Structural Analysis & Design

Complete Solutions

AREVA's experts are fully equipped to offer complete solutions for your structural analysis needs. We bring the structural analysis capabilities of the Nuclear Steam Supply System (NSSS) and Balance of Plant (BOP), as well as the experience of an Original Equipment Manufacturer, Owner/Operator and Architect/ Engineer.

From piping support for the primary loop to the analysis of the containment structure itself, AREVA has the capability to analyze and design any type of building or structure, using virtually any type of material. Since the 1950s, we have continued to build on our experience in nuclear plant design and analysis covering the entire spectrum of systems, structures and components.

Technical Capabilities

- Structural steel, concrete and masonry design and analysis for conventional and extreme service conditions:
  - Earthquake
  - Hurricane
  - Tornado and tornado missile impact
  - Dropped load, aircraft and blast impulse
  - Hydrostatic and hydrodynamic
  - Compartment pressurization, line break impact/impulse
- Seismic equipment qualification by IEEE-344 analysis, test or experience data
- Programmatic resolution of IPEEE and USI A-46 issues static, dynamic, time-history, linear and non-linear limit-state and load factor design
- Finite element analysis using ANSYS, STRUDL, LS-DYNA, SASSI and other codes for dynamic, linear and non-linear analyses on a variety of applications, such as:
  - Modifications to pre-stressed concrete containment buildings
  - Spent fuel transport cask, equipment and reactor head drop
  - Pump-structure interaction
  - Vessel/piping nozzle and branch connections
  - Reinforced concrete, steel and masonry structures
  - Integral welded attachments
  - Structural connections
  - Baseplates

- Design to diverse codes and standards — ASCE, IBC, AISC, ACI, API, AWS, ASME, ANSI, DOE standards
- Investigation of complex structural behavior due to effects such as discontinuities, soil-structure and fluid-structure interaction, resonance, stress intensification/concentration, friction effects and non-linear material behavior
- Seismicity evaluations for development of response spectra, including SSI effects and the use of probabilistic-based response spectra for applications demanding less conservatism
- Development of in-structure response spectra for equipment qualification

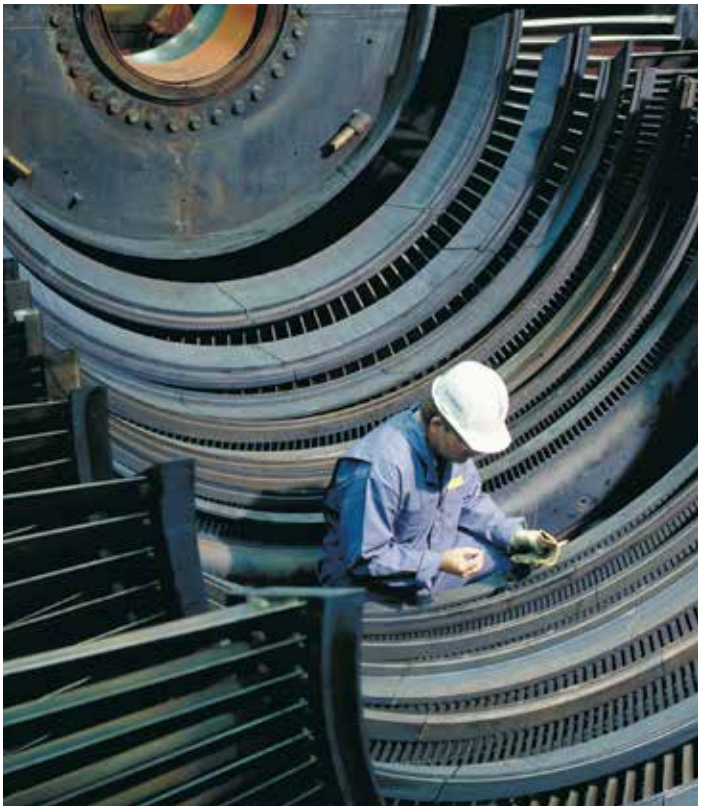
Features and Benefits

- Proven industry record
- Strong culture of ownership and customer focus
- Comprehensive PWR and BWR experience
- Full-scope capabilities
- Strong project management processes
- NQA-1 and ISO 9001 Quality Assurance
- Access to AREVA's broad international experience

Cost-Effective & Focused Approach

AREVA stands ready with comprehensive services to apply the proper mix of solutions to bring maximum advantage for minimum cost. Our team will listen to your needs and collaborate with you to develop an approach that fulfills your expectations. Through our experience and project management capabilities, we will reduce the time burden on your plant staff and facilitate the transfer of technology and knowledge. And we don't stop there. You can count on us to assist with follow-up questions that may arise — we're here for the long haul.

AREVA is committed to help keep your plant online safely and reliably. With U.S. market leadership and global resources, AREVA delivers integrated engineering solutions to improve your plant performance.



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