



Lessons Learned from Design and Construction of New US Nuclear Facility

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For reasons related to licensing uncertainty, economic slowdown, and questionable financial backing, no new nuclear facility projects have been undertaken in the United States since the Three Mile Island Incident in 1979; however, a need for such facilities (both nuclear power plants and nuclear fuel facilities) continues and various incentives leading to the start of a nuclear renaissance have occurred. One incentive is a complete overhaul by the US Nuclear Regulatory Commission of the earlier two step licensing process under 10 CFR 50. The earlier approach required first a construction permit and then an operating license, whereas the new approach allows a more streamlined (one step) combined license (COL) approach utilizing Standard Design Certifications via the regulatory framework created by 10 CFR 52. Other incentives include US Government backed loan guarantees as well as private company contributions.

One aspect to the new process has been consideration and implementation of many new topic-specific regulations and industry standards which have continued to evolve during the past 30 years in spite of the lack of new plant design and construction activity. Therefore, an Owner attempting a new nuclear facility project under 10 CFR 52 needs to address a myriad of new requirements previously unconsidered.

Several new projects including both power plants and fuel facilities have begun the new licensing process with its many new requirements to consider, but a uranium enrichment facility has run the gamut first. This paper will summarize many of the lessons learned from designing, constructing and testing this first new nuclear facility to be built in the US in over 30 years.

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