peer review



ISRS of Power Plant Structure



Aircraft Impact Analysis



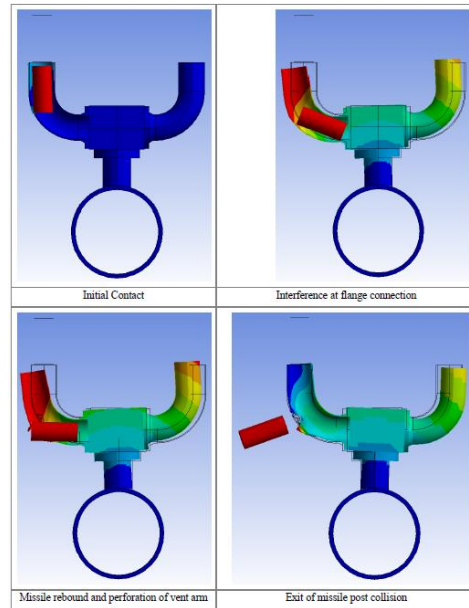
Soil-Structure Interaction Foundation Modeling

Benefits

Westinghouse has been advancing the nuclear industry since its inception more than 50 years ago. Due to its extensive nuclear power plant design experience in domestic, international, and new plant technology, Westinghouse has the unique ability to integrate its expertise in structural design, analysis, and testing to develop creative solutions.

With its vast experience in passive nuclear power plant design and implementation, Westinghouse has the expertise to address specialized needs in current and future generation nuclear plants and modern industrial structures.

Westinghouse is able to provide a full-scope integrated approach by teaming with other experts within our organization and the ability to leverage our experience and commitment to quality to develop unique solutions.



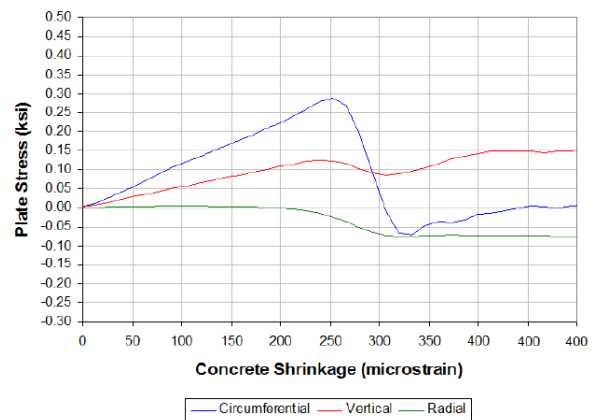
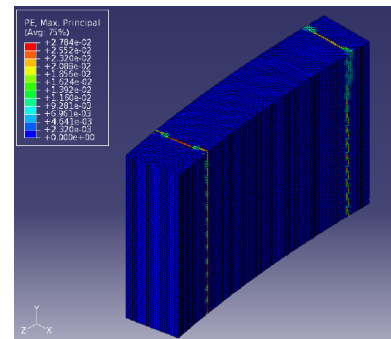
Missile Impact Analysis of a Piping Configuration

Experience

Our broad experience includes expertise in state-of-the-art analysis tools, such as ANSYS®, LS-DYNA®, and ABAQUS® FEA software products. Our solid modeling expertise and database management tools allow for applying Building Information Modeling (BIM) methods where useful.

Recent nuclear power plant experience includes the AP1000® nuclear island design and analysis, involving seismic time history and ISRS development; accident thermal evaluation; tornado missile evaluation; aircraft impact analysis; seismic fragility development using EPRI, ASCE, ANS/ASME requirements.

AP1000 is a registered trademark of Westinghouse Electric Company LLC, its affiliates and/or its subsidiaries in the United States of America and may be registered in other countries throughout the world. All rights reserved. Unauthorized use is strictly prohibited.



Stress and Concrete Shrinkage Evaluation of a Complex Composite Structure