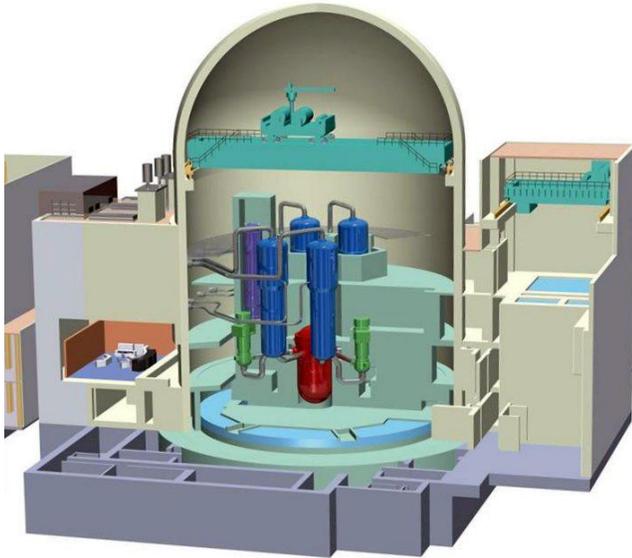




## NEW REACTOR SUPPORT SERVICES



### TECHNOLOGY ASSESSMENTS

HukariAscendent has performed reviews of each new reactor system being offered in the United States (AP-1000, ABWR, ESBWR, EPR, APWR) as part of our involvement in the emergence of next generation commercial nuclear power. These reviews include both the assessment of each new design on its own merits and a technical comparison of the competing designs. The effort was funded by a nuclear utility and the results were a major input to its decision making and technology selection process. The effort was part of a detailed, bottom-up approach responsive to the specific needs and interests of the utility. HukariAscendent participated in the development of a comprehensive approach for performing the evaluation which included a weighting and scoring structure of numerous related technical attributes. Other technology areas assessed included each reactor project team, project risks, manufacturing, and regulatory acceptance and review. Specific examples of technology review facets included:

- Design margins
- Safety margins
- Status of design completeness and certification
- Radiation exposure
- Staffing levels
- Technology and design uncertainties
- Materials
- Technical specification flexibility
- Robustness of project controls
- Information management
- Schedule credibility
- Equipment lead times
- Plans to address availability of labor
- Construction simplicity
- Safety risk
- Maintenance implications
- Site development factors
- Fuel cycle and fuel storage

A total of approximately three dozen technical attribute areas were formally reviewed, and consensus scores established regarding the absolute and relative merit of each technology. A technology assessment report has been provided including discussion of strengths and weaknesses of each new reactor offering. The client utility has characterized the effort as the most detailed evaluation of new reactor technology yet undertaken by a nuclear utility.

## ***SITE DEVELOPMENT, ENGINEERING, AND MANAGEMENT***

**HukariAscendent** provided a Project Engineering Manager as part of an Owner's Engineer organization. This position included responsibility for:

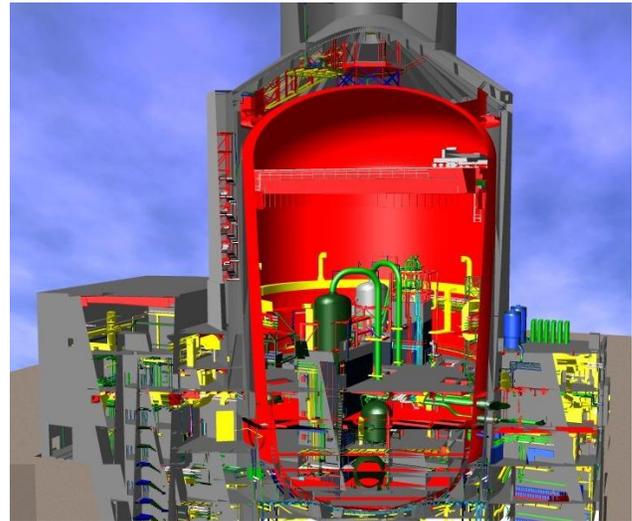
- Conceptual design development
- Site Feasibility Study
- Development of site information to support the design details for nuclear infrastructure and reactor systems
- Development of a specific site configuration for utility use in evaluating the deployment of new nuclear power generation
- Development, design, and construction of balance of plant systems
- Structural, instrumentation and control, electrical, and mechanical engineering
- Optimization/design of cooling water system
- Relocating wetlands
- Routing electrical power and reconfiguring switchyards
- Routing of plumbing, sanitary facilities, and fire protection systems
- Optional construction techniques
- Cost estimating
- Site Development Plan, planning, long lead time procurements
- Development of the overall site Construction Plan and integrated schedule
- Quality assurance

## ***SUPPORT OF NEW NUCLEAR POWER INTERNATIONALLY***

**HukariAscendent** is developing the Quality Assurance Program for an entire new system of multiple nuclear power plants for an international client. This QA Program is unique because it is being developed in a country with no existing industrial or regulatory infrastructure to support nuclear power.

## ***NEW LICENSE (DCD and COLA) SUPPORT***

**HukariAscendent** is providing licensing support in the development of several new reactor design certification and combined construction/operating license (COLA)



applications (AP-1000, EPR, APWR, ESBWR). Responsibilities for site characterization activities include managing the compilation of documents addressing key parameters required for regulatory review (e.g., site boring, geologic parameters, hydrology, meteorology, air/water sampling, etc.). This information will be key in the development of the Environmental Report of the COLA license application.

We are also providing oversight and review of COLA sections developed by other organizations. These include reviewing for compliance with the requirements of 10 CFR 52, Reg Guide 1.206, and NUREG 0800. **HukariAscendent** is also responsible for ensuring that the Reference Reactor Application (R-COLA) is properly utilized in Site specific (S-COLA) submittals.

The **HukariAscendent** network includes personnel who can support successful, timely interaction with regulatory staff. Related experience of our resources includes development of communication plans, presentations to NRC staff, development of responses to formal NRC requests for information, answering third party interrogatories, development of testimony in support of hearings, and interactions with the public. We also have experience in the project management of licensing activities in a wide variety of regulatory and technical arenas.