

Civil and Structural Engineering Capabilities

Background

Westinghouse provides full-scope civil and structural engineering capabilities and offers a broad range of solutions for the nuclear power industry. Westinghouse has a long history of providing innovative solutions to address customer needs to meet code, regulatory, and other unique requirements.

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

Description

Westinghouse has extensive experience in the following areas:

- Reinforced Concrete Structures
 - Seismic, dynamic, thermal, impact, and impulsive loading conditions
 - Cast-in-place and post-installed concrete anchorage
 - Concrete inspection, repair and rehabilitation
 - Concrete aging evaluation
 - Interface with structural steel and composite structures
 - Concrete mix design for conventional and self-consolidating concrete (SCC) applications
- Structural steel
 - Extensive experience with challenging environments and loading conditions
 - Modularization
 - Fabrication and erection engineering support
 - Structural assessment, repair and rehabilitation
- Steel and Concrete Composite Structures
 - Industry-leading, specialized application to meet unique design requirements
 - Full-scale testing
 - Modularization and optimization of designs
 - Construction mock-up
 - Fabrication detailing
 - Construction interface and support



Modularized Building Structures



Large Foundation Design



Braced Frame Design



Structural Steel and Composite Design

- Structural condition assessments
- Foundation design and analysis
 - Detailed FEA and soil bearing analysis
 - Sliding and stability evaluation
- Geotechnical engineering
 - Liquefaction evaluation
 - Earthwork and soil improvement
 - Settlement evaluation

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 plant design and implementation, Westinghouse has the expertise to address specialized needs for current and future generation nuclear plants.

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 to develop unique solutions.

Experience

Our broad experience includes expertise in state-of-the-art analysis tools, such as GT-STRUDL®, 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.

Westinghouse has extensive experience in application of AISC, ACI, AWS, ASCE and IBC requirements. Our experts are actively engaged in code activities and development.

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, ANS/ASME requirements.

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