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Design Knowledge and Design Change Management in the Operation of Nuclear Fleets

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The operating lifetime of a nuclear plant spans several decades. During this time, the plant may undergo design changes resulting from experience feedback, new knowledge or requirements, and safety reviews. To ensure that safety remains optimized, these changes must be carried out with a full understanding of and without compromising the design intent.

The licensee holds prime responsibility for the safety of the plant, and fully responsible for design change management. It fulfils this responsibility by establishing a formal system for ensuring the safety of the plant design throughout its lifetime, which includes establishing a formally designated entity within its management system, referred to as the Design Authority.

The establishment of a Design Authority may be challenging for many operators. Therefore the licensee may allocate tasks to external organizations - the original designers - that have a specialized knowledge of specific parts of the plant, including vendors and equipment suppliers.

Utilities operating plants of similar design should take advantage of this similarity to manage their knowledge through an international fleet-wide approach, facilitating sharing of experience and enabling similar solutions to be adopted for design changes. Opportunities for exchanges brought by owners' groups, and other operators' groups should be fully developed.

Country or International Organization

World Nuclear Association

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