

# Civil Structural and Geotechnical Engineering

## The Westinghouse Solution

The BOP and Design Engineering civil structural and geotechnical engineering services is a proven and consistent supplier of civil and geotechnical design and services for power generation, oil & gas, and industrial infrastructure projects. To simplify contracting activities, Westinghouse provides a wide range of civil and geotechnical engineering services from simple engineering staff augmentation to integrated, comprehensive solutions for large, complex civil designs to component replacements and plant-wide modification projects.

## Services Include:

- Structural Analysis and Design
  - Reinforced Concrete Structures
  - Steel Structures
  - Deep and Shallow Foundations
  - Equipment Supports and Anchorage
  - Raceway Supports
  - Impact and Missile Barriers
  - Structural Condition Assessment
  - Structural Repair and Rehabilitation
- Specialty Engineering
  - 2D & 3D Finite Element Analysis
  - High Seismic Analysis and Design
  - Site-specific Response Spectra
  - Soil-structure Interaction
  - Blast Analysis and Design
  - Hydrodynamic Analysis
- Geotechnical Engineering
  - Site Characterization
  - Dynamic Properties Evaluation of Soil/Rock
  - Settlement Monitoring
  - Ground Improvement Recommendations
  - Liquefaction Potential
- Civil/Site Engineering
  - Site Selection Studies
  - Stormwater Management
  - Erosion and Sedimentation Control

## Major Types of Projects:

- Power Generation Facilities
  - Nuclear
  - Fossil
  - New Plant Design
  - Existing Plant Mods
- Core Power Upgrades
- Steam Generator Replacements
- Licensing Basis Verification

### CSA Engineering Software

- ANSYS™
- GT STRUDL™
- LS-DYNA™
- ABAQUS™
- InRoads™
- MicroStation™
- HydroCad™
- AutoTurn™

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