

Probabilistic Risk Assessment Operational Assistance Co-sourcing and Outsourcing

Background

As the probabilistic risk assessment (PRA) and risk applications quickly become part of the fabric of plant operation and licensing, the time demands on a utility's current PRA staff are continually increasing to support workday scheduling, outage planning and emergent plant configurations. At the same time, industry consensus standards (American Society of Mechanical Engineers and American Nuclear Society) for PRA scope and technical adequacy are undergoing approval and will soon be required to support the use of the PRA in regulatory space. PRA development work necessary for compliance with these industry standards requires significant additional effort in the short term. Furthermore, plant performance improvements using risk-informed approaches that have been generically approved by the U.S. Nuclear Regulatory Commission have not been widely implemented at most plants, due in part to a lack of PRA resources (i.e., people, time or money). In the long term, these standards call for a commitment to maintain these PRA models and risk-informed applications in order to be consistent with the as-built, as-operated plant. At the same time, the fact that the workforce is aging has started to have an adverse impact on the existing utility PRA staffing levels.

Description

Westinghouse can develop specific co-sourcing and outsourcing arrangements for PRA activities to fit utilities' overall goals and objectives for PRA support.

Westinghouse can provide the PRA resources and staff required to fully maintain and implement the baseline PRA and online maintenance models. Westinghouse's PRA staff has a cadre of experienced industry experts skilled in a broad range of individual PRA technical elements. Through its knowledge transfer programs, Westinghouse is also developing a successor PRA staff, both at partner plants and internally, so that long-

term capabilities for PRA support are maintained.

Westinghouse can also provide the PRA resources and staff required to implement risk-informed applications in order to meet the concurrent utility goals and objectives of increasing safety, increasing plant operational flexibility and reducing costs.

Westinghouse has developed many of the risk-informed applications and methods for the Pressurized Water Reactors Owners Group and has firsthand experience in implementing many of these activities.

Finally, Westinghouse has the on-site experience at operating plants to understand the impact of the PRA on plant operations and to augment the utility's PRA staff.

Westinghouse can tailor an arrangement to provide PRA activities to meet utility needs. Through a committed supplier arrangement, Westinghouse has the bench strength to support changing month-to-month staffing requirements, using PRA personnel familiar with the plant.

Benefits

The major advantage of these arrangements is the flexibility afforded to utilities for expanded PRA resources to meet their goals and objectives, in both the short and long term, with a PRA staff that is familiar with the design and operation of the station. Westinghouse currently invests in its PRA resources to significantly increase the short- and long-term success of its partner utilities in the PRA area. A tailored co-sourcing or outsourcing arrangement can also shift the financial burden of attracting, hiring, training and retaining PRA resources from the utility to Westinghouse.

Westinghouse's many offices and its PRA work for operating plants and new reactor designs (the AP1000® power plant, System 80+ reactor, advanced boiling water reactor and pebble bed modular reactor) allow its customers to take advantage of its unique PRA experience, which Westinghouse has gained through implementing PRA-model improvements and risk-informed applications around the world.



Experience

Westinghouse currently provides PRA services through a co-sourcing arrangement with the Omaha Public Power District (OPPD) for the Fort Calhoun Station. Under this arrangement, Westinghouse is responsible for maintaining the Fort Calhoun PRA model, which permits the OPPD PRA staff to focus on day-to-day plant PRA support. To meet OPPD goals and objectives, additional efforts to implement risk-informed initiatives can be shared between the OPPD PRA staff and Westinghouse.

Westinghouse also provides PRA services through an outsourcing arrangement with Luminant for the Comanche Peak Station. Under this arrangement, Westinghouse is responsible for all the PRA support for the station. Following the review of Luminant requirements and expectations for PRA support, Westinghouse is able to adjust the scope of its services so that the Luminant goals and objectives for PRA services are met.

Westinghouse has supported Luminant's PRA needs through an outsourcing arrangement since

2006. The Westinghouse Comanche Peak PRA staff is located on-site and provides 24/7 support. Other Westinghouse locations have provided timely additional support for emergent issues at the plant.

Westinghouse supports OPPD PRA needs through a co-sourcing arrangement that began in early 2008. The Westinghouse staff that supports PRA is located primarily at the office in Windsor, Connecticut (USA), but Westinghouse also maintains significant on-site support.

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