

Design Basis Calculation Reconstitution Project Profile



Project Name: Design Basis Calculation Reconstitution

Stations: Clinton, D.C. Cook, Fort Calhoun, LaSalle, Point Beach, and Salem

Description:

Following the engineering and design of new nuclear power plants in the 1970s and 1980s, focus was put on increasing plant efficiency and capacity factors and reducing outage durations. Additionally, thousands of design changes and equipment updates were implemented due to regulatory compliance issues. Maintaining in an up-to-date manner the vast amount of plant documents and records attendant with these activities can be an arduous task for plant owners. Over time, plants can experience problems maintaining proper configuration management and, by extension, maintaining the design basis consistent with the licensing basis. In many cases, this leads to more stringent oversight from the Nuclear Regulatory Commission (NRC), with plants potentially being cited in the Multiple/Repetitive Degraded Cornerstone Column (Column 3) or the Unacceptable Performance Column (Column 4) of the NRC Action Matrix. Plants in this situation may be required to perform a design basis reconstitution project to reestablish control and validation of the documents that constitute their design and licensing basis. A calculation reconstitution is often undertaken as part of that effort.

Scope of Services:

Sargent & Lundy has performed and managed successful large and complex calculation programs for multiple nuclear stations, including Clinton, D.C. Cook, Fort Calhoun, LaSalle, Point Beach, and Salem. Our responsibilities on these efforts encompassed developing a methodology to identify critical calculations, performing a screening and technical review of thousands of existing calculations to identify those requiring revision, and generating new calculations to accommodate for those not found. We have also developed databases linking the design basis documents to their licensing commitments included in the Safety Analysis Report and other licensing basis documents. Oftentimes, the calculations were revised to bring them to current-day standards using documented inputs, validated assumptions, updated methodologies, and, in some cases, advanced computer programs to perform the analysis.

Highlights:

- Screening all station calculations to identify population of key calculations.
- Objectively assessing key calculation quality.
- Successfully revising thousands of calculations.
- Demonstrating expertise associated with client design basis documentation.
- Successfully completing calculation projects to help nuclear plants achieve reduced NRC oversight.

Sargent & Lundy Contact: Robert J. Peterson, Senior Manager
312-269-3942